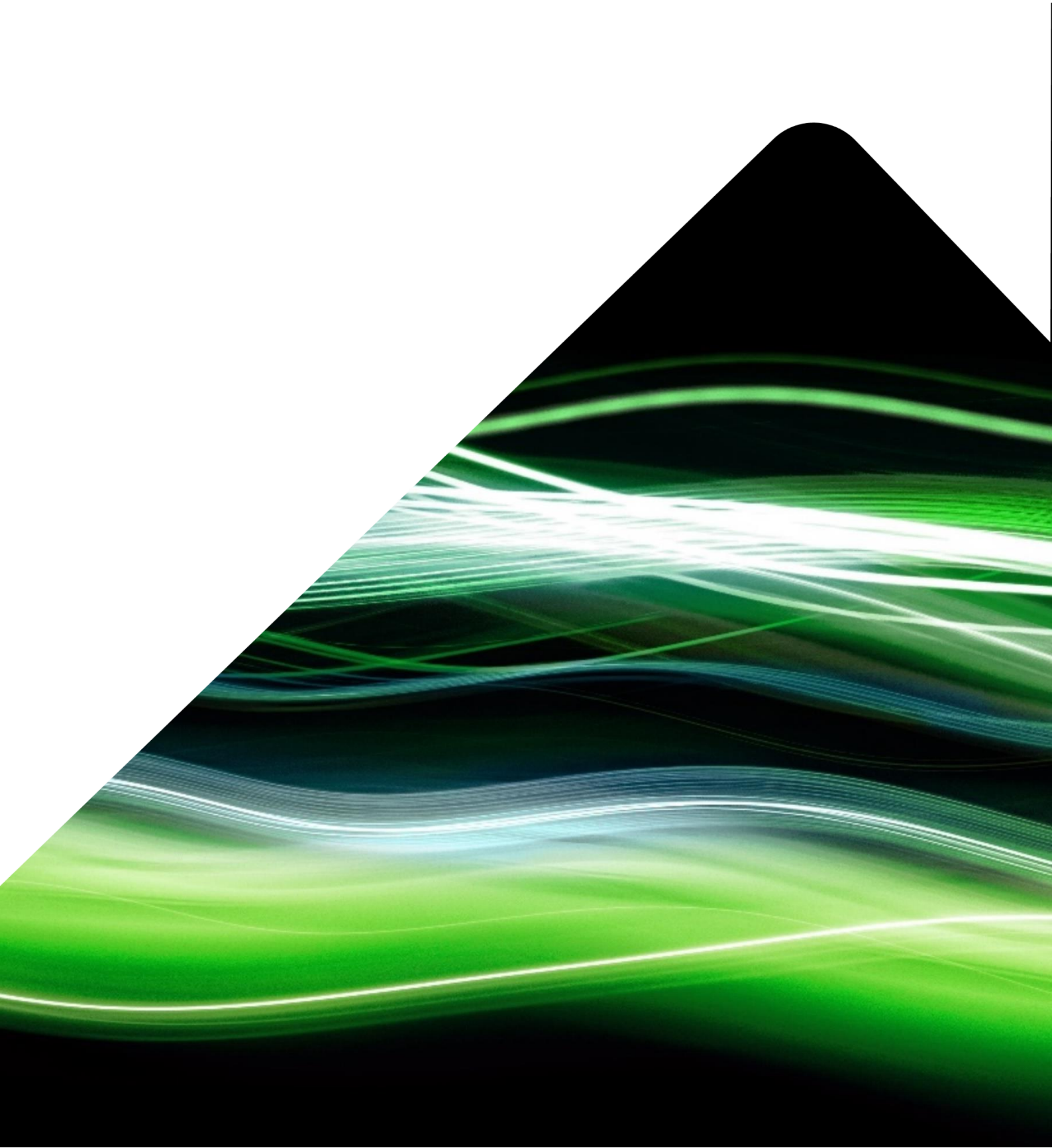


Victorian Bushfire Mitigation Plan – For Public

Accepted by Energy Safe Victoria 10 July 2026



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1. Purpose

This Victorian Bushfire Mitigation Plan (VBMP) sets out how NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390) (Transgrid) and Lumea Pty Ltd (ACN 626 136 865) as trustee for Lumea Trust (ABN 94 121 353 950) (Lumea) will minimise bushfire risk arising from Transgrid and Lumea's Supply Networks As Far As Practicable (AFAP).

This VBMP demonstrates how Transgrid and Lumea will minimise bushfire risk AFAP arising from Transgrid and Lumea's Supply Networks, asset management across the life cycle stages (from planning to decommissioning and disposal), and vegetation management on and around Transgrid and Lumea's Supply Networks.

This VBMP is required to be submitted by Transgrid and Lumea as Major Electricity Companies (MECs) in Victoria in accordance with the *Electricity Safety Act 1998 (the Act)* and the ESBMR. This VBMP is developed in accordance with the requirements of AS 5577-2013: Electricity Network Safety Management Systems.

The purpose of the BMP is to address how Transgrid and Lumea will comply with their obligations under section 113A(1) of the Act and an accepted BMP forms part of the accepted **ESMS**.

This VBMP provides the prescribed particulars relating to Transgrid and Lumea as required by Regulation 7 of the *ESBMR* in Sections 5 to 14.

This VBMP in Section 16 references other plans, manuals, standards, policies, procedures, and work instructions to cover all activities that contribute to the mitigation of bushfire risk from Transgrid and Lumea's Supply Networks. This includes defining if the reference is an Incorporated Document to this VBMP, an informative Reference Document, or a regulatory requirement.

This VBMP is available to all Transgrid and Lumea staff and authorised contractors via the Wire.

As per s.113A(3)(b) of *the Act*, a copy of the accepted VBMP with the prescribed information as required by Regulation 8 of the *ESBMR* is available at Transgrid and Lumea's Melbourne office location (80 Collins St, Melbourne, Victoria) by arrangement with the Transgrid Director of Strategic Asset Management. This public version in compliance with Regulation 8 of the ESBMR is also available on Transgrid's website (<http://www.Transgrid.com.au/>) and Lumea's website (<http://www.lumea.com.au>).

This VBMP has been prepared and submitted by Transgrid and Lumea for the Transgrid and Lumea Supply Networks (Refer Table 3 of Section 6.1) for which Transgrid and Lumea are responsible for delivery of this VBMP.

Signatories to this Victorian Bushfire Mitigation Plan:			
Signed in the Transgrid and Lumea ESV approved confidential version Jason Krstanoski Executive General Manager of Network, Transgrid		Signed in the Transgrid and Lumea ESV approved confidential version Craig Stallan Executive General Manager, Lumea	
Endorsed by Evan Lamplough	Endorsed by David Aurelius	Prepared by Stephen Renshaw (for Transgrid)	Prepared by Susan Huggett (for Lumea)
General Manager of Asset Management (Acting)	Chief Risk Officer	Director of Strategic Asset Management, Network (Acting)	General Manager of Commercial Operations

2. Scope

The Supply Networks each owned by Transgrid and Lumea in scope of this VBMP are:

Transgrid:

- Deer Park Terminal Station (DPTS)
- Dederang Capacitor Banks (Located within AusNet Services' Dederang Terminal Station)
- Wodonga Capacitor Banks (Located within AusNet Services' Wodonga Terminal Station)
- Transmission Line X1/X9 (Victorian/NSW border to Ausnet Services' Red Cliffs Terminal Station)
- Transmission Line 060 (Victorian/NSW border to AusNet Services' Transmission Line Structure 401 in Victoria)

Lumea:

- Kiamal Terminal Station (KMTS).
- Berrybank Supply Network including:
 - Berrybank Terminal Station (BBTS)
 - Berrybank Wind Farm Terminal Station (BBW)
 - Berrybank Transmission Line (BB1/BB2)
- Plumpton Terminal Station (PRTS)

The structure of this VBMP is aligned to the structure of the ESBMR as detailed in Section 4.

3. Definitions

The terms and definitions relating to this procedure are listed in Table 1.

Table 1 Definitions and Abbreviations

Abbreviation	Definition
ACT	Australian Capital Territory
the Act	Electricity Safety Act 1998 (Vic)
AEMO	Australian Energy Market Operator Limited (ACN 072 010 327) of Level 22, 530 Collins Street, MELBOURNE VIC 3000 Note: As of 1 November 2025, responsibility for planning Victoria's Transmission Network transferred from the Australian Energy Market Operator (AEMO) to VicGrid. AEMO remains relevant for Transmission Network operational coordination.
AFAP	As Far as Practicable – Acronym used in this VBMP to describe how Transgrid and Lumea are meeting the requirements of Section 98 of <i>the Act</i> .
AMC	Transgrid and Lumea's Asset Monitoring Centre
ARMS	Action and Risk Management System – A corporate system for managing corporate risk registers, Audit register, compliance register, and Incident register. The ARMS includes functionality for recording and managing the completion of actions to improve risks, close out Audit actions, prevent repeat Incidents, and ensure compliance activities are completed. Current installed software system vendor: Riskconnect
AS	Standards Australia

Abbreviation	Definition
Asset	A physical component of a Supply Network.
Asset Maintenance Plan	The term refers to Non-Prescribed Maintenance Plan describe the type of maintenance activities and intervals required for Transgrid and Lumea's Supply Networks.
Asset Management System or AMS	Asset Management System consistent with International Standards Organisation 'ISO 55001:2014 Asset Management – Management Systems – Requirements' applied to Transgrid and Lumea's Supply Networks and the activities included in this VBMP.
Asset Manager	Refers to one of, or collective of, the Directors of Asset Management reporting to the General Manager Asset Management.
Audit	An activity undertaken to determine whether Transgrid and Lumea is complying with the requirements of this VBMP and identify any areas of non-compliance.
AusNet Services	AusNet Transmission Group Pty Ltd (ACN 079 798 173) of Level 31, 2 Southbank Boulevard, Southbank Vic 3006 (AusNet Services)
BB1/BB2	Berrybank Terminal Station to Berrybank Wind Farm Terminal Station 220kV Transmission Line
BBTS	Berrybank Terminal Station
BBW	Berrybank Wind Farm Terminal Station
Berrybank Supply Network	Defines the collective of BBTS, BBW, and Transmission Line BB1/BB2.
Blue Book	Code Of Practice On Electrical Safety For Work On Or Near High Voltage Electrical Apparatus – Available on the ESV website.
BMI	Bushfire Mitigation Index
Bushfire Maintenance Program	Maintenance work order data records that are identified by the field code "Bushfire In Scope", marked as "INC – Include Reviewed" within the metadata
CAR Audit	Control Assurance Review Audit A scheduled systematic method of performing an Audit to • Validate identified risk controls are in place and are effective. • Verify compliance and facilitating improvements to the processes included in this VBMP. • Verify effectiveness of the VBMP.
CB	Circuit Breaker
CFA	Victorian Country Fire Authority
CIGRE	International Council on Large Electric Systems
COMA or (Services Agreement)	Construction, Operations and Maintenance Services Agreement under which (Transgrid) provides construction, operations, and maintenance services to the service recipient (Lumea) and its subsidiaries.
Contractor	Service provider that provides first response, emergency services, and/or maintenance services for the operation of Transgrid and Lumea's Supply Networks via a signed contract.
Critical Electricity Infrastructure	Under the Electricity Industry Act 2000 (Vic) this is defined as: (a) a critical generation facility; or (b) a related coal mine; or (c) a substation, terminal station or distribution system or transmission system switchyard
Defect	An out-of-specification condition which, if left unattended, may affect the bushfire risk from a Supply Network. Defects are identified as an Issue during routine maintenance, inspections, operating failure, audit, or asset management review and has been verified as requiring corrective maintenance, resulting in the creation of a corrective Work Order.
DNSP	Distribution Network Service Providers
DPTS	Deer Park Terminal Station

Abbreviation	Definition
DTSO	Declared Transmission System Operator means a person declared by Order under section 3B of <i>the Act</i> to be a declared transmission system operator, or any successor in law or an assignee of that person as per Section 33 of the National Electricity (Victoria) Act 2005.
EAM	Enterprise Asset Management system. This system manages: • An asset register that contains metadata of for the component parts (assets) of Transgrid and Lumea Supply Networks. • The management of maintenance activities by the creation of work packages under the cover of a work order. • The provision of reports on the performance of maintenance activities. • The procurement of materials required to build and maintain the Transgrid and Lumea Supply Networks. • Storage of information on the condition of assets obtained during inspections. • Records labour allocation and usage to build and maintain the Transgrid and Lumea Supply Networks. The EAM may consist of multiple connected databases and applications. • Current implemented software system: Maximo
EDMS	Electronic Document Management System - is used to securely manage and store relevant documents and drawings of the Transgrid and Lumea Supply Networks. Transgrid and Lumea currently use 'EDMS ProjectWise Connect Edition' software that is hosted in Microsoft Azure.
ELCMP	D2020/00020 Electric Line Clearance Management Plan that meets the requirements of the <i>Electricity Safety (Electric Line Clearance) Interim Regulations 2025</i> and is approved by ESV.
Equis Energy (Equis)	Equis Energy (Australia) Projects (MREH A1 AssetCo) Pty Ltd (ACN 669 645 461) as trustee of the Equis Energy (Australia) MREH A1 Asset Trust ABN 92 607 537 147 of Ground Floor, 36 Esplanade, Brighton, MELBOURNE VIC 3186 (MREH A1), And Equis Energy (Australia) Projects (MREH A2 AssetCo) Pty Ltd (ACN 669 645 489) as trustee of the Equis Energy (Australia) MREH A2 Asset Trust ABN 34 770 707 887 of Ground Floor, 36 Esplanade, Brighton, MELBOURNE VIC 3186 (MREH A2), And Equis Energy (Australia) Projects (MREH A3 AssetCo) Pty Ltd (ACN 669 645 514) as trustee of the Equis Energy (Australia) MREH A3 Asset Trust ABN 47 920 042 214 of Ground Floor, 36 Esplanade, Brighton, MELBOURNE VIC 3186 (MREH A3)
Energisation Date	The date at which a Supply Network is electrically connected to a TNSP or DNSP. This date occurs prior to or concurrent to the in-service-date.
ESBMR	<i>Electricity Safety (Bushfire Mitigation) Regulations 2023 (Vic)</i>
ESC	Essential Services Commission (of Victoria)
ESELCR	<i>Electricity Safety (Electric Line Clearance) Interim Regulations 2025 (Vic)</i>
ESI	Electrical Supply Industry
ESMR	<i>Electricity Safety (Management) Regulations 2019 (Vic)</i>
ESMS	Electricity Safety Management Scheme (This scheme is to meet the requirements of the <i>Electricity Safety Act 1998 (Vic)</i> and the <i>Electricity Safety (Management) Regulation 2019 (Vic)</i> . This scheme is an AS 5577 compliant system as applied to Transgrid and Lumea's Supply Networks.
ESV	Energy Safe Victoria, the Victorian technical and safety regulator
FEOR	Forced / Emergency Outage Report
Fire Control Authority	CFA or FRV
Fire Danger Period (FDP)	Fire Danger Period means a period declared under Section 4 of the Country Fire Authority Act 1958 to be a fire danger period. Fire Control Authorities declare the Fire Danger Period (FDP) for each municipality (shire or council) at separate times in the lead up to the fire season. It depends on the amount of rain, grassland curing rate and other local conditions.

Abbreviation	Definition
	Transgrid and Lumea increase their reporting frequency from 1 October and ends on 31 March for operational purposes. This enables Transgrid and Lumea to plan and prepare for heightened bushfire risk at that time of year. Similarly, the end of FDP is unpredictable across the states. Transgrid and Lumea identify the end of FDP as 31 March due to the various end dates across Victoria, and to assist in reporting on bushfire performance.
Fire Risk Work	Work (other than Hot Work) that has the potential to cause a fire. Fire Risk Work involves heat or potential spark producing activities that have the potential of creating a fire risk, Fire Risk Work includes: • Slashing • Mulching • Operation of steel tracked machines or steel attachments on mobile plant (e.g. grading, boring, excavation, and the like) • Chainsaw operation • Chipping • Mowing • Brush cutting • Operation of motor vehicles/rubber tyred mobile plant (excluding their use on sealed or unsealed gravelled roads, gravelled switchyards or formed benches).
Foreseeable	Ability to perceive, know in advance, or reasonably anticipate that damage or injury will likely ensue from acts or omissions.
FRMP	Fire Risk Management Plan
FRV	Fire Rescue Victoria
FSA	Formal Safety Assessment as defined in AS 5577. Within this VBMP FSA it is referring to the incorporated document <u>D2024/00836 Victorian Formal Safety Assessment</u>
Global Power Generation	Global Power Generation Australia Pty Ltd (ACN 130 542 031)
HAZOP	Hazards In Operation – HAZOP studies deal with the identification of potential deviations from the design intent, examination of their plausible causes, and assessment of their consequences that arise during the operation of an Asset.
HBRA	Hazardous Bushfire Risk Area – As defined in <i>the Act</i> as an area: (a) to which a fire authority has assigned a fire hazard rating of "high" under section 80 of <i>the Act</i>, whether or not the area is an urban area; or (b) that is not an urban area (other than an area a Fire Control Authority has assigned a fire hazard rating of "low" under section 80 of <i>the Act</i>)
Hot Work	Hot Work is any activity that involves high temperatures and has a high risk of creating a fire. Examples of Hot Work are as follows, but are not limited to: • Welding, Oxy-Acetylene or Plasma cutting. • Grinding/cutting of metal including the use of flexible sanding disks. • Production of heat, flammable fumes, and gases during work activities • Dry concrete metal grinding/cutting.
HPI	High Potential Incident – Any Incident that has the potential to result in an undesired outcome such as bushfire, loss of supply, public or worker safety issue, or environmental damage. This is one of the reactive measures that is used to measure Transgrid and Lumea's Supply Networks performance.
HSMS	Transgrid and Lumea's certified Work, Health, and Safety Management System
HSE	Represents Transgrid and Lumea's health and safety, and environment functions.
Incident	Any unplanned event on Transgrid and Lumea's Supply Networks which caused, or has potential to cause, damage to the environment, property, security, public safety, loss of electricity supply, fire, injury, or disease. An Incident may be referred to as an event in referenced documents.
Incorporated Document	A document that forms part of the accepted VBMP. Incorporated Documents are shown with bold, underlined font.

Abbreviation	Definition
Implementation Audit	An Audit undertaken to ensure that the requirements included in this VBMP are implemented for all (existing and new) Transgrid and Lumea Supply Networks.
In-Service Date	The date at which a Supply Network is operational and 'on load' supplying customers
ISO	International Standards Organisation
Issue	An Issue is a potential Defect identified during routine maintenance, inspections, operating failure, or asset management review. An Issue is reviewed by the AMC, Asset Management, and Maintenance Engineering and if verified as a Defect is converted into a Corrective Maintenance Work Order.
KMTS	Kiamal Terminal Station
KSF Project Trust	KSF Project Nominees Pty Ltd as trustee for KSF Project Trust (ACN 625 106 907)
LBRA	Low Bushfire Rating Area. Deemed to mean areas assigned a fire hazard rating of 'low'.
Lineworker	Means a person who carries out electrical linework including construction, alteration, inspection, repair, maintenance, or disassembly of a part of a Supply Network as per <i>the Act</i> . Note: A Lineworker may be referred to as 'Transmission Line Technician' and 'Transmission Line Inspector' in Referenced Documents.
Lumea	Lumea Pty Ltd (ACN 626 136 865) as trustee for Lumea Trust (ABN 94 121 353 950) (operating as Lumea)
MEC	A major electricity company as defined in <i>the Act</i>
MREH	Melbourne Renewable Energy Hub operated by Equis Energy
Network Asset Strategy (NAS)	The strategic asset management plan which is required to meet compliance with ISO 55001 and is updated at least every 3 years as part of compliance to the ISO 55001 standard. The NAS contains corporate objectives and performance targets (e.g. Fire starts, maintenance performance, etc.) related to bushfire risk management that are subject to update in order to continually improve or sustain the effectiveness of this VBMP. (Refer section 6.8.1)
Network Services	The services provided by Transgrid or by Lumea under a Network Services Agreement. Network services are agreed under a formal Network Services Agreement (NSA) signed with AEMO or VicGrid and include: • The provision of transmission services that meet: - The functional specification - Transmission performance requirement agreed in the NSA. • Requirement to comply with: - Incident reporting obligations as defined in the agreed NSA. - Supply Network planning obligations as defined in the agreed NSA. • Maintenance and provision of: - Operational information defined in the NSA. - Records in accordance with the agreed NSA.
Network Services Agreement or NSA (also title Network Agreement)	A legally binding agreement signed with AEMO or VicGrid which includes agreed terms on: • Functional specification and performance requirements or providing transmission services. • Incident reporting and network planning obligations. • Maintenance obligations and provision of operational information and records.
Non-conformance or NC	The failure to comply with Transgrid and Lumea's internal requirement, standard, or procedure.
Non-routine Maintenance	Maintenance actions required to address: • A Defect identified through routine maintenance and inspection, alarms, condition-monitoring performance indicators, operating failure, or asset management review. • Upgrades to assets to address safety issues, outcomes of audits, or any other unscheduled inspection or maintenance activity.

Abbreviation	Definition
NSP	Network Service Provider - A provider of transmission (TNSP) or distribution network service (DNSP) as defined by the National Electricity Rules.
OPGW	Optical Ground Wire
Powercor	Powercor Australia Ltd (ACN 064 651 109) of 40 Market Street Melbourne (Powercor)
Practicable	As defined in the Section 3 of <i>the Act</i>
PRTS	Plumpton Renewable Terminal Station
PSERP	<u>D2020/03320 Power System Emergency Response Plan</u> – The PSERP sets out the processes to manage incidents and emergencies on Transgrid and Lumea's Supply Networks and provides check sheets for the roles required to manage the Incident and the response.
Referenced Document	A document that informs the assessment but does not form part of the accepted VBMP. Reference documents are shown as underlined within this VBMP.
Routine Maintenance	All planned repetitive activities that are programmed to check the performance or maintain the serviceability of an item of plant or equipment. Referred to as routine maintenance or inspection.
SCADA	SCADA (an acronym for supervisory control and data acquisition) is a control system architecture comprising computers, networked data communications, and graphical user interfaces for high-level supervision of machines and processes.
Serious Electrical Incidents	Serious Electrical Incidents are Incidents requiring reporting and investigation in accordance with ESV's <i>Incident reporting and safety reporting guidelines – A guide for major electricity companies, July 2022</i> . A Serious Electrical Incident is one which causes or has the potential to cause: (a) The death of or injury to a person; or (b) Significant damage to property; or (c) A serious risk to public safety
Services Agreement	Refer 'COMA'
Substation	Substations are the 'junctions' where circuits connect to one another, creating the transmission or distribution network around which electricity flows at high voltage and may include transformation of voltages, switching systems, protection systems, and other reactive plant to manage power quality. Within this VBMP a reference to a 'Substation' will be interpreted as a reference to a Terminal Station.
Substation Asset Inspector	Means a person who carries out Substation (Terminal Station) construction, alteration, repair, maintenance, inspection, or disassembly of a part of a Supply Network required to perform activities included in Section 6.8. Note: A Substation Asset Inspector may be referred to as 'Substation Fitter', 'Substation Technician' in Referenced Documents.
Supply Network	A network consisting of electric lines (Transmission Lines), Substations, circuits, and any other thing required for the purposes of the transmission, distribution or supply of electricity as defined in Section 3 of <i>the Act</i> . Supply Network in this VBMP is a reference to the Supply Networks identified in Section 6.4.1 to 6.4.6.
SWHVA	D2025/00007 Safe Work Handbook Victorian Assets that defines the processes that demonstrate compliance with the Blue Book.
SYTS	Sydenham Terminal Station
Terminal Station	Term used in Victoria for a Substation that forms part of a Transmission Network.
TFB day	Total Fire Ban day means a day that has been declared to be a day of partial or total fire ban under Section 40(1) of the <i>Country Fire Authority Act 1958</i> .
the Wire	Transgrid and Lumea's internal intranet webpage for information sharing.
TNSP	Transmission Network Service Provider - A person who engages in the activity of owning, controlling, or operating a transmission system. (Refer National Electricity Rules v224 Chapter 10).

Abbreviation	Definition
TRA	Technical Risk Assessment. Hazard identification and assessment of the risk associated with a new technology that is not included in Transgrid and Lumea's design standards.
Transgrid	NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390) (operating as Transgrid)
Transmission Line	An electric line including supporting structures that is used for the transmission of electricity within a Supply Network, or with other Transmission Networks, NSPs, and customers (generators).
Transmission Network	A network within any participating jurisdiction operating at nominal voltages of 220kV and above plus: - any part of a network operating at nominal voltages between 66 kV and 220 kV that operates in parallel to and provides support to the higher voltage transmission network. - any part of a network operating at nominal voltages between 66kV and 220 kV that is not referred to in paragraph above but is deemed by the AER to be part of the transmission network.
TSS	Transgrid and Lumea Spatial System – Transgrid and Lumea's system for providing geographic spatial information on the location of its electricity Supply Networks. It includes additional information stored as layers such as roads, bushfire risk areas, and cadastral information. This system is commonly called a Geographic Information System (GIS)
VBMP	This Victorian Bushfire Mitigation Plan (Transgrid and Lumea TRIM No: D2018/00674)
VicGrid	VicGrid Body Corporate (ABN 56 367 315 313) of Level 37 2 Lonsdale St Melbourne VIC 3000 On 1 November 2025, responsibility for planning Victoria's Transmission Network transferred from the Australian Energy Market Operator (AEMO), through its AEMO Victorian Planning (AVP) division, to VicGrid. This includes the declared shared network and all associated declared network functions. From this date, AEMO's Victorian electricity transmission network planning responsibility's role ended in Victoria. All agreements are being novated or assigned from AEMO planning to VicGrid. All references in this VBMP related to the Victorian Network Planner have been changed to VicGrid.
WSAT	Worker Safety and Authorisation Training – A generic term for a computerised software system used by Transgrid and Lumea to manage field worker competence and training.

4. Compliance Table

Table 2 maps the ESBMR to the applicable sections of this VBMP and indicates any sections that are exempt or not applicable.

Table 2 Compliance to the ESBMR

Clause No.	Section Number in this VBMP
7 Prescribed particulars for bushfire mitigation plans—major electricity companies	5
8 Prescribed particulars for bushfire mitigation plans to be made publicly available by major electricity companies For the purposes of section 113A(3) of <i>the Act</i> , the following are the prescribed particulars -	6
(a) the company's, address, and telephone number;	6.1
(b) the company's telephone number for members of the public to call in an emergency that requires action by the company to mitigate the danger of bushfire	6.1
(c) the company's bushfire mitigation policy;	6.2
(d) the objectives to achieve the mitigation of fire danger arising from the company's supply network;	6.3
(e) a description, map, or plan of the land to which the bushfire mitigation plan applies;	6.4

Clause No.	Section Number in this VBMP
(f) the preventative strategies and programs to minimise the risk of the major electricity company's supply network starting fires	6.5
(g) the company's plan for testing to ensure that its supply network can operate to meet the required capacity in relation to each polyphase electric line origination from a zone substation specified in Schedule 1;	6.6
(h) the details of the processes and procedures for installing and maintaining in operation an Automatic Circuit Recloser in relation to each overhead SWER line in the company's supply network;	6.7
(i) the company's plan for inspection of its supply network;	6.8
(j) the details of the processes and procedures for ensuring that each person who is assigned to carry out inspections under the plan referred to in paragraph (i) and of private electric lines - (i) has satisfactorily completed a training course approved by Energy Safe Victoria; and (ii) is competent to carry out the inspections;	6.9
(k) the details of the processes and procedures for ensuring that persons (other than persons referred to in paragraph (j)) who carry out or will carry out functions under the plan are competent to do so;	6.9
(l) the company's operation and maintenance plans for the major electricity company's supply network— (i) in the event of a fire; and (ii) during a total or partial fire ban day; and (iii) during a fire danger period;	6.10
(m) the investigations, analysis, and methodology to be adopted by the company for the mitigation of the risk of fire ignition from its supply network;	6.11
(n) the company's policy in relation to the assistance to be provided to Fire Control Authorities in the investigation of fires near the major electricity company's supply network;	6.12
(o) details of processes and procedures for enhancing public awareness of— (i) the responsibilities of owners of private electric lines that are above the surface of the land in relation to maintenance and mitigation of bushfire danger; and (ii) the obligation of the major electricity company to inspect private electric lines that are above the surface of the land within its distribution area	6.13
9 Prescribed parts of electric lines	8
10 Prescribed times of inspection	9
11 Prescribed standards of inspection	10
12 Minimum clearance of private electric lines (other than bare open wire electric lines)	11
13 Prescribed period in which notice of inspection is to be given	12
14 Prescribed form of notice to be given before inspection	13
15 Exemptions	14

5. Bushfire Mitigation (Regulation Reference 7)

Please contact Transgrid if access to the full version compliance with Regulation Reference 7 is required.

6. Prescribed information about the Plan to be made publicly available by Transgrid and Lumea (Regulation Reference 8)

6.1. Background (Regulation reference 8(a) & (b))

The legal entities of Transgrid and Lumea are the MEC for Transgrid and Lumea's Supply Networks, respectively, in this VBMP and identified in Table 3 below.

This VBMP applies to each submitting entity, being Transgrid or Lumea, in respect of Transgrid or Lumea's own Supply Networks, respectively. Lumea remains responsible for their obligations under Part 10 of *The Act*, even though it has a Services Agreement with Transgrid. Under the Services Agreements, Lumea engages Transgrid to carry out the obligations as set out in this VBMP.

This VBMP covers the Transgrid Supply Networks for which Transgrid has an exemption from the requirement to be licensed under section 16 of the *Electricity Industry Act 2000 (Vic)*. The relevant Transgrid Supply Network and related government exemptions and declarations are:

- Ministerial order S376 dated 1 December 2015: Transmission Line X1/X9 and Transmission Line 060, and Dederang and Wodonga Capacitor banks are exempt from the need for a Victorian operating licence as published in the Victorian Government Gazette.
- Ministerial order S397 dated 11 December 2015: NSW Electricity Networks Operations Pty Limited (ACN 609 169 959) as trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390), as published in the Victorian Government Gazette, is a Declared Transmission System Operator (DTSO)n Victoria.
- Transgrid and Lumea are MECs licensed by ESC to operate and maintain Supply Networks in Victoria.

Details of the Supply Networks owned or leased by Transgrid and Lumea are provided in Table 3.

Table 3 Transgrid and Lumea Supply Network ownership

Legal Entity	Telephone number and Address	Supply Networks Owned or Leased	Transmission Licence	Supply Network Operator
NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390) (operating as Transgrid)	180 Thomas Street Haymarket NSW 2000 T: (02) 9284 3000 Postal address: PO Box A1000 Sydney South NSW 1235	Deer Park Terminal Station (DPTS)	ESC Transmission Licence, varied on 25 September 2024, and effective from 3 October 2024	NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390)
		Transmission Line X1/X9 from Ausnet Services Red Cliffs Terminal Station Gantry to Vic/NSW border (Including Transgrid structure numbers 59-63)	Exempt from Transmission Licence as per Victorian Government Gazette S 376 1 December 2015 Transgrid is a DTSO under Victorian Government Gazette S397 11 December 2015	
		Transmission Line 060 from Vic. Border to AusNet Services owned structure '401' (Transgrid denominated structure 323) (including Transgrid owned structure number 322).	In accordance with <i>the Act</i> , Transgrid is the MEC for these Supply Networks.	

Legal Entity	Telephone number and Address	Supply Networks Owned or Leased	Transmission Licence	Supply Network Operator
Lumea Pty Limited (ACN 626 136 865) as trustee for Lumea Trust ABN 94 121 353 950 (Lumea)	180 Thomas Street Haymarket NSW 2000 T: (02) 9284 3000 Postal address: PO Box A1000 Sydney South NSW 1235	Dederang No. 1 & 2 Capacitor Banks		Refer to Section 6.4.3
		Wodonga No. 1 Capacitor Bank		
		Kiamal Terminal Station (KMTS) Berrybank Supply Network: - Berrybank Terminal Station (BBTS). - Berrybank Wind Farm Terminal Station (BBW) - Berrybank 220kV Transmission Line (BB1/BB2)	ESC Transmission Licence effective 25 March 2025 In accordance with <i>the Act</i> , Lumea is the MEC for these Supply Networks.	Operated for Lumea by NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390) under the Services Agreements
		Plumpton Renewable Terminal Station (PTS) (including 500kV underground connection to Sydenham Terminal Station)	ESC Transmission Licence, effective 5 March 2025. In accordance with <i>the Act</i> , Lumea is the MEC for these Supply Networks.	

The NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390) (Transgrid) have entered into the 'COMA - Project Service Agreement' (Construction Management, Operations and Maintenance Services Agreement)(Services Agreement) to provide the operation and maintenance services to Lumea Pty Ltd (ACN 626 136 865) as trustee for Lumea Trust (ABN 94 121 353 950) (Lumea) and Transgrid. Under the Services Agreement, Transgrid provides construction, management, operations, and maintenance services to Lumea and its subsidiaries for the Lumea Supply Networks for which Transgrid is not the MEC (see Figure 2). Under the agreement Transgrid provides to Lumea for all Lumea Supply Networks in this VBMP the following:

- All construction management services delivered through Transgrid's Major Projects and Delivery Business Unit.
- Operations services through Transgrid's Network Operations group in the Delivery Business Unit.
- Maintenance Services through Transgrid's Maintenance Engineering group in the Delivery Business Unit.

The processes and procedures to provide services to Lumea under the Services Agreement is performed by Transgrid using Transgrid branded strategies, policies, and procedures.

The Supply Networks owned by Transgrid (blue dot) and Lumea (green dot) are presented in Figure 1. This figure shows:

- All Lumea Supply Networks are located entirely within a HBRA.
- Transgrid's Supply Networks are located within a HBRA with the exception of two spans of Transmission Line X9 that are located in an LBRA. Transgrid treats these two spans as if they are in a HBRA and commit to managing these assets in accordance with the policies and procedures for assets located in a HBRA.

Figure 1 Transgrid and Lumea's Supply Networks, HBRA locality in Victoria (HBRA is outside of red shaded areas)



For the purposes of Section 113A(2)(b) of *the Act*, Table 4 presents the prescribed particulars required to be provided related to Sections 7(1)(a) – (e) of the ESBMR.

Table 4 Prescribed Particulars

Regulation Reference	Prescribed particular – contact details	Transgrid and Lumea Information
8(a)	the name, address, and telephone number of the major electricity company	NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390)(Transgrid) 180 Thomas Street Haymarket NSW 2000 T: (02) 9284 3000 (business hours only) Postal address: PO Box A1000 Sydney South NSW 1235
		Lumea Pty Ltd (ACN 626 136 865) as trustee for Lumea Trust (ABN 94 121 353 950) (operating as Lumea) 180 Thomas Street Haymarket NSW 2000 T: (02) 9284 3000 (business hours only) Postal address: PO Box A1000 Sydney South NSW 1235

Regulation Reference	Prescribed particular – contact details	Transgrid and Lumea Information
8(b)	the telephone number of the major electricity company that members of the public can call in an emergency that requires action by the major electricity company to mitigate the danger of bushfire	Emergency Contact Number for emergencies at both Transgrid and Lumea's Supply Networks for general public use (open 24 hr): 1800 027 253 (02) 9620 0555

6.2. Policy statement (Regulation reference 8(c))

Transgrid and Lumea are committed to minimising bushfire risks as far as practicable (AFAP) across each of Transgrid and Lumea's Supply Networks in accordance with *the Act* and *ESBMR*, while meeting the safety expectations of customers and the broader community. This commitment is maintained through the following management systems:

- The **ESMS** articulates Transgrid and Lumea's commitment to managing electricity safety in accordance with *the Act* by:
 - Performing a formal safety assessment to identifying and apply all practicable controls to minimise electricity risks AFAP.
 - Identifying the systems in place to ensure the implementation and monitoring of all the risk mitigation controls identified in the formal safety assessment, including risk mitigation controls implemented through this VBMP.
- This VBMP that articulates how Transgrid and Lumea mitigate bushfire risk arising from Transgrid and Lumea's Supply Networks in accordance with the *ESBMR*.
- The Asset Management System (AMS) that is Transgrid and Lumea's certified 'ISO 55001 Asset Management System' applied to Transgrid and Lumea's Supply Networks for ensuring the systematic implementation of the requirements of this VBMP.
- The Health and Safety Management System (HSMS) that is Transgrid and Lumea's certified 'ISO 45001 Occupational health and safety management systems — Requirements with guidance for use' for ensuring the safety of Transgrid and Lumea's employees undertaking activities required in this VBMP.

This VBMP details the control measures that are used to minimise bushfire risks AFAP for all the Transgrid and Lumea Supply Networks.

6.3. Objectives of this VBMP (Regulation reference 8(d))

The objectives of this VBMP are to:

- Achieve compliance with *the Act* and the *ESBMR*.
- Minimise bushfire risk AFAP through a structured approach to bushfire risk management throughout the Transgrid and Lumea Supply Network life cycle, from planning to decommissioning/disposal, through the effective implementation of preventative and mitigating controls.
- Establish the competency and qualification of Transgrid and Lumea staff, including contractors, to identify, assess and mitigate bushfire risk when completing an activity on the Transgrid and Lumea Supply Networks.
- Explain the processes for prioritising corrective maintenance work orders prior to, during, and after the bushfire season.

- Explain the governance and assurance framework for this VBMP, including how its activities are monitored and audited.

6.4. Description of the land to which this VBMP applies (Regulation reference 8(e))

The following sections describe the Transgrid and Lumea Supply Networks within the scope of this VBMP and the land on which they are located.

6.4.1. Deer Park Terminal Station (DPTS) Information

6.4.1.1. Background

Transgrid owns DPTS and holds the ESC Transmission Licence for this Transgrid Supply Network with an effective date of 3 October 2024 (amended by ESC due to the Electricity System Code (Vic) being withdrawn). Transgrid is the MEC for DPTS.

DPTS is Critical Electricity Infrastructure under the *Electricity Industry Act 2000 (Vic)*. DPTS consists of two 225 MVA 220/66 kV transformers connected into one of three existing Keilor Terminal Station to Geelong Terminal Station 220 kV Transmission Lines.

DPTS supplies more than 100,000 Powercor customers in the areas of Sunshine, Truganina, Tarneit, Laverton North, Caroline Springs, and Melton.

A summary of DPTS information is:

- Location: Ravenhall VIC 3023
- Electricity supply to the Terminal Station is from the AusNet Services Geelong – Deer Park – Keilor 220 kV Transmission Lines.
- Provides up to 3849A at 67.5kV (Reliability Level N) or 1924.5A at 57.5 kV (Reliability Level N-1) across 13 feeder outlets to the Powercor distribution network.
- Energisation Date: September 2017.
- In-Service Date: May 2018.

6.4.1.2. Description of the Land

DPTS is located on HBRA land (LBRA land is shaded red and not indicated in the area shown). Its operation interconnects with AusNet Services and Powercor.

Bushfire risk mitigation at DPTS considers the site's surrounding locales including nearby facilities and landscape that are at risk of being affected by a fire initiated by DPTS during construction, operation (including faults, failures, and other Incidents that have the potential to start a bushfire) or maintenance activities (including hot and fire risk work). These at-risk areas and facilities include:

- Open paddock, which is a bushfire hazard, surrounding DPTS to the north, west, and south.
- Boral Deer Park operates to the south and west that can be affected by smoke from large transformer fires.
- The Dame Phyllis Frost Correction Centre is 500m to the southwest of DPTS. Both the Site Controller (Refer Section 6.10) and Emergency Services need to be aware that this facility is difficult to evacuate if it is affected by smoke from a transformer fire. As such, the Correction Centre must be informed of an emergency at the earliest opportunity using the contact number included in the site emergency response plan.

6.4.1.3. Environmental Conditions

The DPTS site is located on semi-developed open land including a mixture of farmland which can be subject to animal activity, industrial sites, and railway corridors.

To assist with risk management, Transgrid extracts climate data from Australian Government Bureau of Meteorology Climate Data Online website. The Deer Park Climatic Information is described in Table 5.

Table 5 DPTS BOM Climate Condition

Supply Network	Source	Climatic Information
Deer Park Terminal Station	Laverton RAAF Station number: 087031 Grid Ref: MGA (GDA2020) - E830424 - N803596 - Elevation: 20 m	The highest monthly mean temperature, recorded in the month of January with a maximum recorded temperature of 29.4 °C for the period 1941 to 2025. The lowest mean minimum temperature, recorded in the month of June was 11.9°C for the period 1941 to 2025. The mean annual rainfall, for the years 1941-2024 is 534mm while the highest annual rainfall recorded over this time is 809mm. The highest 3pm mean wind speed was 21.1 km/h for the period of 1941 to 2010.

These climatic conditions inform the Terminal Stations drainage design and oil containment system requirements. Transgrid's standard control for flood risk is to keep equipment above a 1:100-year flood level. The [Stormwater Management Plan, Transgrid Deer Park, CG150475, Cardno, 14 January 2016](#) confirms that the design conforms to Transgrid's standard requirements for flood risk control.

6.4.1.4. Equipment that presents a foreseeable bushfire risk

Table 6 lists DPTS equipment where a failure can cause a loss of control of electricity that may result in fire ignition and potential bushfire. The mitigation of bushfire risk from asset failure is undertaken by the strategies listed in Section 6.5 and inspection of DPTS in compliance with Section 6.8.

Table 6 DPTS – Equipment affecting bushfire risk

Equipment	System Voltage (kV)	Associated equipment	Threat from Equipment and associated equipment
Deer Park Transformers 225MVA No. 2 & 4	220/66/11	Oil-filled capacitive voltage transformers and oil-filled power transformer	Asset Failure
Deer Park No. 2 & 3 Breaker-and-a-half bay (rigid bus).	220	Oil-insulated switchgear SF6-insulated switchgear	Asset Failure
Deer Park Single rigid busbar Section No.2, 3, & 4 and feeder bays.	66	Oil-insulated switchgear SF6-insulated switchgear	Asset Failure

Vegetation growth surrounding the perimeter of this Terminal Station allows external fires, including radiant heat, to impact the assets. This bushfire risk is mitigated through a 20 m buffer zone creating a fuel managed area that will minimise the impact of direct flame contact and radiant heat on the Terminal Station.

6.4.1.5. Supply Network and Operational Responsibilities

Transgrid operates and maintains the DPTS on a 30-year agreement with VicGrid. The boundary at DPTS is described in Table 7.

Details of contractual obligations and operational responsibilities are provided in the [ESMS](#) Section 5.2.

Table 7 DPTS Connected parties.

Supply Network boundary and Interfacing Network	Interfacing equipment
AusNet Services (connection point to Victorian shared transmission network)	- Geelong – Deer Park 2 220kV Transmission Line where the 220kV droppers connect to the landing span at Transgrid's Deer Park 220kV Terminal station, and - Keilor - Deer Park 2 220kV Transmission Line where the 220kV droppers connect to the landing span at Transgrid's Deer Park 220kV Terminal station.
Powercor (connection point to distribution network)	- BMH No 1 66kV droppers connect to the landing span at DPTS. - CBK No 1 66kV droppers connect to the landing span at DPTS. - CBK No 2 66kV droppers connect to the landing span at DPTS. - TNA No 1 66kV droppers connect to the landing span at DPTS. - TNA No 2 66kV droppers connect to the landing span at DPTS. - TW No 2A 66kV droppers connect to the landing span at DPTS. - TW No 2B 66kV droppers connect to the landing span at DPTS. - MTC No1 66kV droppers connect to the landing span at DPTS. - MTC No2 66kV droppers connect to the landing span at DPTS. - SU No1 66kV droppers connect to the landing span at DPTS. - SU No2 66kV droppers connect to the landing span at DPTS. - TWD No 1 66kV droppers connect to the landing span at DPTS. - MLN No 1 66kV droppers connect to the landing span at DPTS

6.4.2. Kiamal Terminal Station (KMTS) Information

6.4.2.1. Background

Lumea owns KMTS and holds the Transmission Licence amended by ESC (due to the Electricity System Code (Vic) being withdrawn) with an effective date of 25 March 2025. Lumea is the MEC for KMTS.

Location:

- Ouyen, Victoria, 3490. The surrounding locales, listed by increasing distance from the KMTS, are:
- Calder Highway, a public road which is located 1.8km to the east of KMTS.
- The town Ouyen, which is approximately 5.3km south of KMTS.
- KMTS is located adjacent to Kiamal Solar Farm, which is expected to generate 256 MW on an 800-hectare site.

KMTS is critical electricity infrastructure under the *Electricity Industry Act 2000*.

- Electricity Supply from Kiamal Solar Farm (Owned and operated by KSF Project Trust) is directed to the AusNet Services Red Cliffs – Horsham 220kV Transmission Line.
- KMTS – Transmission Licence with Lumea amended by ESC effective 3 October 2024
- Energisation Date: 13 December 2019
- In-Service Date: 17 January 2020.
- Connection Assets include:
 - 220kV air insulated switchgear and busbar.
 - Two 220/33kV 180MVA transformers.
 - Two 33/0.436kV 315kVA auxiliary transformers.
 - 33kV switchboards with 12 collector bays and four transformer bays.

- 33kV Switch room Building to house all 33kV switchboards.
- Auxiliary Services Building (ASB) to house control, protection, metering, and auxiliary supply systems.

6.4.2.2. Description of the Land

KMTS is located on a single land parcel of six hectares, of which 0.53 hectares are dedicated to this Terminal Station. The land parcel is a subdivision of the land bought by KSF Project Trust of 319.1 hectares. This land is strategically selected to cut into the existing 220 kV Transmission Lines owned by AusNet Services. The subject site was formerly used for grazing stock and a 5.5m wide access road from Old Kia Road to KMTS is available.

In operating KMTS, Lumea interfaces with other MECs through interconnection points with AusNet Services and KSF Project Trust. Figure 2 shows the operational interfaces between Lumea and the connected parties.

KMTS is in a HBRA based on the spatial data provided by Country Fire Authority.

6.4.2.3. Environmental Conditions

KMTS is located on a flat plane within an active wheat-growing district to the south, and the solar farm extending for 2km to the north.

The site's location is classified as a HBRA based on Country Fire Authority fire ratings. The bushfire risk is managed through a gravelled switchyard that provides clearance to the switchyard's fence.

To assist with risk management, Lumea extracts climate data from Australian Government Bureau of Meteorology Climate Data Online website. The KMTS climatic information is described in Table 8.

Table 8 KMTS BOM Climate Condition

Supply Network	Source	Climatic Information
KMTS	Ouyen (Post Office) Grid Ref: MGA (GDA2020)(54) station number: 076047 E619915 N6118366 Elevation: 65 m	The highest mean maximum temperature, recorded in the month of January with a maximum recorded temperature of 32.5 °C for the period 1937 to 2025. The lowest mean minimum temperature, recorded in the month of July was 4.3°C for the period 1937 to 2025. The mean annual rainfall, for the years 1911-2024 is 331mm while the highest annual rainfall recorded over this time is 682mm. The highest 3pm mean wind speed was 15.8 km/h for the period of 1957 to 2010.

Flood risk at the site is reduced AFAP by designing the drainage and stormwater systems to meet the Lumea standard of keeping equipment above a 1:100-year flood level.

6.4.2.4. Equipment that presents a foreseeable bushfire risk

Table 9 lists KMTS equipment where a failure can cause a loss of control of electricity that may result in fire ignition and potential bushfire. The mitigation of bushfire risk from asset failure is undertaken by the strategies listed in Section 6.5 and inspection of this Terminal Station described in Section 6.8.

Table 9 KMTS – Equipment affecting bushfire risk

Equipment	System Voltage (kV)	Associated Equipment	Threat from Equipment and associated equipment
Power Transformers 180MVA No. 1 and No. 2	220/33/0.436	Oil-filled capacitive voltage transformers, oil-filled power transformers, and oil-filled auxiliary transformers	Asset Failure
MRTS and RCTS Line Breaker-and-a-half bays (rigid bus).	220	Oil-insulated switchgear SF6-insulated switchgear	Asset Failure

Vegetation growth surrounding the perimeter of this Terminal Station allows external fires, including radiant heat to impact the assets. This risk is mitigated through a 20 m buffer zone creating a fuel managed area that will minimise the impact of direct flame contact and radiant heat on the Terminal Station. The zone also aids external site access by emergency services.

6.4.2.5. Supply Network and Operational Responsibilities

The operational boundaries at KMTS are provided in Figure 2. The interfaces with other MECs at KMTS are described in Table 10.

Details of contractual obligations and operational responsibilities are provided in the **ESMS** Section 5.2.

Table 10 KMTS Connected parties.

Owner of Interfacing Network	Interfacing equipment
AusNet Services	• Murra Warra – Kiamal 220 kV Transmission Line where the 220 kV droppers connect to the landing span at Lumea's Kiamal 220 kV Terminal station. • Red Cliffs - Kiamal 220 kV Transmission Line where the 220 kV droppers connect to the landing span at Lumea's Kiamal 220 kV Terminal station.
KSF Project Trust (a fully owned subsidiary of Total Eren S.A)	• 33kV underground cable terminations for Collector Group 1 to 12 from Kiamal Solar Farm. • 190MVA Synchronous Condenser.

Energy metering is provided on the two 220kV transformer connections and the 220kV synchronous condenser. Figure 2 KMTS: Operational Boundary Points between Lumea, AusNet Services (220 kV Transmission Lines) and KSF Project Trust (33 kV) Load Types, As Built 28 Sep 21

6.4.2.6. Background

Lumea owns the Berrybank Supply Network and holds the Transmission Licence with an effective date of 25 March 2025 (amended by ESC due to the Electricity System Code (Vic) being withdrawn). Lumea is the MEC for the Berrybank Supply Network.

The Berrybank Supply Network is located approximately 14km east of Lismore and 16km west of Cressy in southwestern Victoria. The combined capacity of the Berrybank 1 and 2 wind farms is 290MW.

The Berrybank Supply Network is considered Critical Electricity Infrastructure under the *Electricity Industry Act 2000 (Vic)*.

The Berrybank Supply Network is made up of the following network elements:

- Berrybank Terminal Station (BBTS).
- Berrybank Wind Farm Terminal Station (BBW).
- BBTS to BBW 220kV Transmission Line that connects BBW and BBTS. (Transmission Line BB1/BB2)

Key energisation and commissioning dates are:

- Energisation Date: 17 October 2020 (BB1), February 2023 (BB2).
- In-Service Date: December 2020.

Diagrams of the operational boundaries for the Berrybank Supply Network are outlined in Section 6.4.2.10.

Berrybank Terminal Station (BBTS)

BBTS is connected to the existing Ausnet Services' 220kV Transmission Network that runs between Terang and Ballarat Terminal Stations.

220kV Transmission Line BB1/BB2

The 220kV Transmission Line BB1/BB2 connects BBTS to BBW, connecting Berrybank Wind Farm to the Victorian Transmission Network. The structures used are double circuit single steel pole in accordance with Lumea's design standards.

Berrybank Wind Farm Terminal Station (BBW)

The Transmission Line BB1/BB2 terminates at a gantry located within the BBW switchyard that then connects to two power transformers. BBW is connected to the Berrybank 1 and 2 Wind Farms (owned by Global Power Generation) via 33kV underground cables.

6.4.2.7. Description of the Land

BBTS is located at Mount Bute, approximately 1.5km off Lismore-Scarsdale Road or approximately 1.4km off Willowvale Rd, Mount Bute, Victoria 3324. BBW is located at 578 Padgetts Lane, Berrybank 3323.

Transmission Line BB1/BB2 (7.716 km in length on a 50m easement) runs southeast from BBTS to BBW, following the alignment of Padgetts Lane within the road corridor. They cross Willowvale Road, Lismore Road, Wallinduc Road, and Padgetts Lane. The alignment has been carefully considered during the design phase to eliminate or, where not possible, minimise bushfire risk AFAP.

The topography of BBTS is generally flat with gently undulating countryside. Land use along the alignment is predominantly private property used primarily for agriculture including cropping, sheep, and cattle grazing that can be affected by bushfires initiated from this BBTS.

A 5m wide access track is provided to BBTS from Willowvale Road, Mount Bute.

In its operation of BBW, Lumea interfaces with AusNet Services, and the wind farm generator Global Power Generation.

BBTS, BBW, and Transmission Line BB1/BB2 are on land classified as a HBRA, based on Country Fire Authority spatial data (LBRA land is shaded red and not indicated in the area shown).

6.4.2.8. Environmental Conditions

The Berrybank Supply Network is on land surrounded by wheat and other farm crops with Transmission Line BB1/BB2 subject to the movement of harvesting equipment.

The bushfire risk is managed through this VBMP and the **ELCMP**.

To assist with risk management, Lumea extracts climate data from Australian Government Bureau of Meteorology Climate Data Online website which is outlined in Table 11. Drainage design at BBTS and BBW meets the Lumea standard of keeping equipment above the 1:100-year flood level.

Table 11 BBTS BOM Climate Condition

Supply Network	Source	Climatic Information
Berrybank Supply Network	Lismore (Post Office) Grid Ref: MGA (GDA2020)(54) Station number: 089018 - E705911 - N5796691 - Elevation: 178 m	The highest mean maximum temperature, recorded in the month of January with a maximum recorded temperature of 26.6 °C for the period 1940 to 1994. The lowest mean minimum temperature, recorded in the month of July was 4.6°C for the period 1940 to 1994. The mean annual rainfall, for the years 1919-2024 is 621mm. The highest 3pm mean wind speed was 18.0 km/h for the period of 1957 to 1983.

6.4.2.9. Equipment that presents a foreseeable bushfire risk

Table 12 lists Berrybank equipment where a failure can cause a loss of control of electricity that may result in fire ignition and potential bushfire. The mitigation of bushfire risk from asset failure is undertaken by the strategies listed in Section 6.5 and inspection of the Berrybank Supply Network in compliance with Section 6.8.

Table 12 Berrybank Equipment affecting bushfire risk

Equipment	System Voltage (kV)	Associated equipment	Threat from Equipment and associated equipment
BBTS Ballarat and Terang Breaker-and-a-half bays	220	Oil-insulated switchgear SF6-insulated switchgear	Asset Failure
BBTS BBW Breaker-and-a-half bays	220	Oil-insulated switchgear SF6-insulated switchgear	Asset Failure
BBTS Power Voltage Transformer	220/0.415	SF6-insulated power magnetic voltage transformer	Asset Failure
BBW Line and Power Transformer Bays	220/33	Oil-insulated switchgear SF6-insulated switchgear	Asset Failure
BBW Power Transformer 120MVA No. 1, 2 & 3	220/33	Oil-filled power transformer	Asset Failure
2 x Diesel Generators			Asset Failure
Protection Schemes	Transmission Line, Busbar, and Transformer Protection Schemes		Asset Failure
27 x Double circuit single pole steel structures	Guy, earthing, footing, cross-arms		Structure failure Earthing / Induced Voltage
Conductor:	Vibration dampers, insulator, conductor fitting, and accessories. Total span length: 7.716km		Conductor drop Vegetation encroachment

Equipment	System Voltage (kV)	Associated equipment	Threat from Equipment and associated equipment
Sulphur AAAC 61/3.75mm Aluminium Alloy 1120 overhead conductor (220kV)			
OPGW Type B 48 G.652 Fibre (twin)	Vibration dampers, insulator, conductor fitting and accessories		Asset Failure

Vegetation growth surrounding the perimeter of BBTS and BBW allows external fires, including radiant heat, to impact the assets. This bushfire risk is mitigated through a 20 m buffer zone creating a fuel managed area that will minimise the impact of direct flame contact and radiant heat on BBTS and BBW.

6.4.2.10. Supply Network and Operational Responsibilities

Lumea also owns Transmission Line BB1/BB2, which connects BBW and BBTS. Table 13 provides details of the interfacing equipment.

Details of contractual obligations and operational responsibilities are provided in the **ESMS** Section 5.2.

Table 13 BBTS and BBW Connected parties.

Owner of Interfacing Network	Interfacing equipment
BBTS	
AusNet Services	- Terang – Berrybank 220 kV Transmission Line where the 220 kV droppers connect to the landing span at Lumea's Berrybank Terminal Station (BBTS). - Ballarat - Berrybank 220 kV Transmission Line where the 220 kV droppers connect to the landing span at Lumea's Berrybank Terminal Station (BBTS).
BBW	
Global Power Generation	33kV underground cable terminations to Berrybank Wind Farm.

6.4.3. Dederang and Wodonga Capacitor Banks

6.4.3.1. Background

Transgrid has a Network Agreement with VicGrid for the provision of reactive support in the form of 2 x 330kV 225MVar Capacitor Banks located at AusNet Services Dederang Terminal Station and 1 x 330kV 150MVar Capacitor Bank located at AusNet Services Wodonga Terminal Station.

The Dederang and Wodonga Capacitor Banks are exempt from the requirement for a transmission operating licence in Victoria, and Transgrid is the MEC. Transgrid maintains the Dederang and Wodonga Capacitor Banks through a 25-year Network Agreement with VicGrid that starts from 2002 (commissioned in 2004) and ends in 2027.

- Energisation Date: Unknown.
- In-Service Date: 1 December 2002. (Date lease commences)

Transgrid and Lumea are awaiting VicGrid's decision to either decommission the Dederang and Wodonga Capacitor Banks or extend the lease.

6.4.3.2. Description of the land

Dederang Terminal Station is located at 1402 Yackandandah-Dederang Road, Dederang Vic 3691 accessible via the Dederang Road or Dederang Extension Road.

Wodonga Terminal Station is located at Lot 2 Baranduda Dr, Baranduda, Vic 3691 accessible via Baranduda Drive Baranduda.

6.4.3.3. Environmental Conditions

The Dederang and Wodonga Capacitor Banks are located within AusNet Services Dederang and Wodonga Terminal Stations, respectively, both of which are in cleared rural farming areas and areas classified as a HBRA based on Country Fire Authority fire ratings.

Transgrid is responsible for managing the bushfire risks associated with the Dederang and Wodonga Capacitor Banks. Bushfire risk management of the surrounding Dederang and Wodonga Terminal Stations is the responsibility of AusNet Services. The location of the capacitors is within the Ausnet Services managed switchyard and this provides clearance to external vegetation minimising risk in the event of a capacitor fire.

The climate data from Australian Government Bureau of Meteorology Climate Data Online website is presented in Table 14.

Table 14 Dederang and Wodonga Capacitor Banks BOM Climate Condition (Nearest station)

Supply Network	Source	Climatic Information
Dederang and Wodonga Capacitor Banks	Wodonga station number: 082056 Grid Ref: MGA (GDA2020)(54) - E 1032136 - N 5986531 - Elevation: 156 m	The highest monthly mean temperature, recorded in the month of January was 35.5 °C for the period 1940 to 1994. The lowest monthly mean minimum temperature, recorded in the month of July was 11.1°C for the period 1940 to 1994. The highest 3pm mean wind speed was 11.3 km/h for the period of 1921 to 2010.

6.4.3.4. Equipment that presents a foreseeable bushfire risk

Table 15 lists Dederang and Wodonga Capacitor Bank as assets where a failure can cause a loss of control of electricity that may result in fire ignition and potential bushfire. The mitigation of bushfire risk from asset failure is undertaken by the strategies listed in Section 6.5 and inspection of the Dederang and Wodonga Capacitors in compliance with Section 6.8.

Table 15 Dederang and Wodonga Capacitor Bank equipment affecting bushfire risk

Equipment	System Voltage (kV)	Associated Equipment	Threat from Equipment and associated equipment
330kV Capacitor Bank Switch bays	330	Oil-insulated switchgear SF6-insulated switchgear	Asset Failure

6.4.3.5. Supply Network and Operational Responsibilities

The operation of Dederang and Wodonga Capacitor Banks is managed through a Network Agreement between VicGrid and Transgrid for the provision of the Network Services listed in Table 16 and is currently valid through a Deed of Agreement for the periods of service listed in Table 16.

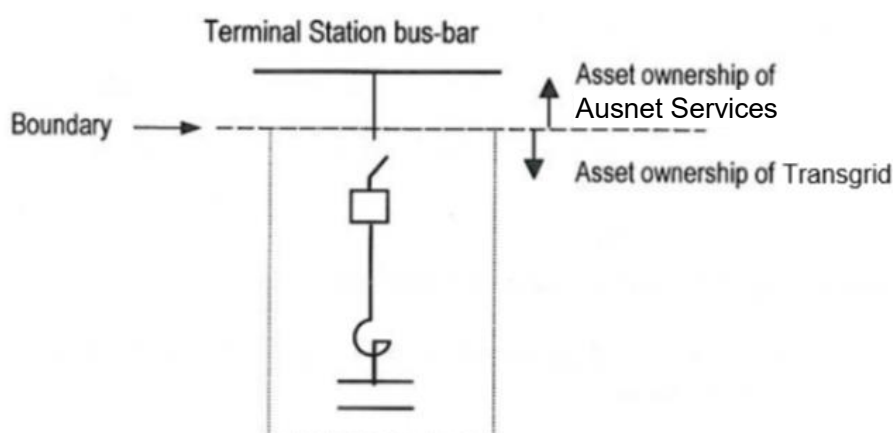
Table 16 Description of Network Services

Network Service No.	Description of Network Services	Date of Practical Completion	Period of Service
1	1 x 225 MVar 330kV switched shunt capacitor bank connected to AusNet Services Dederang Terminal Station No. 1 Bus	1 December 2002	25 Years

Network Service No.	Description of Network Services	Date of Practical Completion	Period of Service
2	1 x 225 MVar 330kV switched shunt capacitor bank connected to AusNet Services Dederang Terminal Station No. 2 Bus	1 December 2002	25 Years
3	1 x 150 MVar 330kV switched shunt capacitor bank connected to AusNet Services Wodonga Terminal Station No. 2 Bus	1 December 2002	25 Years

The ownership boundary at each of the Dederang and Wodonga Capacitor Banks is the fixed point of connection from the isolator to the respective busbar at Dederang and Wodonga Terminal Stations as shown in Figure 3. AusNet Services own the busbar and the tee off busbar.

Figure 3 Ownership Boundaries for Wodonga and Dederang Capacitors



Under the Network Agreement Transgrid acknowledges that:

- AusNet Services perform the switching (connecting and disconnecting) of plant associated with the Dederang and Wodonga Capacitor Banks from the Transmission System and associated performance monitoring. The Network Agreement includes the development of operating procedures by Ausnet Services in consultation with Transgrid and AEMO.
- Transgrid performs the maintenance planning, including applying to the Victorian Network Switching Centre for outages; field operating including switching, isolating, earthing for maintenance purposes only; after hours response, and local operating procedures specific to the Dederang and Wodonga Capacitor Banks.
- Transgrid has maintenance responsibilities for the Dederang and Wodonga Capacitors within the ownership boundary defined in Figure 3.

The Transgrid – AusNet Operating Protocol, signed and approved by both Transgrid and AusNet, contains the processes and procedures that Transgrid undertake for safely performing maintenance works on the Dederang and Wodonga Capacitor Banks. The Transgrid – AusNet Operating Protocol describes the procedures for accessing and working on the Dederang and Wodonga Capacitor Banks. As follows:

- Transgrid staff perform maintenance work under Transgrid SWHVA after Ausnet Services have issued a Statement of Condition or Apparatus – Plant (SCAP) that confirms Ausnet Services have isolated the equipment and applied all earths prior to Transgrid undertaking work within the isolated area under a Transgrid access authority.

- In the case that Ausnet Services have available staff at the Dederang or Wodonga Capacitor Banks, Transgrid will sign on to an AusNet Services access authority held by a person authorised under Ausnet Services safety rules.
- In the case that maintenance work is outsourced to a third-party by Transgrid and that third-party is authorised under AusNet Services safety rules and procedures, the working party will liaise with Ausnet Services directly to apply for and facilitate access to the equipment.

6.4.4. Transmission Line X1/X9 - Buronga Substation (NSW) to AusNet Services Red Cliffs Terminal Station

6.4.4.1. Background

Transgrid operates and manages Transmission Line X1/X9 Red Cliffs to Buronga Substation 220kV under a 99-year lease from the NSW Electricity Networks Holding Trust (ABN 30 784 528 036)(NSW Government) since 2024. Transmission Line X1/X9 from where the conductors cross the Victoria/NSW border to Ausnet Services' Red Cliffs Terminal Station are included in the scope of this VBMP.

Transmission Line X1/X9 is exempt from the requirement for a transmission operating licence in Victoria as detailed in Section 6.1 and Transgrid is the MEC.

Transmission Line X1/X9 is a 220kV dual circuit line which was energised on the following dates:

- Energisation Date: September 2024
- In-Service Date: September 2024.

6.4.4.2. Description of the Land

Transmission Line X1/X9 where it sits inside the Victorian border is approximately 1.5 km long (out of 23.9 km). Transmission Line X1/X9 crosses the Murray River, runs across Kings Billabong Park, and terminates at Ausnet Services' Red Cliffs Terminal Station with access near Lee St and Woomera Road, or approximately 0.5 km off Red Cliffs Terminal Station, Red Cliffs, Victoria, 3496.

Two spans on Transmission Line X9 are classified as being in a LBRA. Transgrid has opted to apply the higher standard to these spans, treating them the same as spans located within a HBRA.

6.4.4.3. Environmental Conditions

The conductor and structures are within Kings Billabong Park with some wet vegetation that supports several wildlife species and waterbirds. This park is subject to the *National Parks Act 1975*. Parks Victoria consents to the maintenance and operation by Transgrid in accordance with the conditions set out in Consent No. CA-1911.

Climate data from Australian Government Bureau of Meteorology Climate Data Online website is described in Table 17.

Table 17 Transmission Line X1/X9 BOM Climate Condition

Supply Network	Source	Climatic Information
Transmission Line X1/X9	Post Office station number: 076077 Grid Ref: MGA (GDA2020)(54) - E 610586 - N 6217236 - Elevation: 54 m	The highest monthly mean temperature, recorded in the month of February was 39.0 °C for the period 1940 to 1994. The lowest monthly mean temperature, recorded in the month of July was 12.2°C for the period 1940 to 1994. The highest 3pm mean wind speed was 11.3 km/h for the period of 1921 to 2010.

6.4.4.4. Equipment that presents a foreseeable bushfire risk

Table 18 lists Transmission Line X1/X9 equipment where a failure can cause a loss of control of electricity that may result in fire ignition and potential bushfire. The mitigation of bushfire risk from asset failure is undertaken by the strategies listed in Section 6.5 and inspection of Transmission Line X1/X9 in compliance with Section 6.8.

Table 18 Transmission Line X1/X9 Equipment presenting bushfire risk

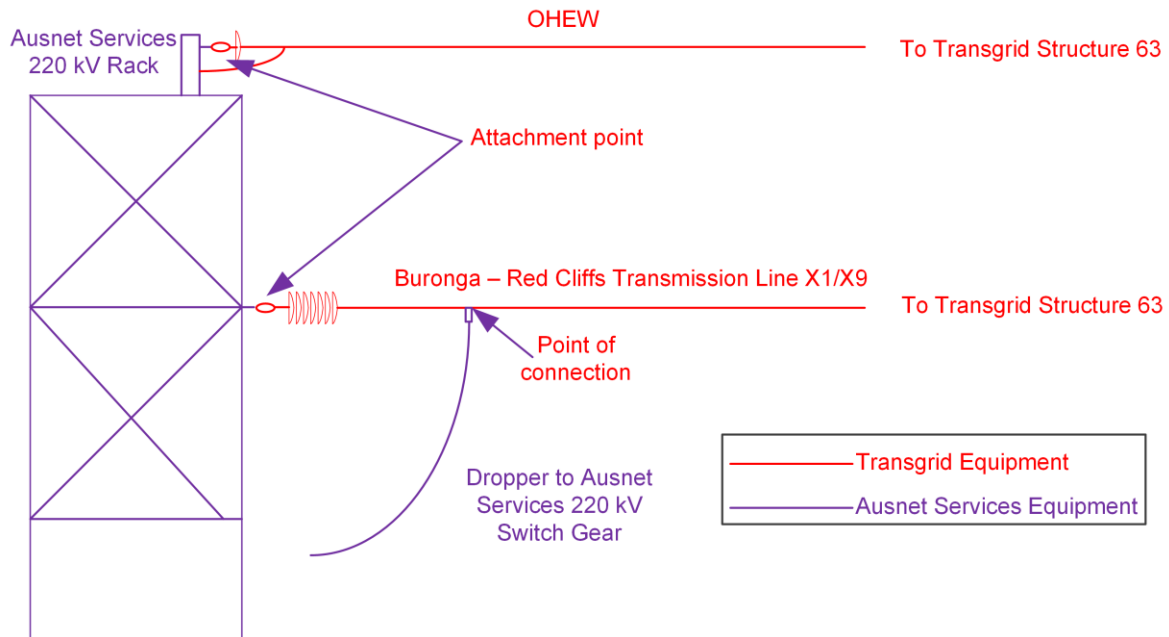
Equipment	System Voltage (kV)	Associated Equipment	Threat from Equipment and associated equipment
Dual circuit installation, twin steel pole, and steel monopoles - 5 steel poles structures consisting of 8 poles in total	220	Earthing, footing, steel poles, crossarms.	- Structure failure - Earthing / Induced Voltage
Conductor: Twin Pawpaw 54/3.75 Aluminium 19/2.25 Steel ACSR Overhead Conductor	220	Vibration damper, insulator, spacer, conductor fitting, and accessories. Total span length: 2.8km	- Conductor drop - Vegetation encroachment
Earthwire Grape ACSR (30/2.50, 7/2.50)		Vibration dampers, conductor fittings, and accessories	Earthing / Induced Voltage
Earthwire Optical Ground Wire (OPGW) 18 mm Type B		Vibration dampers, conductor fittings, and accessories	Earthing / Induced Voltage

6.4.4.5. Supply Network and Operational Responsibilities

The operational boundaries and ownership boundaries for Transmission Line X1/X9 are illustrated in Figure 4.

Details of contractual obligations and operational responsibilities are provided in the **ESMS** Section 5.2.

Figure 4 Transmission Line X1/X9 Operating Boundary



6.4.5. Transmission Line 060 - Jindera Substation to Ausnet Services Wodonga Terminal Station

6.4.5.1. Background

Transgrid operates and manages Transmission Line 060 under a 99-year lease from the NSW Electricity Networks Holding Trust (ABN 30 784 528 036)(NSW Government) since 2015. Transmission Line 060 is a 330 kV Transmission Line connecting the Transgrid Jindera 330/132kV Substation (in NSW) to AusNet Services' Wodonga Terminal Station, forming an electricity interconnector between Victoria and NSW.

Transmission Line 060 is exempt from the requirement for an operating licence in Victoria as detailed in Section 6.1 and Transgrid is the MEC.

- Energisation Date: Approximately 1980 coincident with the in-service date
- In-Service Date: 1980.
- In scope, Transmission Line 060 traverses 447 m from the NSW / Victorian border to Ausnet Services structure 401. Structure 401 is owned by Ausnet Services and denoted structure 323 in Transgrid's Transmission Network.

6.4.5.2. Description of the Land

Transmission Line 060 is located approximately 20 km west of Albury or 10 km northwest of West Wodonga, accessible by the Old Barnawartha road, Barnawartha North, VIC 3691.

Transmission Line 060 is located within HBRA, based on Country Fire Authority fire ratings and the spatial information in TSS (see Figure 1 in Section 6.1).

6.4.5.3. Environmental Conditions

Climate data presented in Table 19 is extracted from Australian Government Bureau of Meteorology Climate Data Online website.

Table 19 Transmission Line 060 BOM Climate Condition

Supply Network	Source	Climatic Information
Transmission Line 060	Wodonga station number: 082056 Grid Ref: MGA (GDA2020)(54) - E 1032136 - N 5986531 Elevation: 156 m	The highest monthly mean temperature recorded in the month of January was 35.5 °C for the period 1940 to 1994. The lowest monthly mean temperature, recorded in the month of July was 11.1°C for the period 1940 to 1994. The highest 3pm mean wind speed was 11.3 km/h for the period of 1921 to 2010.

The conductor and structures are on uneven green land with low shrubs with trees growing sparsely and managed away from the minimum clearance space defined in the **ELCMP**.

6.4.5.4. Equipment that presents a foreseeable bushfire risk

Table 20 lists Transmission Line 060 equipment where a failure can cause a loss of control of electricity in that may result in fire ignition and potential bushfire. The mitigation of bushfire risk from asset failure is undertaken by the strategies listed in Section 6.5 and inspection of Transmission Line 060 in compliance with Section 6.8.

Table 20 Transmission Line 060 Equipment affecting bushfire risk

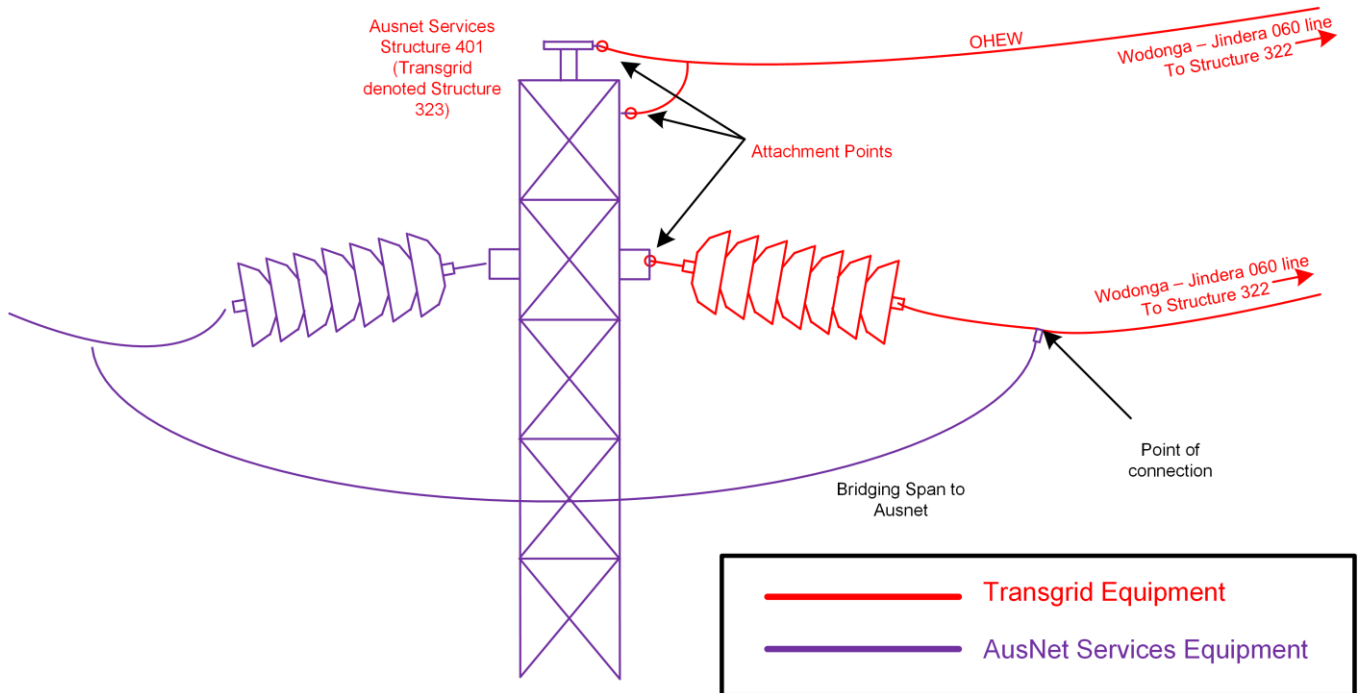
Equipment	System Voltage (kV)	Associated Equipment	Threat from Equipment and associated equipment
2 x Single circuit steel lattice structure	330	Earthing, footing, steel members	- Structure failure - Earthing / Induced Voltage
Twin Mango 54/7/3.00 ACSR Overhead Conductor	330	Vibration damper, insulator, spacer, conductor fitting, and accessories. Span length of 327m within Victoria.	- Conductor drops - Vegetation encroachment

6.4.5.5. Supply Network and Operational Responsibilities

In operating Transmission Line 060, Transgrid interfaces with another MEC, AusNet Services. The operational boundaries for Transmission Line 060 are illustrated in Figure 5.

Details of contractual obligations and operational responsibilities are provided in the **ESMS** Section 5.2.

Figure 5 Transmission Line 060 Operational Boundary



6.4.6. Plumpton Renewable Terminal Station (PRTS)

6.4.6.1. Background

Lumea owns the PRTS Supply Network and operates it under an ESC issued Transmission Licence with an effective date of 5 March 2025. The licence includes PRTS and the associated 500kV underground cable connection from PRTS to the existing AusNet Services Sydenham Terminal Station (SYTS). Lumea is the MEC for PRTS and the associated 500kV underground cable.

PRTS is supplied by the Melbourne Renewable Energy Hub (MREH) that is a Battery Energy Storage System with 600MW capacity owned and operated by Equis Energy.

PRTS is critical electricity infrastructure under the *Electricity Industry Act 2000 (Vic)*.

PRTS includes:

- Terminal Station (PRTS)
- 1.75 km 500kV underground cable from PRTS to SYTS and termination equipment at both ends of the cable.
- Energisation Date: 8 July 2025
- In-Service Date: August 2025

6.4.6.2. Description of the Land

PRTS is located on 99 Holden Rd, Plumpton, VIC 3335, in land classified as a HBRA, based on the spatial data provided by Country Fire Authority to Lumea's GIS system.

6.4.6.3. Environmental Conditions

The 2021 Biodiversity Assessment noted patches of land that are considered threatened ecological communities, including Natural Temperate Grassland of the Victorian Volcanic Plain, growing grass frog habitat, and a wedge-tailed Eagle nest on the far north of the access road perpendicular to Holden Road and southwest of the existing Sydenham Terminal Station.

Climate data from Australian Government Bureau of Meteorology Climate Data Online website is presented in Table 21.

Table 21 PRTS Climate Condition

Supply Network	Source	Climatic Information
PRTS	BOM (Melbourne Airport) Station Number: 086282 Grid Ref: MGA (GDA2020)(55H) - E 308801 - N 5829111 Elevation: 113 m	The highest monthly mean temperature recorded in the month of January was 30.4 °C for the period 1940 to 1994. The lowest monthly mean temperature, recorded in the month of July was 11.7°C for the period 1940 to 1994. The highest 3pm mean wind speed was 24.4 km/h for the period of 1970 to 2020.

6.4.6.4. Equipment that presents a foreseeable bushfire risk

Table 22 lists PRTS equipment where a failure can cause a loss of control of electricity that may result in fire ignition and potential bushfire. The mitigation of bushfire risk from asset failure is undertaken by the strategies listed in Section 6.5 and inspection of PRTS in compliance with Section 6.8.

Table 22 PRTS Equipment affecting bushfire risk

Equipment	System Voltage (kV)	Associated Equipment	Threat from Equipment and associated equipment
Transformers No.1, 2, and 3	500/33/33	Power transformer, oil-insulated switchgear	Asset Failure
Switch Bays 500kV	500	Oil-insulated switchgear SF6-insulated switchgear	Asset Failure
Auxiliary Transformers	33/0.436	Three Earthing / Auxiliary Transformers	Asset Failure
Earthing Transformers	33/0.436V	Three Earthing Transformers	Asset Failure
Switch Bays	33	Six 33kV Transformer Switch Bays (2 per each Power Transformer)	Asset Failure
	500	Three 500kV Transformer Switch Bays and a cable bay	Asset Failure
500 kV Cable Underground Cable to SYTS, XLPE Copper	500kV	500kV cable from the existing Sydenham Terminal Station (SYTS) to the Plumpton Terminal Station (PRTS) (approx. 1.75km), including cable termination at each end	Asset Failure
Cables connection 33kV bus, XLPE (Copper between main and Aux, otherwise Aluminium)	33kV	Cable, Busbar	Asset Failure
Protection Schemes		Cable, Busbar, and Transformer Protection Schemes	Asset Failure

Vegetation growth surrounding the perimeter of this Terminal Station allows external fires, including radiant heat, to impact the assets. This risk is mitigated through a 20 m buffer zone creating a fuel managed area that will minimise the impact of direct flame contact and radiant heat on the Terminal Station.

6.4.6.5. Supply Network and Operational Responsibilities

In operating PRTS, Lumea interfaces with:

- AusNet Services – at the output of the cable from PRTS to AusNet Services SYTS.
- Equis customer connection to the batteries at the input of the PRTS.

The interface points are outlined in Table 23. Details of contractual obligations and operational responsibilities are provided in the **ESMS** Section 5.2.

Table 23 PRTS Interface Points

Circuit	Interface point at PRTS
500kV Underground Cable to SYTS, XLPE Copper	AusNet Services interface is at the cable termination support structure palm connection to the 500kV busbar inside PRTS 500kV bay.
33kV cables connection 33kV bus, XLPE (Copper between main and Aux, otherwise Aluminium)	Equis interface is at the cable termination support structure palm connection to the 33kV busbar inside the PRTS 33kV bay.

6.5. Preventative strategies and programs to minimise the risk of starting fires (Regulation reference 8(f))

6.5.1. Bushfire Preparedness Process

The overall process for minimising bushfire risk AFAP throughout the Transgrid and Lumea Supply Network life cycle is presented in Table 24. The table describes the controls identified in the **ESMS** and how they apply to bushfire risk at all stages of the life cycle. Details of the processes used to inspect and maintain Transgrid and Lumea's Supply Networks is provided in Section 6.8.

Table 24 Bushfire preparedness through a Transgrid and Lumea Supply Network life cycle

Supply Network life cycle	Supply Network component	Control Name	Specification
Plan	All	Challenge or Technical Risk Assessment (TRA)	Challenge Assessment or TRA is a control measure identified in the ESMS to identify additional controls required to minimise bushfire risk AFAP when new Transgrid and Lumea Supply Networks are planned and developed. A TRA is completed at project commencement to identify hazards and risks associated with the project scope and actions required to minimise identified hazards and risks AFAP. The Safety In Design register and report incorporate the hazards and risks, and mitigations identified in the TRA. Designers are responsible for: - Identifying Transgrid and Lumea Supply Network hazards and risks, identifying hazards for non-standard designs, or identifying if a risk is not assessed in the standard Safety in Design register. Workshops are held with relevant stakeholders across the Transgrid and Lumea Supply Network life cycle as part of this identification. - Identifying the controls to be applied during Design, Construction, Operation, Maintenance and Dispose/Decommissioning. - Further information available in D2012/14473 Safety in Design.
Plan	All	Route Selection Guideline	Supply Network operational and safety risks, including bushfire risk, are assessed when deciding on the Transmission Line corridor/route during concept design of the Transmission Line. The Project Developer is responsible for following the route selection guideline with engagement from relevant internal stakeholders before the final Transmission Line route is approved by the Transgrid and Lumea Project Director. Further information available D2023/01196 Route Selection Guideline.
Design	Transmission Line	Design Requirements	Technical competency standards must be demonstrated by Transgrid and Lumea engineers and design partners prior to design and design verification work for Transgrid and Lumea's Supply Networks. Further information is available in D2023/00824 Technical Design Competency Procedure. The Transmission Line engineer must comply with:

Supply Network life cycle	Supply Network component	Control Name	Specification
			- Defining the Minimum Clearance Space (MCS) as defined in the <u>ELCMP</u>. Additional information on how to determine the MCS is provided in <u>ELCMP</u>. - The MCS is used to identify vegetated areas of concern. This is documented in design drawings by a suitability qualified person who completes a site investigation, that is forest ecologist, dendrologist, certified arborist (minimum Level 5). The results of the site investigation are recorded in a report that identifies the vegetation to be managed, and the treatment used to manage the risk of vegetation encroachment into the MCS now and in the future. The report forms the scope of vegetation management works to be completed during construction of the Transmission Line. Additional information is provided in the <u>D2023/00450 Transmission Line Design Manual – Major New Builds and D2017/12949 Transmission Line Design Manual</u>.
Design	Terminal Station	Design Requirements	Technical competency standards must be demonstrated by Transgrid and Lumea engineers and design partners prior to design and design verification work for Transgrid and Lumea's Supply Networks. Further information is available in <u>D2023/00824 Technical Design Competency Procedure</u>. Terminal station engineers must complete a specific hazard assessment considering the following to identify design controls to be implemented to mitigate bushfire risk AFAP: - Location within bushfire prone land. - Surrounding vegetation, landscape, and slope. - Consultation with relevant authorities (e.g. Fire Rescue Victoria). - External obligations (e.g. sensitive public area, such as schools, to be protected from explosive failure of oil-filled equipment). - Proposed buildings, structures, and equipment. - Buffer zone distance influenced by placement of Terminal Station within property of buffer zone distance. - Equipment insulation types. - Equipment layout and spacings. The following controls are applied to minimise the risk of a bushfire from explosive failure of oil-filled equipment: - A fire in any three-phase transformer or a single-phase transformer will not cause a fire in an adjacent transformer unit. - A fire in any transformer or reactor will not spread to any substation building or impede access for emergency services vehicles. Access from at least one alternative direction is to be provided. - A fire in any transformer or reactor will not cause the destruction of adjacent structures or electrical equipment or connections which would bring about the loss of other high voltage circuits not associated with that transformer or reactor. This is a hard requirement for adjacent circuits for common supply, i.e. affecting security of supply. If adjacent equipment is assessed

Supply Network life cycle	Supply Network component	Control Name	Specification
			to be of low criticality, this requirement may be assessed with Transgrid and Lumea approval of the variation. - Where transformers and reactors are totally enclosed so as to impair firefighting a risk assessment must be completed to identify any additional design controls. - No windows are to be in the wall of any building facing the transformer. - Consideration must be given to any further planned development of a Terminal Station when determining the location of oil-filled equipment to achieve the required fire separation distances. - The proximity of members of the public and bushfire fuel load to oil-filled equipment is to be minimised as far as practicable. At a minimum, the non-combustible surface clearance (G1) as outlined in AS 2067 is applied to a controlled area. - Fire clearances need to consider both the main tank and oil cooler areas. - Heat flux calculations must be undertaken to verify the design complies with the above requirements where the transformer oil volume exceeds 100,000 L, and/or separation distances in AS 2067 are not complied with. Additional information available in D2013/09399 Standard Design Manual – High Voltage Design.
Design	Digital Infrastructure	Asset Configuration Management	Technical competency standards must be demonstrated by Transgrid and Lumea engineers and design partners prior to design and design verification work for Transgrid and Lumea's Supply Networks. Further information is available in D2023/00824 Technical Design Competency Procedure. The protection system designed must satisfy the following: - Designs of feeder protection systems includes duplicate high-speed distance or duplicated line differential protection. - The feeder protection systems for Transmission Lines of 220kV and above must achieve specific functions, such as Distance / Directional Earth Fault Scheme, and Auto Reclose with Energisation Check; and satisfy feeder protection performance requirements, such as Distance Scheme response time must be 45msec for Transmission Lines 220kV and above. Additional information available in D2013/09400 Standard Design Manual – Protection and Metering.
Design	All	Safety in Design	The designer in communication with relevant stakeholders in Asset Management, Maintenance, Construction must identify and record bushfire related hazards and risks in the Safety in Design Risk Register, Hazard in Construction Register, and HAZOP Register (when undertaken as a requirement of a TRA or Safety in Design workshop where foreseeable operational risks are identified), at concept design of Transgrid and Lumea's Supply Network. Application of the hierarchy of controls to record controls that must be implemented in the final design of Transgrid and Lumea's Supply Networks, and the relevant

Supply Network life cycle	Supply Network component	Control Name	Specification
			processes in Construction, Operation, Maintenance/Renewal, Replacement, Disposal to minimise bushfire risk AFAP. Additional information available in D2012/14473 Safety in Design.
Design	All	Design Competency Framework	Technical competency standards must be demonstrated by Transgrid and Lumea engineers design partners prior to design and design verification work for Transgrid and Lumea's Supply Networks. Further information available in D2023/00824 Technical Design Competency Procedure.
Build	All	Asset Acceptance	The Project Director must provide the required asset data and information, outlined in the asset handover checklist, for the information systems required to operate and maintain Transgrid and Lumea's Supply Networks. The provision of the data and information in the system is verified by Asset Manager. The information and data will enable effective bushfire risk mitigation during operations and maintenance. Additional information available in the D2016/07756 Asset Acceptance Procedure.
Build	All	Fire Risk Management Plan	A Fire Risk Management Plan (FRMP) is a specific plan that covers the management of Hot Work and Fire Risk Work activities for the duration of a Project. It is prepared by the Principal Contractor and approved by Transgrid and Lumea. As a minimum, the Principal Contractor must: • Ensure all their staff and sub-contractors have suitable training in the use of fire safety equipment. • Ensure an adequate number of their staff are Authorised Officers for the purposes of Hot Work and Fire Risk Work. • Provide a description of activities that constitute a fire risk and the required day-to-day onsite management in the FRMP. • Define the Hazardous Area for the project and how this is defined/managed/controlled on a day-to-day basis during the project in the FRMP. • Define the approval process to be followed for Hot Work and/or Fire Risk Work activities in the FRMP. • Define the approval process to be followed on Total Fire Ban (TFB) days for Hot Work and/or Fire Risk Work activities in FRMP. The requirement for the Fire Risk Management Plan is provided in D2012/04610 Hot Work and Fire Risk Work.
Build / Maintain	All	Hot and Fire Risk Work Procedure	The party in-control of the hot work in the open (excludes work on premise or in Designated Hot Work Area) during fire danger period must obtain and comply with Hot Work Permit, or Schedule 14 Permit from a Fire Control Authority when requirements in the Hot Work Permit are not satisfied. The party in-control refers to Transgrid, Lumea, or Principal Contractor. The party in-control of hot work on a TFB day must obtain and comply with the Hot Work Permit and Section 40 Permit and: • That there are:

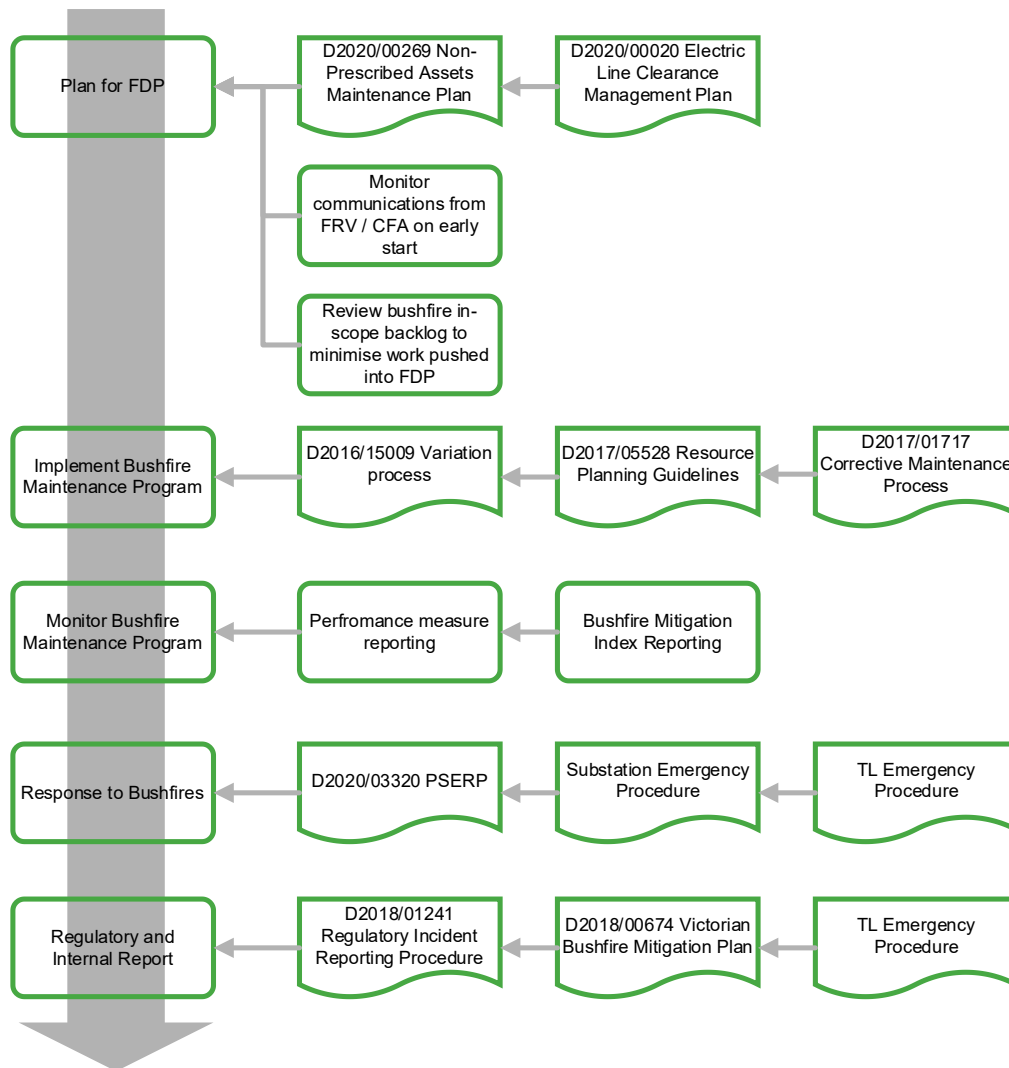
Supply Network life cycle	Supply Network component	Control Name	Specification
			- not less than two persons on site, together with not less than two knapsack spray pumps of at least 15 litres capacity each, fully charged with water, or - a length of hose adequate to reach the appliance connected to a reticulated water supply. • One such person must be available solely for fire watching and firefighting purposes; and • The Fire Control Authority's operations manager of the local area where fire is to be used in the open air is to be notified between 2 and 24 hours before the activity is to commence. • More detail on permit and exemption is covered in Section 6.10.2.2. • Further information available in <u>D2012/04610 Hot Work and Fire Risk Work</u>.
Operate / Maintain	All	Post Incident Review	Transgrid and Lumea must complete a report when an asset failure occurs on a Transgrid or Lumea Supply Network has started a fire or bushfire that identifies: • Root cause analysis completed by competent staff. • Failed controls investigated to identify improvements and is communicated to the control owner. • Actions to prevent this from occurring in the future. The completion of this report is tracked in the Network Performance Review monthly meeting. Detail on Incident review and reporting is covered in Section 6.11.2.
Operate / Maintain	All	Threat Monitoring	The Transgrid and Lumea Supply Network operators must obtain information from Fire Authority (via applications such as Indji) that a significant fire is: • (i) in the vicinity of a Transmission Line, or • (ii) likely to be in the vicinity of the Transmission Line within the next 30 mins to determine if a Supply Network will or has experienced a fault that requires the Network Operator to act. Network Operators perform actions in accordance with Section 6.10
Operate / Maintain	All	Site Emergency Response Plans (Mitigation Control)	Transgrid and Lumea identify the steps in immediate response to fire at a Terminal Station to limit its spread and impact on a Terminal Station and Transmission Line. The response includes: • Identifying source of ignition. • Area of ignition is free from all sources of electrical hazards. • Utilise local firefighting equipment if safe to do so. • Clearly define work area prior to providing access to Fire Authorities. • Inform Fire Control Authorities and other agencies of site sensitivities and additional hazards. Transgrid and Lumea identify the steps in immediate response to fire at a Transmission Line. Additional information on the emergency response at Terminal Stations, switching stations, and Transmission Lines is provided in Section 6.10.1.

Supply Network life cycle	Supply Network component	Control Name	Specification
Operate	Terminal Stations, Digital Infrastructure	Operator Competency Standard	Identifies competency requirements and evidence to perform specific operating roles within the Control Centre team to operate Transgrid and Lumea's Supply Networks remotely and safely. Additional information found in Section 6.9.3.
Operate	All	Emergency Incident response (Mitigation Control)	Outlines the roles and responsibilities of Transgrid and Lumea staff to communicate and coordinate response to fire Incidents. This is covered in Section 6.10.1.
Maintain	Vegetation	Post Work Review Program	Transgrid and Lumea staff have the qualifications listed in the <u>ELCMP</u> and Section 6.9.3 to complete and Audit vegetation works to the standard in the <u>ELCMP</u> .
Maintain	Terminal Stations	On-line Condition Monitoring	Outlines the action to be taken after the analysis of condition monitoring tests results obtained for high voltage equipment that uses oil or SF6 for insulation, and steel members and bolts in a Terminal Station (e.g. gantry). The actions include the need for further investigation to establish whether additional maintenance or replacement is needed to prevent equipment failure. Additional information is provided in <u>D2014/09504 Condition Monitoring Manual</u> .
Maintain	Vegetation	Bushfire Preparedness Program	Undertake the following bushfire preparedness inspections: - Inspect vegetation adjacent to and within the defined minimum clearance space from the Transmission Linee. - Inspect any tree which, should it fall, will encroach on the defined minimum clearance space. The scope, frequency and competency required for maintaining vegetation on and off easement likely to infringe on minimum clearance space, as explained in the <u>ELCMP</u> . The competency of inspectors is covered in Section 6.9.3.
Maintain	Network Property	Bushfire Preparedness Program	Undertake the following bushfire preparedness inspections: - Manage vegetation within Terminal Station and switching station buffer zone to minimise the bushfire fuel loading. - Inspect Terminal Station building gutters and remove any vegetation and other flammable material. The competency of inspectors is covered in Section 6.9.3.
Maintain	Substation	Bushfire Preparedness Program	Undertake the following bushfire preparedness inspections: - Identify and remove any rubbish that presents a fire hazard. - Control or remove any vegetation and weeds in the Terminal Station switchyard. - Carry out thermovision inspection of all current-carrying Terminal Station plant and conductors, high voltage connections and fittings, disconnectors, power transformer bushings, and oil-filled current transformers using a handheld thermovision device to identify hot joints and terminations. The competency of inspectors is covered in Section 6.9.3.

Supply Network life cycle	Supply Network component	Control Name	Specification
Maintain	Transmission Line	Bushfire Preparedness Program	Undertake the following bushfire preparedness inspections: • Visual inspection (ground level using binoculars or aerial using binoculars or imaging equipment) to identify Transmission Line Defects. • Thermographic inspection (ground level or helicopter) using a handheld thermovision device. • Drone or climbing inspections on all structures to collect detailed Transmission Line condition data on all assets. The competency of inspectors is covered in Section 6.9.3.
Maintain	All	Reporting Procedure (Mitigation Control)	Opportunities for improvement identified through internal Audits, routine monitoring of the delivery of the Bushfire Maintenance Program, and external compliance reporting are managed through actions in the ARMS, action registers, management committees, and continuous improvement registers. More detail in Incident review and reporting is covered in Section 6.11.

Section 6.8 explains the bushfire mitigation activities carried out as part of this VBMP during inspection and maintenance of Transgrid and Lumea's Supply Networks. Details of the standard inspection and reporting practices are provided in Transgrid and Lumea's Maintenance Plans listed in Section 16.

Figure 6 Bushfire mitigation during Transgrid and Lumea Supply Network maintenance



6.5.2. Initiatives

There are no active initiatives targeting improved inspection, condition monitoring, and maintenance of Transgrid and Lumea's Supply Networks. If an innovative technology is identified that could improve bushfire risk management, it must be evaluated to determine if implementation is Practicable.

6.6. Preventative strategies and program to meet the required capacity in relation to polyphase electric line from zone substation (Regulation reference 8(g))

This is not applicable to Transgrid and Lumea's Supply Networks.

6.7. The installation and maintenance of Automatic Circuit Recloser for SWER line (Regulation Reference 8(h))

This is not applicable to Transgrid and Lumea's Supply Networks as there are no SWER lines in the Supply Networks.

6.8. Plan for inspection of Transgrid and Lumea's Supply Networks (Regulation reference 8(i))

6.8.1. Process of Development of Maintenance Plan

Transgrid and Lumea's Asset Management Group is responsible for developing the maintenance strategy and associated maintenance plans as follows:

- The Renewal and Maintenance Strategies (RMS) documents are updated annually. This involves reviewing past performance against the objectives defined in the Network Asset Strategy (NAS) and identifying objectives for the upcoming year. The current NAS objectives include "managing the risks posed to our network with performance indicators to monitor performance" with the following performance indicators:
 - Bushfire Mitigation Index
 - Number of High Potential Incidents (structure failures, conductor drops, asset failures, vegetation encroachment)
 - Fire Starts (contained and uncontained)
 - Maintenance on time
- Emerging issues or opportunities are identified through ongoing Transgrid and Lumea management Reviews. Insights are drawn from reviewing performance and trends, working group discussions, observations, and industry developments.
- Maintenance plans are reviewed and updated annually to consider:
 - Any maintenance practice updates to the RMS and NAS.
 - New Transgrid and Lumea Supply Networks, or new asset types on existing Transgrid and Lumea Supply Networks commissioned in the prior year.
 - Changes to maintenance plans.
- Standard maintenance plan frequencies are developed using experience across the asset classes owned and operated by the Transgrid and Lumea, manufacturers' recommendations, failure mode analysis, and reliability centred maintenance (RCM) methodologies.
- The processes and procedures for managing vegetation around electric lines (Transmission Lines) are described in further detail in the **ELCMP**.

Inspection and maintenance tasks are scheduled with a frequency that detects Defects before they lead to a Transgrid or Lumea Supply Network failure. Section 6.8.2 identifies the type of inspections and their frequency for the Transgrid and Lumea Supply Networks in this VBMP.

Routine and non-routine maintenance work orders required on Transgrid and Lumea's Supply Networks under this VBMP are referred to as the Bushfire Maintenance Program in this VBMP. Bushfire related maintenance activities are implemented as work orders through the EAM and identified by a 'Bushfire In Scope' field and issued for execution by the Maintenance Engineering team in Transgrid's Delivery business unit. Bushfire work orders are work orders that have the 'Bushfire In Scope' field populated with 'INC – Include Reviewed'. The 'Bushfire In Scope' field must be confirmed by Maintenance Delivery Engineering team to ensure the work order will mitigate bushfire risk from the Defect. Refer to Appendix A 'Bushfire In Scope work orders' for a listing of the bushfire in-scope maintenance activities.

Prior to each FDP, routine maintenance work orders are completed to identify any Defects on Transgrid and Lumea's Supply Networks that, if left unaddressed, could develop into Network failures with the potential to start a fire.

6.8.2. Routine Inspection and Maintenance

Routine inspection and maintenance is completed at intervals based either on time (e.g. Every six months) or usage (e.g. Every 500 generator starts) of assets in the Transgrid and Lumea Supply Networks.

The routine inspection activities and required intervals that Transgrid and Lumea must comply with are listed in:

- Table 25 Transmission Line and structure inspection activities
- Table 26 Transmission Line Easement inspection activities.
- Table 27 Terminal Station inspection activities.
- Table 28 Network Property inspection activities.

Transgrid and Lumea treat all of the Transgrid and Lumea Supply Networks within the scope of this VBMP as if they are in HBRA, including the two spans of Transgrid's Transmission Line X9 that are in a LBRA. (Refer Section 6.1, Figure 1)

6.8.2.1. Transmission Line and Structure inspections

The competence requirements for a Lineworker are defined in Section 6.9.3.1.

Table 25 Transmission Line and structure inspection activities

Inspection description	Resource / Competency	Frequency
This inspection can be performed by either of the two methods provided below that provide an equivalent level of control. The Asset Manager can authorise the use of either of the below inspection methods based on operational constraints. (a) Inspection undertaken from ground level of Transmission Lines and structures prior to the commencement of the FDP of the Transgrid and Lumea Supply Networks. Inspection of the Transmission Lines is completed using visual inspection assisted with binoculars, as required, to identify Transmission Line Defects that will result in failure before or during the FDP. or (b) Aerial inspection from helicopter using binoculars and imaging equipment of the Transmission Line and structure condition prior to the commencement of the FDP to identify Defects that will result in failure before or during the FDP.	Lineworker in accordance with Section 6.9.3.	Completed annually and prior to commencement of the FDP.

6.8.2.2. Transmission Line Easement inspections

Table 26 Transmission Line Easement inspection activities

Inspection description	Resource / Competency	Frequency
This inspection can be performed by either of the two methods provided below that provide an equivalent level of control. The Asset Manager can authorise the use of either of the below inspections based on operational constraints. (a) Inspection undertaken from ground level of the Transgrid and Lumea's Transmission Line easement vegetation utilising measurement tools and binoculars, as required, to: - Assess the vegetation clearance to the Transmission Line and compare it to the Minimum Clearance Space defined in the <u>ELCMP</u>, and take the appropriate action as defined in the <u>ELCMP</u>. - Identify and assess trees that could fall into the Minimum Clearance Space, and take the appropriate action as defined in the <u>ELCMP</u>. - Create work orders to rectify any Defects identified from the above inspections. or (b) Aerial inspection from fixed-wing aircraft using laser imaging, detection and ranging (LiDAR) of the Transgrid and Lumea Transmission line easement vegetation to: - Assess the vegetation clearance to the Transmission Line and compare it to the Minimum Clearance Space defined in the <u>ELCMP</u>, and take the appropriate action as defined in the <u>ELCMP</u>. - Identify and assess trees that could fall into the Minimum Clearance Space, and take the appropriate action as defined in the <u>ELCMP</u>. - Create work orders to rectify any Defects identified from the above inspections.	Easement Clearance Worker with support from Suitably Qualified Arborist for assessment of trees to be cut or removed. OR Suitably Qualified Arborist. Competencies of these roles is provided in Section 6.9.3 and the <u>ELCMP</u>	Completed annually and prior to commencement of the FDP.

6.8.2.3. Terminal Station/Switching Station inspections

Table 27 Terminal Station inspection activities

Inspection description	Resource / Competency	Frequency
Inspection undertaken within Terminal Stations from ground level to visually inspect equipment in the switchyard to assess condition of equipment including capacitors, circuit breakers, transformers, and power cables above ground.	Substation Asset Inspector (Terminal and Zone Substations) in accordance with Section 6.9.3.	Completed at intervals not exceeding six months. At least one inspection must occur prior to the commencement of the FDP.
Inspection undertaken within and around Terminal Stations from ground level, in order to visually: - Identify and remove any rubbish that presents a fire hazard. - Identify to control or remove any vegetation and weeds in the switchyard. Inspection of all current-carrying equipment, conductors, high voltage connections and fittings, disconnectors, power transformer bushings, and oil-filled current transformers using a handheld thermovision device to identify hot joints and terminations.		Completed at intervals of no more than 12 months, to be scheduled between 1 June and 30 June, prior to commencement of the FDP.

Inspection description	Resource / Competency	Frequency
Substation Diesel Generators - Substation bushfire inspection scope is completed and issues/Defects arising from the inspection are raised, scheduled, and completed prior to commencement of the FDP.		Completed annually, prior to commencement of the FDP but no earlier than three months prior to the start of FDP.

6.8.2.4. Network Property inspections

Table 28 Network Property inspection activities

Inspection description	Resource / Competency	Frequency
Inspection undertaken within and around Terminal Stations at ground level to visually inspect fire protection systems in accordance with the requirements of AS 1851 - Routine service of fire protection systems and equipment.	Substation Asset Inspector (Terminal and Zone Substations) in accordance with Section 6.9.3.	As defined in AS 1851
Inspection undertaken within and around Terminal Stations at ground level to visually identify vegetation within the buffer zone that requires management to minimise the bushfire fuel loading in the zone through cutting, mowing, or slashing of vegetation.		Completed annually, prior to commencement of the FDP but no earlier than three months prior to the start of FDP.
Inspection undertaken within and around Terminal Stations at ground level to visually inspect building gutters and removal of any vegetation and other flammable material.		Completed annually, prior to commencement of the FDP but no earlier than three months prior to the start of FDP.

6.8.3. Non-Routine Maintenance

Non-Routine Maintenance applies to any inspection and maintenance activities that are not performed at scheduled frequencies within the EAM. Non-Routine maintenance undertaken to correct bushfire related Defects identified during routine inspection and maintenance, or identified by any other means, is referred to as corrective maintenance.

Transgrid and Lumea's process for non-routine corrective maintenance is completed in accordance with Figure 7 and Table 29.

Figure 7 Corrective Maintenance Process Summary

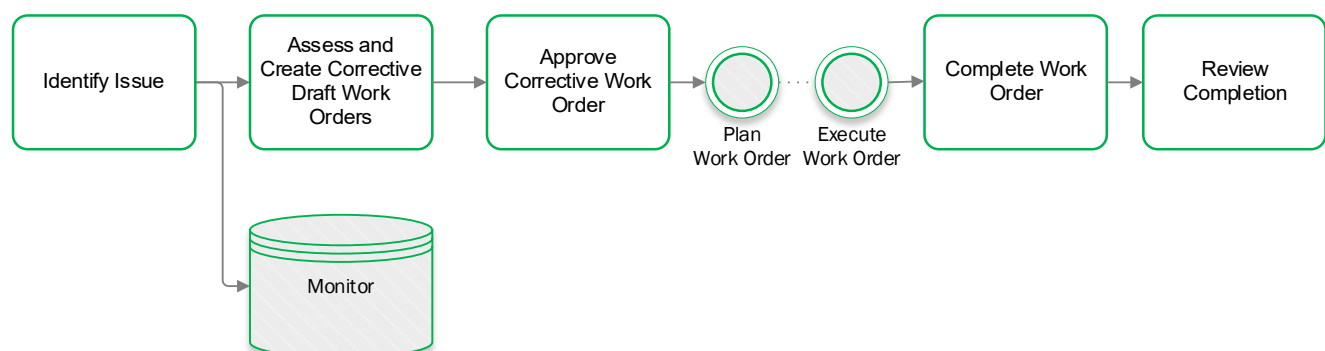


Table 29 Corrective maintenance process summary

Sub-Process	Description	Accountabilities
Identify Issue	Issue is identified in a field inspection and captured in the EAM. Issues rated (P1, P2) are escalated to the AMC.	Field Staff, Program Leads, AMC

Sub-Process	Description	Accountabilities
Assess and Create Corrective Actions	Issue is risk assessed and once verified as a defect, the actions to correct it, including scope and timing, are prioritised and a corrective work order is created. Any additional rectification work required must include a risk assessment to assign a priority level to any subsequent work orders.	AMC (P1,2,3) Program Leads (other priorities)
Approve Corrective Work	Asset Manager approves low priority ($\geq$ P4) corrective Work Orders, including referring work back for further information.	Asset Manager
Complete Work	Field staff (internal or external maintenance staff with active and current qualifications in the WSAT) complete the Work Order, including details of the status of the Defect and if there are still Defects remaining.	Field Staff
Review Completion	AMC reviews completed high priority work (P1,2) and manually closes Defects (Corrective maintenance Work Orders) recorded in the EAM.	AMC

This process is detailed in the in D2017/01717 Corrective Maintenance Process.

6.8.4. Execution of Maintenance

6.8.4.1. General

Transgrid's Delivery business unit (supporting Lumea by providing maintenance services under the Services Agreement) is responsible for delivering the maintenance program.

Transgrid and Lumea consider four aspects of maintenance:

- Preventative (Routine) Maintenance, which includes inspection activities and routine maintenance.
- Corrective (Non-Routine) Maintenance, which includes activities to maintain or repair a Transgrid or Lumea Supply Network based on an assets condition.
- Internal Work Requests, which are not covered by the preventative maintenance programs or do not meet the definition of corrective maintenance.
- Customer requests, which are not covered by the preventative maintenance programs or do not meet the definition of corrective maintenance.

Work delivered by internal resources follows the following process:

- Routine maintenance work orders must have planning dates aligned with the requirements presented in Section 6.8.2 and the Asset Maintenance Plans.
- Corrective Non-Routine work orders are created for Defects identified during routine maintenance. Data in the Bushfire In Scope field is reviewed, verified, and corrected (if needed).
- Internal Work Request (IWR) work orders and customer work orders are created as required.
- Program leads review work orders in the EAM to ensure sufficient information is available for the work order to be passed to planning.
- Maintenance Planners review the work orders and develop a work plan with scope, safety documentation, outages, and staffing requirements.

- A maintenance scheduler reviews the work plan and allocates the required resources to complete the work. Once scheduling is complete, taking into consideration the start of the FDP, the work is passed to field delivery for completion in the field.
- The execution of the work is monitored via a series of online reports.

This process is detailed in the in D2017/01717 Corrective Maintenance Process.

Where work is performed by a contractor, the contractor's planner or scheduler allocates work to their own crews for delivery. Contractors with access to the EAM system input their results directly. Contractors without system access will provide Transgrid and Lumea with the results for uploading into EAM or storage in the appropriate corporate system.

6.8.4.2. Open and Overdue Work Orders

Daily online reports track the completion of work orders for all asset classes, providing oversight of whether the Bushfire Maintenance Program is on time. The daily reports are used in conjunction with the guidelines specified in the Asset Maintenance Plan for managing overdue bushfire maintenance work orders.

A description of the Priority's timeframe is listed in Table 30 and comply with Asset Maintenance Plan.

Table 30 Priority Codes

Priority Level	Response Priority	Application of Priority to work order
Level P1	Requires immediate attention and within 24 hours	Requires assessment or rectification within 24 hours. Work to rectify the defect or mitigate the risks and hazards arising from the defect must be completed within 24 hours. Any additional rectification work required must be risk assessed and reprioritised in accordance with Section 6.8.3.
Level P2	Requires urgent attention within the next month	Defect to be rectified within one month of work order creation.
Level P3	Requires urgent attention within three months	Defect to be rectified within 3 months of work order creation.
Level P3A	Requires attention within six months	Defect to be rectified within 6 months of work order creation.
Level P4	Requires attention within twelve months	Defect to be rectified within 12 months of work order creation.
Level P5	Requires attention at the next planned maintenance outage for this equipment or just when convenient	Defect is one that requires repair but can wait until the next outage on the equipment if it requires an outage, or it can wait until a crew is available to do the work in conjunction with other work in the area to allow for efficient bundling of work.
Level P6	Does not require any remedial action at this stage	Defect is not rectified. The Defect condition is assessed to determine whether the Priority Code is adequate during inspections. Additional information and photographs are provided at the next inspection/routine maintenance activity to support the change or no change Priority Code of the Defect.
Level P7	Remedial action to be bundled with future project.	Defect is identified for rectification under a project. Project Manager and Asset Manager approve and the Defect must be rectified under project before applying the P7 code. The Defect recorded in the project scope that follows the document governance in the application Project Document Governance System (PDGS). Asset Manager endorses Defect is rectified or removed once project is completed and before work orders is closed by the Project Manager. The Defect is monitored at next inspection activity (like Priority Code 6 Defect) until project work has begun.

6.8.4.3. Variation Process

A variation request must be submitted by maintenance staff and approved by the Asset Manager when a change is required to a bushfire maintenance work order that will delay the work beyond its finish no later than date. Variations are triggered by:

- Scope being added to work package.
- Specific external factors, such as weather events, affecting delivery.
- An early start to the FDP.
- Planner Priority and planning deadline date being assessed by maintenance staff as inappropriate for the work order.

The variation request must include the information identified in Table 31 Variation request information requirements.

Table 31 Variation request information requirements

Detail	Discussion
Reason For Variation	Detail the reason and include commentary such as when issues were identified and who has been consulted (e.g. Outage Planning Meeting April 2016)
Condition Issues/Risk	Detail any known issues associated with the equipment affected by the work (existing Defects or condition)
Mitigating Actions	Detail any mitigating actions require to address risks above. An agreed position with the AMC is required where the work order is a P1, P2 or P3 priority or otherwise originated from the AMC. Extract of the correspondence and endorsement is to be included in the <i>Variation Request</i> .
Work As Planned	Extract information work order from Ellipse detailing the work required. Spreadsheets may be attached for large numbers of work orders.
Proposed Variation	Provide details of the proposed completion of the work and the basis for the Variation in the table.
Approvals	Complete Proposed By details

The Asset Manager reviews the variance request for compliance with this VBMP and if approved by the Asset Manager the changes are implemented in the EAM and tracked in online maintenance performance reports. This process is detailed in the D2016/15009 Maintenance Program – Variation Process document.

6.9. Processes and procedures to ensure inspectors and other staff working on Transgrid and Lumea's Supply Networks are competent, and trained in the courses approved by Energy Safe Victoria (Regulation reference 8(j) and 8(k))

6.9.1. Responsibilities of staff in mitigating bushfire risk

Table 32 provides a list of the managerial and supervisory roles and business groups with responsibility for mitigating bushfire risk in Transgrid and Lumea's Supply Networks. Detailed Field Worker competencies are provided in Section 6.9.3.1.

Table 32 Roles and responsibilities of staff

Transgrid and Lumea Roles / Business Unit	Responsibilities
Asset Managers (Multiple Asset classes) / Network	Responsible for: • Determining the renewal and maintenance strategy and plans for Transgrid and Lumea's Supply Networks. They perform this

Transgrid and Lumea Roles / Business Unit	Responsibilities
	with the assistance of Asset Strategists and Engineers reporting to them with competency in Transgrid and Lumea's Supply Network systems. • Completing assurance Audits on the delivery of the Asset Maintenance Plan.
Maintenance Delivery Manager / Network	Responsible for: • Converting the Asset Maintenance Plan into recurring maintenance activities at defined frequencies for assets in Transgrid and Lumea's Supply Networks in the EAM. • Producing inspection scripts to enable the collection of condition data on assets in Transgrid and Lumea's Supply Networks. • Updating the code in the "Bushfire In Scope" field at the request of the Asset Manager.
Manager of Maintenance Engineering (Multiple asset classes) / Delivery	Responsible for: • Managing the delivery of Bushfire Maintenance Program work orders on-time and on-budget. • Prioritising Defect bushfire work orders appropriately. • Planning work to be done before and during the FDP and issue the plans to planners to schedule in the EAM. • Review and Audit the quality of maintenance work completed by internal staff and Contractors. • Authorise the required HSE approvals to complete work orders. • Supervise and ensure Contractors are authorised for work as per the contract requirements. Develop the relevant artefacts: • Transgrid and Lumea Supply Network specific Emergency Response Plan. • Maintenance work instructions.
General Manager of Health Safety and Wellbeing / Network	Responsible for: • Developing and auditing of systems and procedures that mitigate bushfire risk from activities performed by internal staff and Contractors. • Auditing compliance to relevant fire permits to complete hot work and fire risk work during FDP and on TFB days.
Director of Strategic Asset Management / Network	Responsible for: • Development and delivery of the Electricity Safety Management System in compliance with <i>AS 5577, the Act and Regulation</i>. • Coordinating internal and external Audit activities related to the ESMS, VBMP, and ELCMP. • Ensuring that actions that arise because of system Audits are recorded in the ARMS and are actioned. • Maintaining the currency of the following documents: - This VBMP - ESMS. - ELCMP.
Operations / Delivery	Responsible for ensuring the operational security and reliability of Transgrid and Lumea's Supply Networks in accordance with the <i>National Electricity Rules</i>. The group: • Determines operating policy and strategies. • Creates operating manuals for the Transgrid and Lumea Supply Network.

Transgrid and Lumea Roles / Business Unit	Responsibilities
	- Operates the system 24 hours a day. - Develops, issues and coordinates switching plans to open/close circuits in Transgrid and Lumea's Supply Networks. - Determines when to escalate Incidents and events that require the site emergency response plan to be activated. - Determines when to initiate requests for after fault patrols when faults are identified in Transgrid and Lumea's Supply Networks. - Monitors and act on events and Incidents in Transgrid and Lumea's Supply Networks during emergencies. Operations employees liaise with VicGrid, Distributors, Generators, and other TNSPs to ensure close co-ordination of operating activities. The group is also responsible for: - Outage planning and coordination. - VicGrid liaison. - Customer liaison. - Long-term project co-ordination. - Operating diagrams and outage administration.
Asset Monitoring Centre Manager / Delivery	Responsible for the short-term management of events and issues in Transgrid and Lumea's Supply Networks. This includes: - Creating Defect bushfire work orders that are to be completed within three months. - Instigating and reporting on Incidents and emergencies that arise on Transgrid and Lumea's Supply Networks. - Conducts pre-energisation activities for new Transgrid and Lumea Supply Networks and coordinates alarm response post-energisation. - Initiating and coordinating first response to Incidents and events on Transgrid and Lumea's Supply Networks.
Field Staff and Contractors / Delivery	
Field Delivery Manager / Delivery	Responsible for: - Ensuring internal maintenance resources are trained, qualified, competent, and authorised for the maintenance tasks. for the site for most routine and non-routine maintenance activities. - Collect quality Transgrid and Lumea Supply Network information. - Providing training to respond to emergencies.
Planning and Scheduling Manager / Delivery	Responsible for: - Scheduling bushfire work orders in the lead up to and during FDP, and in accordance with the plan issued by Maintenance Delivery Manager. - Requesting outages and access for works to be completed during outage. - Prioritising and scheduling bushfire work orders.
Field Workers	Responsible for: - Undertaking field inspections in accordance with work orders allocated. - Undertaking corrective maintenance in accordance with work orders allocated.
First Response Contractor	Responsible for providing first response services for unplanned Incidents and events at Transgrid and Lumea's Supply Networks,

Transgrid and Lumea Roles / Business Unit	Responsibilities
	and additional resources to Transgrid and Lumea when required to perform planned maintenance activities.
External Contractors	Perform works under the direct supervision of Transgrid and Lumea staff in accordance with all HSE procedures and Authority to Work requirements.

6.9.2. Training (Regulation reference 8(j)(i))

Transgrid and Lumea staff and external service providers that require access to Transgrid and Lumea's Supply Networks (and associated assets) to complete inspection activities, are identified in the WSAT system. Transgrid and Lumea staff and external service providers are subject to performance review and refresher training to maintain competency and performance at the required levels (detailed in the **ESMS**).

Transgrid and Lumea use the online WSAT system as follows:

- Provides a unified view of the status of authorisations of staff assigned to work.
- Provides a system to manage the authorisation of Transgrid and Lumea's staff and external organisations (such as ESI companies, direct customers, and contractor organisations) to complete works on assets.
- Allows for the attachment of evidence of attainment of required training and competencies outlined in Table 33.
- Integrates with the EAM system so that staff assigned to Work Orders have the required competencies and are authorised to perform the work.
- Enables all staff to actively upload evidence of completed training, qualifications, and competencies.
- Update the business rules in WSAT system to identify the registered training organisation and the current training, competency, and qualification requirements that are specific to roles relating to safe access to electrical apparatus.
- Enable onsite monitoring, reviewing, and verifying of the status of authorisations of staff by using WSAT mobile application.

Contractors must be authorised in WSAT by demonstrating the training requirements outlined in the **SWHVA** is satisfied.

Transgrid and Lumea maintain representation on the Blue Book committee to assess impacts of proposed changes or updates on training requirements that relate to compliance with the Blue Book. Additionally, Transgrid and Lumea perform an annual review of training requirements. Updates to Transgrid and Lumea's training requirements is managed in the WSAT system.

Contracts must contain specific clauses that will ensure contractors have the appropriate training and competencies for the roles relating to inspection activities on Transgrid and Lumea's Supply Networks and have authorisation granted by Transgrid and Lumea.

6.9.3. Competency (Regulation reference 8(j)(ii))

6.9.3.1. Field Worker Competencies

The WSAT system contains:

- Transgrid and Lumea's field worker required certifications and competencies to undertake tasks related to Transmission Line clearance and vegetation management (as detailed in Section 6.9.2).
- Staff personal details, their qualifications, and details of the competencies they hold to perform work. Contractors are responsible for maintaining the currency of their staff's personal details, competencies, and qualifications in WSAT, which Transgrid and Lumea can Audit at any time.
- Processes for managing training records related to authorisations of staff and contractors, for both initial work authorisation, and refresher training in order to maintain authorisation to perform work.
- Process to enable the monitoring of contractor's skills expiry dates. The WSAT sends notifications to contractors to ensure skills training is updated before performing work. Evidence of skills training must meet business rules in WSAT.
- Authorisation requirements for staff to work in Victoria on Terminal Stations and Transmission Lines, which includes satisfying the competencies outlined in Table 33.

The online WSAT system controls the safe access to electrical apparatus on Transgrid and Lumea's Supply Networks in compliance with *Code Of Practice On Electrical Safety For Work On Or Near High Voltage Electrical Apparatus* (Blue Book).

Table 33 shows Transgrid and Lumea's mandatory competencies relevant to bushfire risk mitigation that applies to the routine inspection and maintenance activities in Section 6.8.2 and for performing and following non-routine maintenance to correct defects.

Table 33 Competency Requirements

Role	Qualification
Lineworker	UET30521 Certificate III in ESI Power systems transmission overhead. (Covers inspection and maintenance)
	UET20621 Certificate II in ESI – Asset inspection and overhead (Only covers inspection)
	Prepare to work safely in the construction industry.
	Licence Requirement under <i>the Act</i>
	Lineworker Licence – Transmission
Substation Asset Inspector (Terminal and Zone Substations)	UEE30820 Certificate III in Electrotechnology Electrician
	Prepare to work safely in the construction industry.
	Work safely in the vicinity of live electrical apparatus.
Vegetation Roles	
Easement Clearance Worker (can be referred further in Appendix E in D2020/0020 Electric Line Clearance Management Plan)	UET20321 Certificate II in ESI - Powerline Vegetation Control
Suitably Qualified Arborist	AHC30824 Certificate III in Arboriculture, which includes the AHCARB408 Perform a ground-based tree Defect evaluation unit of competency and has at least three years of field experience in assessing trees.

The responsibilities of staff monitoring competency using WSAT is as follows:

- The Transgrid and Lumea works leader monitors the performance of field staff on each activity.

- For Contractors, staff performance is monitored both by a contract staff supervisor as well as the Transgrid and Lumea person responsible for the contracted works. Quality requirements including Audits, and non-conformance/corrective actions are covered in the contract, which also specifies contractor competency requirements.

6.9.3.2. Operations Competencies

The system operator competency standard specifies the requirements for performing respective functions in the Control Centre. The system operator competency program includes:

- A hierarchical shift structure implemented to enable staff development and mentoring with minimum requirements for competent operators on each shift. At least two people in each shift must have all six of these competencies:
 - Plan and Coordinate Scheduled Outages
 - Operate HV Equipment
 - Prepare Preparation and Restoration Instructions
 - Supervise Switching Operations
 - Management of a HV Interconnected Network (level 1 and 2)
 - Critical Incident Management (level 1 and 2)
- The following roles are included on the Control Centre roster:
 - Network Control Manager (NCM) - 24/7 coverage
 - Senior System Operator (SSO) - 24/7 coverage
 - System Operator (SO): dayshift only inclusive of weekends (no Public Holidays)
 - Assistant System Operator (ASO): weekday dayshift only (no weekends or Public Holidays)
 - Shift Cell (HVPRI preparation): 12-hour dayshift
 - Office Cell (HVPRI Preparation) – 9-day fortnight
 - Office Arrangements – 9-day fortnight
 - Leave Relief – flexible position allocated on the roster to cover any shift pattern within the type grouping while staff are on leave or allocated to special duties.
- The roster is prepared such that both Newcastle and Eastern Creek control rooms are staffed on all shifts.

Human Error is an identified cause of errors in Control Room operations. To develop Control Room staff, a mentoring process is used that includes:

- Assigning a trained operator as part of a formal training plan to develop the skills and capabilities of an operator.
- A formal assessment by the registered trainer who must sign off that the required competence level has been attained.

Ongoing competence is maintained by rostering people onto work where they can practice their competencies, with the Control Room supervisor overseeing that procedures are applied correctly.

6.9.3.3. Engineering, Design and Management Competencies

Transgrid and Lumea engineering, design and management staff work from offices in Sydney (180 Thomas St Haymarket, NSW) or Eastern Creek (200 Old Wallgrove Road Eastern Creek, NSW). Staff and contractors are located at their corporate office or work from home in any state of Australia.

Transgrid and Lumea staff providing a Professional Engineering Service, as defined by the *Professional Engineers Act* (Vic), are required to be registered in the appropriate category for the service being provided or supervised by an engineer registered in the appropriate category.

Capabilities that require specific engineering competencies to meet the required capabilities are prescribed in the framework shown in Figure 8. This framework requires:

- The details of the Engineering Services that must be verified by a technically competent person.
- Technical competency standards for staff involved in the design of Transgrid and Lumea's Supply Networks.
- The recording of competencies in a records system.
- Compliance with regulatory requirements for professional engineering registration under the *Professional Engineers Registration Act 2019* (Vic).

The requirement for technical authority is detailed in the D2023/01197 Technical Authority Framework.

Transgrid and Lumea make use of design competencies as summarised in Table 34 and detailed in D2023/00844 Technical Design Competency Procedure.

Figure 8 Technical Authority Framework

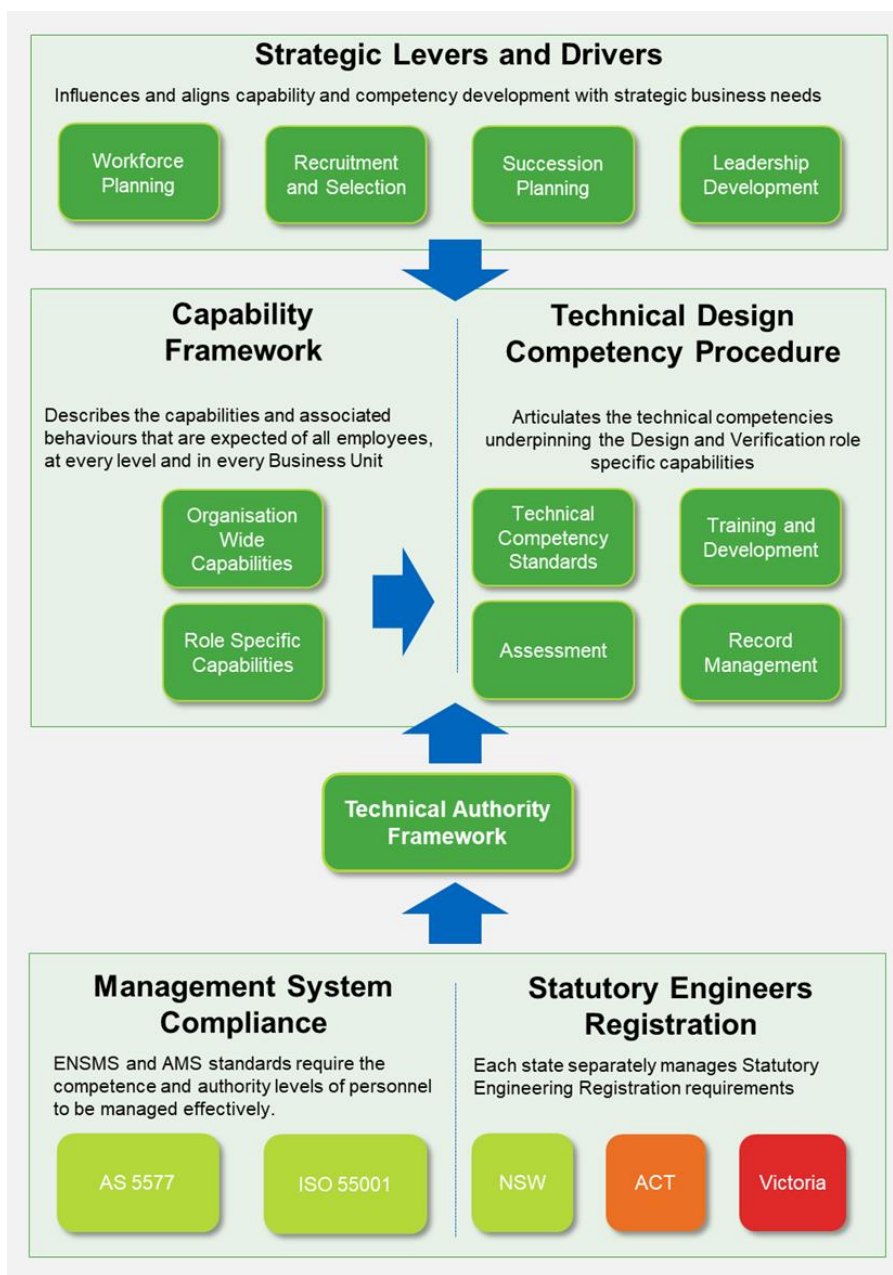


Table 34 Designer competency requirements

Competency Standard	Requirement
Designer Technical Competency Standard	Qualifications: Engineering discipline relevant to one of Transgrid and Lumea's asset classes Designer Competency Standards has one core and two elective competencies. The Designer Competency Standards core and electives are: Designer Technical Competency (core) - Activities include developing, checking, and reviewing engineering documents and drawings for the plan stage (options evaluation), design stage (concept scoping and detailed design), and post build stage WAE (Work As Executed). Designer Technical Support (elective) - Activities include ITP (Inspection Test Plan), FAT (Factory Acceptance Test), developing guidance and recommending actions to support delivery and management across the Transgrid and Lumea Supply Network life cycle.

Competency Standard	Requirement
	Designer Standards Updates (elective) Activities include consolidating lessons learnt, referencing external standards, and making enhancements to standard designs.
Verifier Technical Competency Standard	Qualifications: Engineering discipline relevant to one of Transgrid and Lumea's asset classes The Verifier Competency Standard has one core competency. The Verifier Competency Standard is: Verifier Technical Competency Activities include supporting strategic technical decisions, optimising designs, assuring technical integrity, approving final detailed designs for compliance, preparing, and providing documentation to support project delivery and closure, and managing reviews of design documents.

Managerial competency is maintained through Transgrid and Lumea's performance development process. This identifies learning needs and development from:

- Performance conversations that identify any gaps where performance needs to improve.
- Setting goals for the next Financial Year and identifying what is needed to achieve those objectives.
- Performing activities to gain or maintain competence or stay up to date on current trends or technologies.

Transgrid and Lumea apply an annual performance review and development process with all employees including management.

6.10. Operation and maintenance plans in the event of fire, during total or partial Total Fire Ban day, and during FDP (Regulation reference 8(I))

6.10.1. Operation and Maintenance Plans in the Event of Fire ((Regulation reference 8(I)(i))

6.10.1.1. External fires active in the vicinity of Transgrid and Lumea's Supply Networks

Transgrid and Lumea's AMC and Network Operations control room monitor all fires and heat signatures via the Bureau of Meteorology and Fire Control Authority information systems. If monitoring identifies fires within 1 km of Transgrid and Lumea's Supply Networks they are automatically highlighted for review and follow up by:

- Evaluating the need to disable auto-reclose (Refer Section 6.10.2).
- Removing any field staff from the area including deferring maintenance and removal of maintenance staff.
- Initiate post-fire patrols if the fire encroaches onto Transgrid and Lumea's Supply Network's to identify any damage to a Transgrid or Lumea Supply Network, identify Defects that have resulted from any damage, and created corrective maintenance actions in line with Section 6.8.3.

6.10.1.2. Terminal Stations (Substations)

If a fire Incident occurs that can encroach on a Transgrid or Lumea Supply Network Terminal Station, the following activities are implemented according to the Incident Level defined in Appendix B:

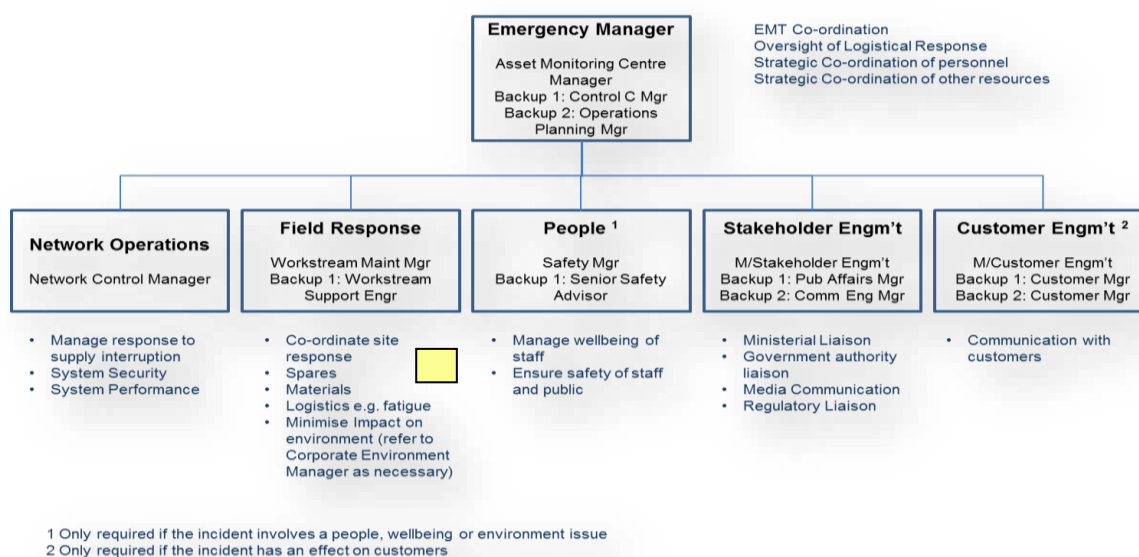
- For **level 1** Incidents, the Network Operations control room must manage the site response in accordance with the operating manual on response to alarms.

- For **level 2** Incidents, the Network Operations control room will liaise with the Asset Monitoring Centre On-Call Engineer to determine level of Incident, response requirements and who must notify staff and management that the response team has been activated. If warranted, escalation is to the AMC Manager or Control Centre Manager.

For Incidents level 2 and above, an Emergency Management Team (Figure 9) is activated.

- Overall Emergency Management is carried out by the Asset Monitoring Centre (AMC).
- Field Response activities are managed by a Delivery Manager.
- Site activities are managed by the Site Controller.

Figure 9 Level 2 Emergency Management Team Structure



Site Controller 

- For **level 3, 4, or 5** Incidents, the GM Network Operations, Network Operations control room, or the Asset Monitoring Centre Manager will activate the Site Emergency Response Team and, at a management level, will assist in coordinating with and support AEMO's direction.

For Level 3, 4, or 5 Incidents, the Site Emergency Response Team includes a Site Controller appointed by Transgrid or Transgrid on behalf of Lumea that:

- During the Emergency/Incident, will be the first authorised person on site and coordinates site response and resource requirements.
- Act as the main point of contact with both the Group Emergency Management Team (GEMT) and/or Corporate Emergency Management Team (CEMT), and with the Emergency Services or other 3rd parties at the scene.
- Act as liaison point with Emergency Services (who may take control of site) and provide interface with Transgrid and Lumea Network Operations control room (e.g. to de-energise or energise site).

6.10.1.3. Transmission Lines

If a fire Incident encroaches on a Transgrid or Lumea Supply Network Transmission Line, the Network Operations team is responsible for providing a coordinated response to the Transmission Line fire Incident that includes:

- Preparing a restoration plan for Transmission Line failure if it was to occur.
- Preparing a 'Dispatch Pack' prior to any access to the Transmission Line in an area that has an active fire. A dispatch pack includes every available piece of information related to the Incident at hand to ensure staff safety in bushfire affected areas.
- Requirement for staff to obey directions given by the onsite Fire Control Authority's control officer.
- Providing the locations of emergency structures and emergency containers (contain materials and parts to assemble and connect emergency structures into a Transmission Line), and processes to book them out of the warehouse.
- Providing response staff with contact details for:
 - Emergency Services.
 - Victorian Police Local Area Command.
 - Other Services, landholders, and Stakeholders.
 - VIC Local Government Area Map and Contacts.
 - Fire Control Authorities

The following procedures provide details on access to bushfire affected areas adjacent to Transmission Lines and emergency measures described above:

- D2003/3316 MMS-TLC-ERM-092 Transmission Lines Emergency Response Procedure – Work Instruction.
- D2017/05780 Transmission Line First Response and after Fault Patrols – work instruction MMS-TLC-088:

6.10.1.4. Easement

An after-fire patrol is performed by Maintenance Engineering staff to assess fire damaged trees (also refer Section 6.10.3) and determine the need for emergency tree cutting to prevent these from contacting the Transmission Line or falling into the Minimum Clearance Space. Emergency vegetation cutting is executed in compliance with required permits. Affected landowners are issued written notification that emergency vegetation cutting has occurred on their property. This is aligned with notification requirements in the ELCMP.

6.10.2. Operating and Maintenance Plans During Total or Partial Total Fire Ban (TFB) day ((Regulation reference 8(l)(ii))

6.10.2.1. Operating Plans during TFB

During total or partial fire bans, Transgrid and Lumea's Network Operations team completes the following tasks:

- A bushfire risk checklist is completed to establish whether a double circuit Transmission Line should be reclassified as a credible event, a situation where both circuits may simultaneously fail due to a fire Incident, in which case AEMO is required to be advised. This bushfire checklist requires:
 - Acknowledgement that the Transmission Line is being taken out of service due to a demand from a Fire Control Authority.
 - Confirmation that taking the Transmission Line out of service does not confirm it is de-energised.
 - Confirmation of the time the Transmission Line will be taken out of service.
 - Identification of the criteria that will allow re-energisation of the Transmission Line.
 - Determination if taking the line out of service could create a risk to the security of electricity supply security in Victoria and advise the Victorian Transmission Network operator (AEMO).
- Auto-Reclose on all Transmission Lines is enabled by default. This system will only be disabled if:
 - The bushfire danger rating is Catastrophic, and
 - A Defect work order exists that has been identified as Bushfire In-Scope, and
 - Repair work cannot be completed within 24 hours.
- Operating Protocols (Refer to Section 6.4) are followed for managing requests and demands for circuits to be taken out of service by Fire Control Authorities.

6.10.2.2. Maintenance Plans during TFB

During total or partial fire bans maintenance work at Transgrid and Lumea's Supply Networks is permitted but activities are restricted as follows:

- Any Hot Work during a TFB requires the issue of a Section 40 Permit from the Fire Control Authority, as a minimum:
 - The Section 40 Permit must be attached to the Hot Work Permit.
 - There are not less than two people on site, together with not less than two knapsack spray pumps of at least 15 litres capacity each, fully charged with water, or a length of hose adequate to reach the appliance connected to a reticulated water supply one such person shall be available solely for fire watching and firefighting purposes.
 - The Maintenance Engineering manager for the local area where fire is to be used in the open air is to be notified between 2 and 24 hours before the activity is to commence.
- Any Fire Risk Work during a TFB is to be avoided. If it is required to address a critical Defect identified whilst a TFB is in force (e.g. Cutting vegetation blown onto Transmission Lines), the following procedures must be followed:
 - During a declared TFB, the following Fire Risk Work activities require authorisation granted in writing from either GM Operations and Maintenance, GM Infrastructure Delivery (under delegation from the EGM, Delivery), or Project Directors within Major Projects (under delegation from the EGM, Major Projects) regardless of whether in a HBRA or not:
 - > Works involving steel tracked mobile plant,
 - > Mobile plant with steel attachments, or
 - > Slashing/Mulching

- A Fire Risk and Control Measures (FRACM) form must be completed for all other Fire Risk Work (i.e. operation of motor vehicles, chainsaws, mowing or brush-cutting) during a TFB. The duration of the FRACM must not exceed one day.
- The staff authorised by Transgrid and Lumea for assessing the Fire Risk Work must ensure that the fire safety equipment is in working order, deployed, and immediately accessible.

6.10.2.3. Emergency Tree Cutting on TFB days

Any emergency tree cutting during a TFB must comply with permit requirements as outlined in Section 6.10.2.2. Emergency cutting of the trees that have been assessed by a Suitably Qualified Arborist or Transgrid and Lumea authorised staff as having the potential to fall onto or otherwise come into contact with a Transmission Line will be cleared with a minimum of P2 priority. If the tree is identified as imminently in danger of falling it must be cleared at the earliest opportunity and within the P2 priority timeframe. This will not require written notification to affected landowners to be removed, but they will be sent a written notification of the completed emergency cutting of trees in accordance with the ELCMP.

6.10.3. Operation and Maintenance Plans During Fire Danger Period ((Regulation reference 8(l)(iii))

Fire Control Authorities declare the Fire Danger Period (**FDP**) for each municipality in accordance with Section 4 of the *Country Fire Authority Act 1958*. These dates vary due to changes in local conditions.

Transgrid and Lumea's Corporate Health Safety and Wellbeing team monitors and communicates the FDP to our staff and contractors via HSE Notices. The requirement to check the Fire Danger Rating and/or TFB status is the responsibility of staff and contractors before and during works. Transgrid and Lumea's HSW and environment team monitors the effectiveness of the control measures included in the D2012/04610 Hot Work and Fire Risk Work Procedure and provides additional communication when required.

Staff use the following sources to identify any warnings and Incidents regarding bushfire:

- <http://www.bom.gov.au/vic/forecasts/fire-danger-ratings.shtml>
- Fire Control Authority websites:
 - <https://www.cfa.vic.gov.au/warnings-restrictions/fire-danger-period/fire-restriction-dates>
 - <https://www.cfa.vic.gov.au/warnings-restrictions/total-fire-bans-fire-danger-ratings>
 - <http://www.cfa.vic.gov.au/warnings-restrictions/restrictions-during-the-fire-danger-period/>
 - <https://www.frv.vic.gov.au/>
- ABC local radio.
- Sky News and other emergency broadcasters.
- Victorian Bushfire Information Line (1800 240 667).
- 'Vic Emergency' application (<http://www.emergency.vic.gov.au/respond/>)

Transgrid and Lumea nominate the 1st of October as the start of the FDP. This sets a clear deadline to complete certain bushfire maintenance activities and initiate frequent reporting on the delivery of the Bushfire Maintenance Program, as outlined in the Asset Maintenance Plans. Transgrid and Lumea nominate 31 March as the end of the FDP to trigger internal bushfire risk management performance reporting.

An easement inspection is performed prior to FDP to reduce the risk of trees encroaching within the Minimum Clearance Space during the FDP. Emergency cutting of vegetation is required if trees or vegetation could fall within the Minimum Clearance Space (specified in the ELCMP), trees are encroaching, are likely to fall onto, or otherwise come into contact with a Transmission Line. If emergency cutting is undertaken, Landowners will be sent a written notification of the completed emergency cutting of vegetation in accordance with ELCMP.

6.11. Investigations, analysis, and methodology for the mitigation of the risk of fire ignition from Transgrid and Lumea's Supply Network (Regulation reference 8(m))

6.11.1. Overview

Transgrid and Lumea investigate, analyse, and process information to mitigate bushfire risk of ignition through a formal safety assessment process. The formal safety assessment process, which is shown in Figure 10 and involves:

- Identifying hazards that can arise from a Transgrid or Lumea Supply Network. For bushfire mitigation, these have been identified as electricity and hot works on a Transgrid or Lumea Supply Network.
- Identifying foreseeable threats that lead to loss of control of the hazards that can result in bushfires, using the following forums to help identify all foreseeable threats:
 - Reviewing previous Transgrid and Lumea Supply Network Incidents, including previous fires in Victoria or other jurisdictions, Transgrid and Lumea Supply Network failure Incidents, such as conductor drops, explosive failures and vegetation intrusions.
 - > Transgrid and Lumea have not initiated any fires from the operation of the Transgrid and Lumea Supply Networks in Victoria at the time of submitting this VBMP and rely on its NSW and ACT experience in this area.
 - Reviewing investigation outcomes from bushfire related Incidents on the Transgrid and Lumea Supply Networks and, where available, investigations undertaken by other NSPs and government organisations.
 - Engaging with stakeholders and subject matter experts with field and/or risk management experience.
 - Engaging in industry forums such as the International Wildfire Risk Management Consortium, CIGRE, and Electricity Networks Australia.
 - Reviewing industry journals.
- Identifying bushfire ignition risk mitigations (controls) to ensure these risks are minimised AFAP. Controls are identified for the full life cycle, including the design, construction, operation, maintenance, and decommissioning of Transgrid and Lumea's Supply Networks.
 - Identified risk controls related to bushfire risk are implemented through various processes and plans, including this one.
 - Details of the control identification process, including a summary of all mitigations are available in the ESMS and FSA.

Transgrid and Lumea strive to continually improve its electricity safety (including bushfire) and asset management systems through a series of processes and forums illustrated in Figure 11.

Figure 10 Formal Safety Assessment Process

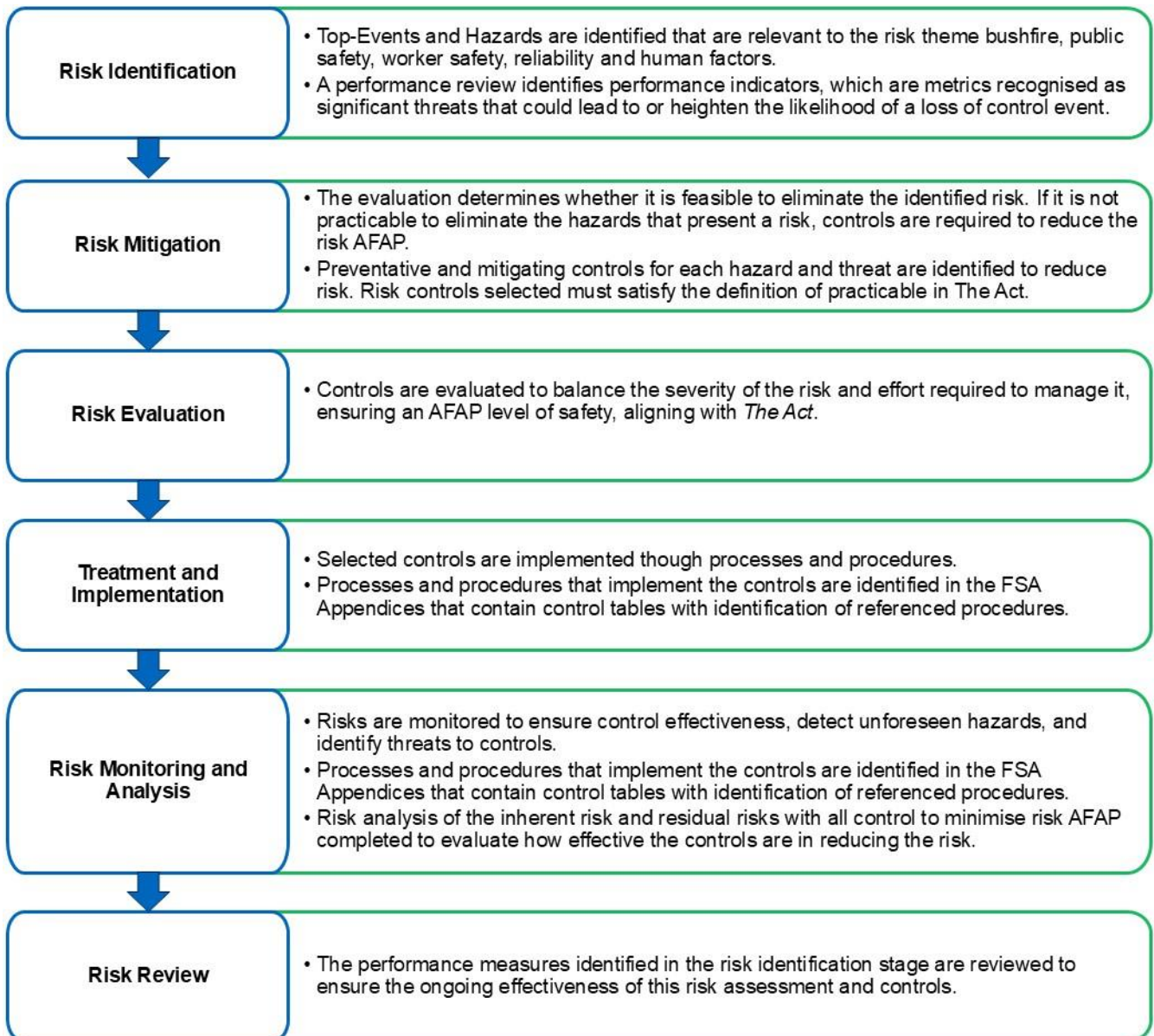
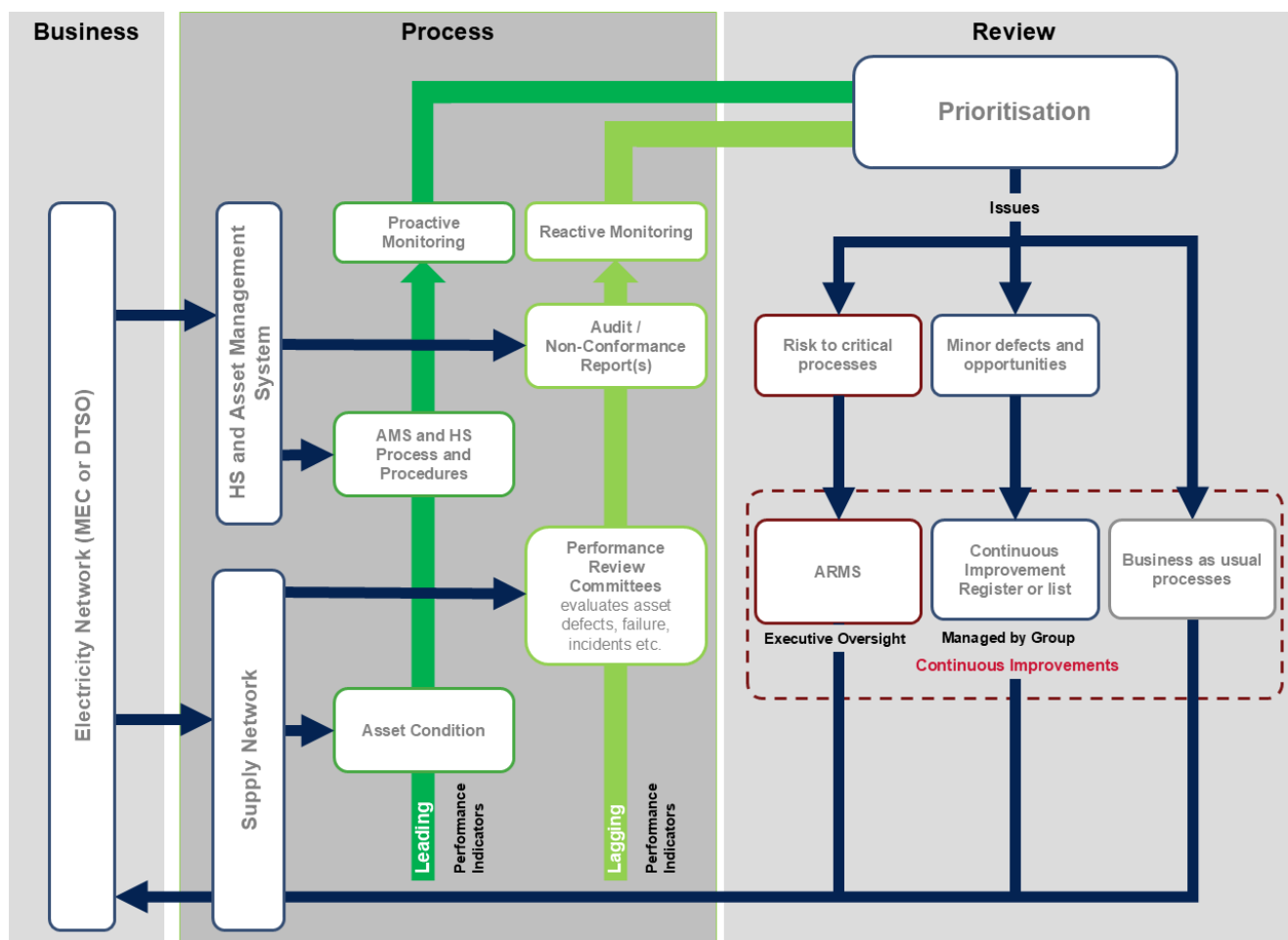


Figure 11 Transgrid and Lumea Monitor and Review Processes



6.11.2. Incident Identification and Reporting

Transgrid and Lumea Supply Network related Incidents and events, including asset failures associated with fire starts, are identified and managed through the following processes:

- 24-hour monitoring:
 - Operators identify failures and Incidents either through the SCADA monitoring systems, or from an external incoming call and record the Incident in the Operations Logging System (OpsLog). Asset failures are recorded as a Defect to be addressed in accordance with the D2017/01717 Corrective Maintenance Process.
- Corrective Maintenance Process:
 - Operations and maintenance staff identify and record asset Defects and failures in accordance with the process identified in Section 6.8.3 and as detailed in this section. An investigation is initiated to determine the root cause and improvements to be made to the procedures in this VBMP. For Incidents involving bushfire, the Control Room operator is contacted to begin emergency management procedures. See Section 6.10.1 for information on fault response and emergency response during that period.
- Incidents with a people safety or environment consequence are recorded as 'Incidents' in the ARMS for investigation by Transgrid and Lumea's Health and Safety business group.

Transgrid and Lumea use an Incident management process to capture information related to a fire Incident that has led to, or could have led to injury to people, damage to plant and machinery, and/or environment damage. The process for Incident investigation is:

- Fire and safety risk Incidents (initiated by Transgrid and Lumea staff including Contractors), are responded to and investigated in accordance with D2019/03823 HSE Incident Management.
- All Incidents are managed through the ARMS risk management system, which allows hazards, Incidents, risks, and compliance with procedures, and the on-time closure of actions to be tracked, managed, investigated, reported on, and audited. The findings from the investigation are recorded and are taken to prevent the Incident from occurring again.
- Incident response involves Transgrid and Lumea staff and contractors making the site safe, getting help, notifying supervisors about and escalating Incidents as soon as possible. The decision whether to suspend machinery, staff, and/or work activity is based on the Incident type and its consequences.
- Incident triage involves the Network (Asset Management and Health and Wellbeing), environment manager, and Delivery business units reviewing the consequences from the Incident and determining the internal and external notification requirements. The notification requirements of an Incident to WorkSafe Victoria, Energy Safe Victoria, and Environment Protection Authority Victoria is disclosed in D2020/01357 HSE External Notification of Incidents.

Fire Incidents initiated by a Transgrid or Lumea Supply Network are investigated using root-cause analysis to identify deficiencies in the controls that are meant to prevent the threat that caused the Incident. These Incidents are investigated using the methodology and investigator resource associated with the Incident classification (consequence) listed in Table 35. The Incident investigation and reporting process is detailed in D2018/01641 Asset Event and Investigation Reporting Procedure.

Table 35 HSE Incident Investigation Methodology

Consequence	Methodology	Investigator	Incident Close Out
Catastrophic (Actual and Potential) • Single fatality. Multiple major injuries. Permanent disabilities. • Significant extent of bushfire damage.	ICAM	Trained Leader or Independent investigator supported by the HSE/PC&S team.	General Manager of HSW
Major (Actual and Potential) • Multiple recoverable lost time injuries or life-changing illness. • Major injury requiring hospitalisation and numerous days lost.	ICAM	Trained Leaders – Safety and Environment Delivery or Major Projects teams to support	General Manager of HSW or Environment Manager Senior Environment Manager and Sustainability Manager (Environment Incidents only)
Moderate (Actual only) • Single recoverable lost time injury or illness, alternate/restricted duties injury, or short-term occupational illness. • Medical treatment injury - Injury requiring medical treatment by a doctor (inpatient or ongoing treatment).	5 Why's	Team leader with Safety and Environment Delivery or Major Projects team to support	Safety and Environment Manager

Consequence	Methodology	Investigator	Incident Close Out
Minor (Actual only) Illness of injury requiring medical treatment.	ARMS - Root cause of Incident	Team leader	Team leader
Minimal (Actual Only) Illness or injury not requiring medical treatment.	ARMS - Root cause of Incident	Team leader	Team leader

Health, Safety, Environment and Public Safety Incidents are reported to ESV, if they classify as a Serious Electrical Incident or other Serious Electrical Incident. For detailed requirements, refer to **ESMS** Section 6.7.4.

The communication requirements for health, safety, environment, and public safety Incidents are provided in Table 36.

Table 36 Health, Safety and Environment Communication

Type of Incident	Timeframe for Communication	Type of communication and audience	Staff responsible for communication
Health and Safety Incident	Immediately notify leader and enter Incident into the ARMS within 12 hours. General Manager of HSE or Safety and Environment Delivery Manager must be contacted immediately for Incident levels greater than or equal to Major.	- Phone Call - ARMS Incident notification - HSE Gram is sent to all staff in Transgrid and Lumea. - Team Leader/Group Manager is notified.	Incident raiser
Identified hazard	Immediately when a hazard is identified.	Record in ARMS and Team Leader/Group Manager is notified.	All staff
Lost time Incidents	Immediately after a lost time Incident has occurred.	Email and ARMS Incident notification to be communicated to relevant Group Managers, and Executive Group Managers.	General Manager of HSE
Critical Incidents	Within 24 hours of a critical risk Incident.	Transgrid and Lumea and Contractor staff are notified via HSE Gram emailed and published on the Wire after investigation is completed. HSE Gram is a single page report that provides information on what happened, investigation findings, lessons learnt and outcomes.	General Manager of HSE or Safety and Environment Delivery Manager
Incident Investigation reports	After Incident investigation has been completed.	ARMS Incident investigation is shared with HSE business groups.	Incident Investigator

Fire Incidents arising from Transgrid or Lumea Supply Networks resulting from asset failures are investigated according to Table 37 for review at the Network Performance Review forum. For detailed requirements on Incidents arising from Transgrid or Lumea Supply Networks resulting from asset failure, refer to **ESMS** Section 6.7.4.2.

Table 37 Supply Network Defects and Failures Investigation Process

Item	Category	Category Criteria	Defect/Failure must be recorded in EAM and Work Order created for investigation	Type of report for Network Performance Review meetings	Report Format	Criteria for external reporting
1	Outage caused by fire Incident or event by Customer asset is reported through FEOR (a formal email report to notify relevant Transgrid and Lumea staff and AEMO of an unplanned outage) by Network Operator.	Trip and Reclose (TAR)	Yes	FEOR Follow up Report	FEOR Follow-up Report to verify Transgrid and Lumea protection system operated correctly and within statutory timeframes.	Yes to Customer.
		Trip only				
		Trip, Reclose, Trip & Lockout (TARTLO)				
2	Outage caused by fire Incident or event in Transgrid and Lumea Supply Networks that is reported through FEOR (a formal email report to notify relevant Transgrid and Lumea staff and AEMO of an unplanned outage) by Network Operator.	Trip and Reclose (TAR)	Yes	FEOR Follow up Report		Yes in accordance with D2018/01241 Regulatory Incident Reporting Procedure.
		Trip only				
		Trip, Reclose, Trip & Lockout (TARTLO)				
3	Process Failure	Process failures identified in Investigation Reports.	Not applicable	ARMS	Actions in ARMS to identify, report and close process and quality improvements.	No
4	High consequence asset failure that has resulted in a fire Incident and: - Results in a loss of load. - Poses an actual or potential risk to safety, the environment or Transgrid and Lumea's image / reputation. - A Level 3 or above Incident as defined in the D2020/03320 Power System Emergency Response Plan (PSERP).	Assessment by AMC that failure had a significant potential to result in, or did result in, an Incident.	Yes	Investigation Report to determine findings using root-cause analysis.	Investigation report to identify root cause and identify process controls that failed to prevent asset failure or failed to minimise consequence.	Yes in accordance with D2018/01241 Regulatory Incident Reporting Procedure.
5	Statistical Incidents are recorded in the Network Performance Review Database	Any	No	Note in Network Performance Review database.	Database entry	Not required.

6.12. Policy in relation to providing assistance to Fire Control Authorities in investigation of fires near Transgrid and Lumea's Supply Networks (Regulation reference 8(n))

6.12.1. Assistance to Fire Control Authority investigations of fires

Transgrid and Lumea will respond to all information requests to assist fire investigations by Fire Control Authorities in a truthful and timely manner. Transgrid and Lumea will provide assistance during investigation led by Fire Control Authorities for fires at Transgrid and Lumea's Terminal Stations or Transmission Lines as outlined in Section 6.10.1.2, and 6.10.1.3.

6.12.2. Assistance to Fire Control Authorities to investigate during an active fire

Transgrid and Lumea will provide assistance and access to the Transgrid and Lumea Supply Networks for Fire Control Authorities to investigate fires while active fires are in progress and Transgrid and Lumea must:

- Provide a copy to Fire Control Authorities of the publicly available Transgrid and Lumea Fact Sheet 'Managing Bushfire Risk', available on Transgrid's public internet site (transgrid.com.au) when meeting with the Fire Control Authorities to advise how to fight fires safely in the vicinity of, and how to gain safe access to Transgrid and Lumea's Supply Networks.
- Advise the same Fire Control Authorities of the intention to de-energise or energise a component of Transgrid and Lumea's Supply Networks. Network Operations will request from Fire Control Authorities any risks that they foresee from a loss of power supply to enable Transgrid and Lumea to complete an assessment of risks associated with de-energising or energising a component of Transgrid and Lumea's Supply Networks.

Fire Control Authorities can contact Network Operations group via the External Emergency contact number (1800 027 253) available in the Fact Sheet 'Managing Bushfire Risk' when seeking assistance from Transgrid and Lumea or seek advice including confirmation of the de-energisation of a component of Transgrid and Lumea's Supply Networks.

The fire response requirements for fires that initiate at a Terminal station are detailed in the emergency response manuals applicable to each Transgrid and Lumea Supply Network and are listed in Table 38. These require:

- That the Fire Control Authority is not given access to the Terminal Station until there is confirmation that it is electrically isolated with earths applied.
- That oil volumes are reviewed to be able to estimate the size of a fire and inform this to the Fire Control Authority.
- That the Fire Control Authority must be given a fire pack that includes:
 - Site location
 - Site asset information
 - Site specific information, hazards, and sensitivities.
 - Site general arrangement
 - Simplified site drainage diagram.
 - Fire diagram

Table 38 Supply Network Terminal Station Emergency Response Manuals

Supply Network (Terminal Station)	
Deer Park (DPTS)	D2017/04096 Deer Park 220kV Substation - Emergency Response Manual
Kiamal (KMTS)	D2019/04983 Kiamal 220kV Substation - Emergency Response Manual
Berry Bank Supply Network (BBTS and BBW)	D2020/02074 Berrybank WF 220kV Substation - Emergency Response Manual D2020/02075 Berrybank WF 220kV Switching Station- Emergency Response Manual
Plumpton Renewable Terminal Station (PRTS)	D2025/00358 Plumpton 500kV Terminal Station - Emergency Response Manual

6.13. Processes and procedures for enhancing public awareness for the need to inspect, maintain and mitigate bushfire danger for private electric lines (Regulation reference 8(o)).

This is not applicable to Transgrid and Lumea's Supply Networks as they do not contain private electric lines.

7. Prescribed information about the plan to be made publicly available by Transgrid and Lumea (Regulation reference 8)

Refer to the public version of this VBMP available on Transgrid and Lumea's websites.

8. Prescribed parts of electric lines (Regulation reference 9)

Neither Transgrid nor Lumea have any private electric lines installed after the point at which the line is connected to a building or other structure (not including a pole) on the land. Thus, the clauses related to section 9 of the ESBMR are not applicable.

9. Prescribed times of inspection (Regulation reference 10)

Neither Transgrid nor Lumea own any private electrical lines. Thus, the clauses related to section 10 (a) and (b) of the ESBMR are not applicable.

10. Prescribed standards of inspection (Regulation reference 11)

Neither Transgrid nor Lumea own any private electric lines. Thus, the clauses related to section 11(1)(a) of the ESBMR are not applicable.

11. Minimum clearance of private electric lines (Regulation reference 12)

Neither Transgrid nor Lumea own any private electric lines. Thus, the clauses related to section 12 of the ESBMR are not applicable.

12. Prescribed period in which notice of inspection is to be given (Regulation reference 13)

Neither Transgrid nor Lumea own any private electric lines. Thus, the clauses related to section 13 of the ESBMR are not applicable.

13. Prescribed form of notice to be given before inspection (Regulation reference 14)

Neither Transgrid nor Lumea owns any private electric lines. Thus, the clauses related to section 14 of the ESBMR are not applicable.

14. Exemptions and Declarations (Regulation reference 15)

Transgrid has no current exemptions to the ESBMR.

Lumea has no current exemptions to the ESBMR.

15. Change from previous revision

Table 39 Document revision

Revision no	Approved by	Date	Amendment
1	EM / Networks	03/2018	Moved to Revision 1 Transgrid Approval following ESV acceptance
2	General Manager of Asset Management	11/2019	Updated Sections 1 to 4 to address Kiamal Terminal Station. Appendix B updated to reflect currently active standard jobs. Appendix F added to include Kiamal Terminal Station specific information to manage bushfire risk exposure.
3	General Manager of Asset Management	9/2020	Included Berrybank information
5	Executive General Manager, Network, Transgrid Executive General Manager, Lumea	6/2025	- Re-numbered the sections to follow Transgrid's new template. (All procedures covering Transgrid and Lumea Supply Networks are Transgrid branded.) - Implemented changes as per the recent publication of Electricity Safety (Bushfire Mitigation) Regulations 2023 (Vic), primarily on the compliance to clause 7 - Prescribed particulars for bushfire mitigation plans—major electricity companies. - Included Berrybank Transmission Line 2 information. - Included Transmission Lines 060 and Transmission Line 0X1 in Appendix H and I, and throughout the document. Additionally, adding clear reference to Prescribed Maintenance Plans associated with the two Transmission Lines. - Replaced the old reference to D2016/00985 Environmental Assessment Framework with D2023/01113 Environmental Assessment Framework - Victoria across the entire document. - Updated roles and responsibilities to reflect new organisational structure.

Revision no	Approved by	Date	Amendment
			- Added Lineworker License requirement under section 6.9.1 and 6.9.2 - Clarified the Environmental authorisation with reference to <u>D2023/01113 Environmental Assessment Framework - Victoria</u> in section 6.9.2 - Included geography and climatic descriptions in Appendix D, E, and F - Updated 'code red' to 'catastrophic' according to the new national Fire Danger Rating. - Updated description of access and storage location for Hot Work permit as per Schedule 14 and 40 - Updated Terminal station Maintenance Plan Activities for Kiamal and Berrybank, Appendix E.5 and F.5 - Removed the old Appendix A – Bushfire preventive and mitigative controls, instead, adding the reference to <u>D2018/00673 Electricity Safety Management Scheme (ESMS)</u> - Removed the old Appendix B Assessment of work orders in scope of this VBMP as this information is duplicate of <u>D2015/09823 Bushfire Risk Management Plan</u> - Removed the old Appendix C Network Incident Reporting Matrix as per <u>D2018/01641 Transgrid Asset Event Investigation and Reporting</u> rev 2. - Made other general editorial changes. - Reworked in line with ESV guidance to be submitted for ESV acceptance. - Updated to address ESV Audit action issues. - Included PRTS Supply Network. - Reduced asset information to that essential to the operation of this VBMP.
6	Executive General Manager, Network, Transgrid Executive General Manager, Lumea	6/2026	- Reworked in line with ESV guidance to move from provisional approval to full approval. This includes numerous wording changes to remove non-committal language and align with the Electricity Safety Act and Bushfire Mitigation Regulations. - Updated to include Maximo terminology.

16. References

Table 40 Document References and Incorporation

Document	Relationship to this VBMP	HP TRIM No	Revision
Regulatory References			
The Victorian Electricity Safety Act 1998	Victorian Regulation or Act	N/A	1998
Electricity Safety (Bushfire Mitigation) Regulations 2023	Victorian Regulation or Act	N/A	2023
Electricity Safety (Electric Line Clearance) Interim Regulations 2025	Victorian Regulation or Act	N/A	2025
Electricity Safety (Management) Regulations 2019	Victorian Regulation or Act	N/A	2019

D2018/00674, Victorian Bushfire Mitigation Plan – For Public, Controlled Document Revision 5

Document	Relationship to this VBMP	HP TRIM No	Revision
Country Fire Authority Act 1958	Victorian Regulation or Act	N/A	1958
Code of Practice on electrical safety for work on or near high voltage electrical apparatus The Blue Book - Energy Safe Victoria	ESV Guideline	N/A	2020
ESV Reporting through OSIRIS	ESV Guideline	N/A	1
Incident and safety performance reporting guidelines – Major Electricity Companies	ESV Guideline	N/A	
Incorporated or Regulatory Documents			
Electric Line Clearance Management Plan 2026-2031	Regulatory Document	D2020/00020	5
Electricity Safety Management Scheme (ESMS)	Regulatory Document	D2018/00673	3
Safe Work Handbook – Victorian Assets	Incorporated	D2025/00007	1
Victorian Formal Safety Assessment	Referenced	D2024/00836	2
Referenced Documents			
AMS, ENSMS and ESMS Audit Plan	Referenced	D2021/00073	
AMS, ENSMS and ESMS Audit Procedure	Referenced	D2014/18781	
Asset Acceptance Procedure	Referenced	D2016/07756	
Asset Event and Investigation Reporting Procedure	Referenced	D2018/01641	
Asset Management Change Procedure	Referenced	D2014/19046	
Authorisation to Work	Referenced	D2016/11314	
Berrybank WF 220kV Substation - Emergency Response Manual	Referenced	D2020/02074	
Berrybank WF 220kV Switching Station- Emergency Response Manual	Referenced	D2020/02075	
Condition Monitoring Manual	Referenced	D2014/09504	
Corrective Maintenance Process	Referenced	D2017/01717	
Deer Park 220kV Substation - Emergency Response Manual	Referenced	D2017/04096	
Hot Work and Fire Risk Work Procedure	Referenced	D2012/04610	
Kiamal 220kV Substation - Emergency Response Manual	Referenced	D2019/04983	
Managing Bushfire Risk – Fact Sheet	Referenced		February 2024
Maintenance Plan – Easement and Access Tracks	Referenced	D2003/2398	
Maintenance Plan – Transmission Lines Assets	Referenced	D2014/16598	
Maintenance Program – Variation Process	Referenced	D2016/15009	
Non-Prescribed Assets Maintenance Plan	Referenced	D2020/00269	
Power System Emergency Response Plan (PSERP)	Referenced	D2020/03320	
PRTS Emergency Response Manual	Referenced	[TBC]	
Regulatory Incident Reporting Procedure	Referenced	D2018/01241	
Route Selection Guideline	Referenced	D2023/01196	
Safety in Design	Referenced	D2012/14473	
Standard Design Manual – High Voltage Design	Referenced	D2013/09399	

D2018/00674, Victorian Bushfire Mitigation Plan – For Public, Controlled Document Revision 5

Document	Relationship to this VBMP	HP TRIM No	Revision
Standard Design Manual – Protection and Metering	Referenced	D2013/09400	
Technical Design Competency Procedure	Referenced	D2023/00824	
Transmission Line Design Manual	Referenced	D2017/12949	
Transmission Line Design Manual – Major New Builds	Referenced	D2023/00450	
Other			
AusNet Services – Transgrid – AusNet Services Operating Protocol (Procedure for ensuring isolation and operating clearances are maintained on equipment interfaced between the two organisations)	Referenced	As signed by both parties.	

17. Attachments

Appendix A Bushfire In Scope work orders determination

Appendix B Incident Levels and Emergency Response Levels

Appendix A Bushfire In Scope work orders determination

A.1 Bushfire In Scope work orders

The following combinations of work orders are in scope for bushfire risk management on the Transgrid and Lumea's Supply Networks:

- Asset Classifications
 - Automation
 - Easement
 - Network Property
 - Terminal Station (Substation)
 - Transmission Line
- Maintenance Type

Work Type	Description	Work Sub Type	Description
COR	Corrective	REPR	Repair
ESC	Easement Corrective	ESC	Easement Corrective
ESI	Easement Inspection	ESI	Easement Inspection
ESM	Easement Maintenance	ESM	Easement Maintenance
IMP	Improvement	INVS	Investigate
		MODF	Modify
INSP	Inspection	INSP	Inspection

- INSP 'Bushfire In Scope' field: has 'INC' – Include Reviewed, and 'REV' – Review Required.

A.2 Determination of work orders in scope of this VBMP

The 'Bushfire In Scope' field in work orders is used to assist in managing Transgrid and Lumea's bushfire risk exposure by:

- Eliminating or reducing likelihood of bushfire risk.
- Reducing the magnitude of bushfire consequence.
- Improving the effectiveness of controls in place to mitigate bushfire threats and consequence.

Maintenance Engineering Managers ensure that all maintenance work orders are identified as either in scope (with 'INC' in the Bushfire In Scope field) or out of scope (with 'EXC1' in the Bushfire In Scope field) of this VBMP.

Work orders marked as 'REV- Review Required' are reviewed by a competent person in the relevant Transgrid and Lumea Supply Network Maintenance Engineering business branch to determine if the maintenance work identified in the work package is in scope for bushfire risk management. The 'REV' code must be replaced by one of the following:

- INC - Include Reviewed. This code is selected if the maintenance activity will directly impact the threats and/or controls related to bushfire risk management.
- EXC1 - Work not BF consideration. This code is selected if the maintenance activity does not directly impact the threats and/or controls related to bushfire risk management.

An online report identifies work orders with 'REV' in the Bushfire In Scope field that are yet to be assessed. Maintenance Engineering Managers are responsible for tracking the appropriate update of the Bushfire In Scope field and completing the Bushfire Maintenance Program.

A.3 List of standard Job Plans

Job Plans for Transgrid and Lumea's Supply Networks are managed in the EAM and attached to work orders to provide details on the activities required to be performed by field staff when inspecting or correcting Defects. Job plans include the standard scope of works, resource, and cost estimates. Table 41 includes inspection job plans used to create maintenance work orders for the critical routine maintenance activities in Section 6.8.2.

Table 41 List of EAM Job Plans applicable to this VBMP

Job Plan	Job Plan Description	Work Type	Work Sub Type	Bushfire In Scope
I2340	Substation Oil Containment Rectification	IMP	MODF	INC
L6GDF	Property & Facilities Corrective Maint.	COR	REPR	REV
PROTDF	Protection Defect	COR	REPR	REV
SO980A	Major Maintenance on Diesel Engine	INSP	INSP	INC
SO980B	Minor Maintenance on Diesel Engine	INSP	INSP	INC
S1SBLI	Annual Substation Inspection Large Site	INSP	INSP	INC
S1SBSI	Annual Substation Inspection Small Site	INSP	INSP	INC
S1SUBL	6 Monthly Sub Inspection Large Site	INSP	INSP	INC
S1THRL	Large Substation Thermovision Inspection	INSP	INSP	INC
S6AXT	Auxiliary Transformer Defect	COR	REPR	REV
S6BG	Bushing Defect	COR	REPR	REV
S6BGE	Investigate Bushing Elect Test Result	IMP	INVS	REV
S6BLD	Building Defect	COR	REPR	REV
S6CBC	Investigate CB Contact Resistance Result	IMP	INVS	REV
S6CBE	Investigate CB Electrical Test Results	IMP	INVS	REV
S6CBG	Investigate CB Gas Results	IMP	INVS	REV
S6CBR	Circuit Breaker Defect	COR	REPR	REV
S6CBS	Investigate CB Spring Charge Results	IMP	INVS	REV
S6CBT	Investigate CB Timing Results	IMP	INVS	REV
S6CT-	Current Transformer Defect	COR	REPR	REV
S6CTE	Investigate CT/VT Electrical Test Result	IMP	INVS	REV
S6DESG	Investigate DESW Gas Results	IMP	INVS	REV
S6EGD	Earth Grid Defect	COR	REPR	REV
S6FPE	Fire Protection Defect (Deluge/Hydrant)	COR	REPR	REV

Job Plan	Job Plan Description	Work Type	Work Sub Type	Bushfire In Scope
S6IT-	Instrument Transformer Defect	COR	REPR	REV
S6ITG	Investigate IT Gas Results	IMP	INVS	REV
S6REA	Reactor Defect	COR	REPR	REV
S6TCH	Tapchanger Defect	COR	REPR	REV
S6THER	Defect Found During Thermography	COR	REPR	INC
S6TX-	Transformer Defect	COR	REPR	REV
S6TXE	Investigate Tx Electrical Test Results	IMP	INVS	REV
S6VT-	Voltage Transformer Defect	COR	REPR	REV
TAERL	Aerial Inspection	INSP	INSP	INC
TBENT	Replace Tower (structure) Member	COR	REPR	REV
TBOND	Structure Leg Earth Repair	COR	REPR	INC
TCFR	Conductor Repair	COR	REPR	INC
TEASCO	Easement Defect Maint - Contract	ESC	ESC	INC
TEASE	Easement Defect Maint - Staff	ESC	ESC	INC
TET240	Lidar 240pa + 50c	ESC	ESC	INC
TET50	Lidar No Wind + 50c	ESC	ESC	INC
TETMAX	Lidar Tmax	ESC	ESC	INC
THRREP	Hot Joint Repair	COR	REPR	INC
TINSUL	Insulator Replacement Three Phase	COR	REPR	INC
TLFIT	Fitting Repair	COR	REPR	INC
TLIDR	Lidar Scan	ESI	ESI	INC
TLMAIN	Tower (structure) Repair	COR	REPR	INC
TOFFEA	Off Easement Tree Removal	ESM	ESM	INC
TOHEW	OHEW Bonding	COR	REPR	REV
TOHEWR	OHEW/OPGW Broken Strands	COR	REPR	REV
TONEA	On Easement Tree Removal	ESC	ESC	INC
TRUST	Tower (structure) Stub Leg/Member/Bolt Rust	COR	REPR	REV
TTHERM	Thermographic Survey Of All Joints	INSP	INSP	INC

Work Type: COR – Corrective, ESI – Easement Inspection, ESC – Easement Corrective, IMP – Improvement, INSP – Inspection

Work Sub Type: ESI – Easement Inspection, ESC – Easement Corrective, ESM - Easement Maintenance, INVS – Investigate, REPR – Repair

Bushfire In Scope: INC – Included, REV – Included after review (may deemed in review of the actual defect to not be bushfire related.)

Appendix B Incident Levels and Emergency Response Levels

Transgrid and Lumea have created a framework to manage Transgrid and Lumea’s Supply Network operations during disruptions, with responses tailored to the severity of Incidents and classified into five levels based on AEMO’s Power System Emergency Response plan as detailed in Table 42 below. This information is summarised from the [D2020/03320 Power System Emergency Response Plan](#) (PSERP).

Table 42 Incident Level Definitions

AEMO Power Systems Emergency Management Plan Levels	Level 1 Operational Incident	Level 2 Local Emergency	Level 3 Widespread Emergency	Level 4 AEMO Coordinated (multi-state)	Level 5 Jurisdiction Direction
Description	Local Incidents – minor nature, FEORs, callouts, minor injuries or near miss, minor environmental Incidents.	Group Emergency – Prolonged loss of supply, serious injuries, reportable environmental or safety Incident.	Significant or widespread loss of load, major bushfire Incidents, terrorist attack, fatality or ongoing risk of fatalities, significant environmental harm to world heritage areas.	Industry Emergency- Impact goes well beyond Transgrid and Lumea’s area of operations. Overall system safety and integrity at risk.	Government Emergency- Potential impacts reach a point where government intervention is required.
Transgrid and Lumea Management Lead:	Transgrid and Lumea Managed		AEMO Managed with Transgrid and Lumea support		Government Controlled
Transgrid and Lumea Management Lead	Relevant maintenance team works leader and Maintenance Engineering Manager. (Management is not within the scope of the PSERP)	Group or Corporate Emergency Management Team			
Safety Incident arising from Transgrid and Lumea Supply Networks or impacting on a Transgrid and Lumea Supply Network.	Minor Injury Risk to Staff or Public Risk is manageable	Serious Injury Significant risk to staff	Threat to all staff safety Ongoing potential risk of multiple fatality / public safety	Threat to public safety / environment due to loss of supply Industry wide impacts Extends outside jurisdiction of Incident	Government Controlled Intervention due to safety concerns
Forced Outages with loss of load. (Reliability Incident)	Single Transmission element trips	Loss of major town > 2hrs (or < 200MW<1hr)	Widespread outages (>200MW >1hr) LOR2 conditions Load Shedding	Whole of NEM impact LOR 3 conditions Significant Load Shedding	One or more NEM jurisdictions enabling energy emergency legislation
Transgrid and Lumea Supply Network Faults and Asset Failures	Urgent Alarms Line Lockout Loss of Comms to a site	Localised Damage Equipment Failure Power Transformer / Busbar Failure	Multiple Asset failures Loss of substation Loss of all SCADA	Multiple Sites at Risk Whole of NEM Response required	One or more NEM jurisdictions enabling energy emergency legislation
Cyber-security impacting on Transgrid and Lumea Supply Networks	Evidence of intrusion Software/hardware on site won’t respond or behaving erratically	Intruder(s) on site Random Operations Multiple sites behaving erratically	Terrorist threat or cyber-attack on multiple sites Sites cannot be controlled	Terrorist Attack or cyber-attack on whole of NEM	Government Intervention due to cybersecurity concerns
Physical Security impacting on Transgrid and Lumea Supply Networks	Evidence of intrusion	Intruder(s) on site	Malicious Damage (Sabotage and Terrorism) threat to sites.	Terrorist Attack on whole NEM	Government Controlled Intervention due to security concerns