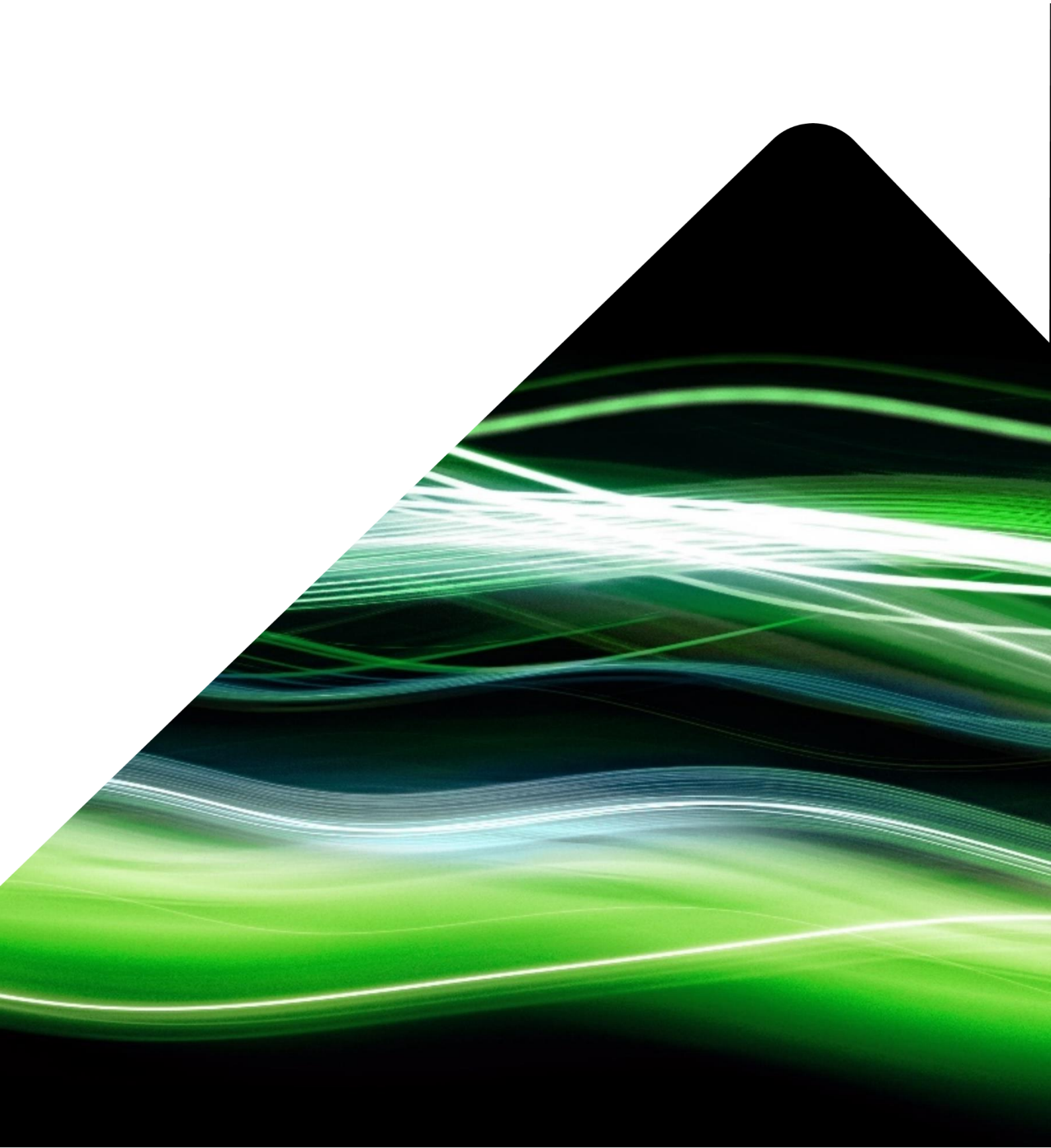
Transgrid

People. Power. Possibilities.

Victorian Assets Bushfire Mitigation Plan – For Public

Accepted by Energy Safe Victoria 16 July 2025



Contents

1. Purpose

This Victorian Bushfire Mitigation Plan (Plan) 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 document will be communicated to external stakeholders on Transgrid and Lumea's internet sites as required under Regulation 8 of the *Electricity Safety (Bushfire Mitigation) Regulations 2023 (Vic) (ESBMR)*.

This document demonstrates how Transgrid and Lumea will minimise bushfire risk AFAP arising from: Transgrid and Lumea's Supply Network operations; 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 Plan is required to be submitted by Transgrid and Lumea operating as a Major Electricity Company (MEC) or Declared Transmission System Operator (DTSO) in Victoria in accordance with the *Electricity Safety Act 1998* (the Act) and the ESBMR. This Plan is developed in accordance with the requirements of AS 5577-2013: Electricity Network Safety Management Systems.

Transgrid and Lumea submit this Plan as per the requirement of Section 113A(1) of the Act, that a MEC "*must prepare and submit to Energy Safe Victoria (ESV) for acceptance under this Division, a plan for the company's proposals for mitigation of bushfire in relation to the company's supply network"* at the end of each period of five years commencing on the latter of:

(a) the date when the accepted bushfire mitigation plan is first accepted under this Division; or

(b) the date of the most recent acceptance of a revision of the accepted bushfire mitigation plan submitted under this Division.

This Plan provides the prescribed particulars related to Transgrid and Lumea as required by Regulation 7 of the ESBMR in Sections 5 to 13.

The Plan details the processes to prevent the following foreseeable threats that initiate bushfire risks arising from Transgrid and Lumea's Supply Networks from:

- Transmission line structure failure.
- Transmission line conductor drop.
- Clearance encroachment by vegetation.
- Explosive failure of terminal station equipment.
- Electrically induced fire.
- Hot work and fire risk activities.

This Plan refers to other plans, manuals, standards, policies, procedures and work instructions that, when combined with this Plan, cover all activities that contribute to the overall mitigation of bushfire risk from Transgrid and Lumea's Supply Networks.

This plan is available to all staff and authorised contractors via Transgrid and Lumea's intranet, the Wire or Lumea Wire respectively, and a public version compliant with Regulation 8 of the ESBMR on Transgrid's website (http://www.transgrid.com.au/) and Lumea's website (http://www.lumea.com.au).

As per s.113A(3) (b) of the Act, a copy of the accepted and current Plan will be available at Transgrid and Lumea's Melbourne office location (80 Collins St, Melbourne, Victoria) by arrangement with the Transgrid Strategic Asset Management Manager.

2. Scope

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

Transgrid:

- Deer Park Terminal Station (DPTS)
- Dederang and Wodonga Capacitor Banks
- Line X1/X9 (Structure Numbers 59-63)
- Line 060 (Structure Numbers 321 and 322)

Lumea:

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

This Plan demonstrates how the bushfire risk arising from the Transgrid and Lumea Supply Networks is mitigated AFAP in accordance with the controls identified in the **ESMS**.

This Plan is an accepted document by ESV. Any changes will be performed in accordance with the Act and ESBMR.

This structure of the document is aligned to the structure of the ESBMR as detailed in Section 4.

3. Definitions

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

Table 1 Abbreviations

Abbreviation	Phrase
ACT	Australian Capital Territory
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
AFAP	As Far as Practicable – Acronym used in this ESMS to describe how Transgrid and Lumea are meeting the requirements of Section 98 of the Act.

Abbreviation	Phrase
AIM	Asset Inspection Manager – The mobile solution used by Transgrid and Lumea to provide an electronic system for automated delivery of work instructions and worker responses with the EAM.
AMC	Transgrid and Lumea's Asset Monitoring Centre
AS	Standards Australia
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 – The management system certified consistent with International Standards Organisation (ISO) 55001:2014 Asset Management – Management Systems - Requirements by a suitably qualified person. Its linkage to the ESMS is described in Section 6.3.1
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 Windfarm Terminal Station 220kV line
BBTS	Berrybank Terminal Station
BBW	Berrybank Wind Farm Terminal Station
Berrybank Supply Network	Defines the collective of BBTS, BBW and BB1/BB2.
BI	Business Intelligence report tool used to data visualisation and reporting
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
CAMMS	Corporate system for managing corporate risk registers, audit register, compliance register, and incident register. CAMMS 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.
CAR	Control Assurance Review A systematic method of: • Validating identified risk controls are in place and are effective. • Verifying compliance and facilitating improvements to our Management Systems, plans, standards and procedures.
CB	Circuit Breaker
CFA	Victorian Country Fire Authority
CIGRE	International Council on Large Electric Systems
COMA (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;
CT	Current Transformers

Abbreviation	Phrase
Defect	An out-of-specification condition which, if left unattended, may affect the bushfire risk from the Supply Network. Defects are identified through routine maintenance, inspections, operating failure or asset management review.
DNSP	Distribution Network Service Providers
DPTS	Deer Park Terminal Station
DTSO	Declared Transmission System Operator means a person declared by Order under section 31 to be a declared transmission system operator, or any successor in law or assignee of that person as per Section 33 of the National Electricity (Victoria) Act 2005
EAM	Enterprise Asset Management system, often referred to as the Enterprise Resource Planning system (ERP). This system manages: • Asset register that contains metadata of for the component parts of the network. • Management of maintenance activities by the creation of work packages under the cover of a work order. • Provision of reports on the performance of maintenance activities.
ELCMP	D2020/00020 Electric Line Clearance Management Plan that meets the requirements of the *Electricity Safety (Electric Line Clearance) Regulations 2019* and is accepted 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 Victorian supply network Transmission or Distribution Network Service Provider (TNSP or DNSP). This date occurs prior to or concurrent to the in-service-date.
ESBMR	*Electricity Safety (Bushfire Mitigation) Regulations (Vic)*
ESC	Essential Services Commission (of Victoria)
ESELCR	*Electricity Safety (Electric Line Clearance) Regulations (Vic)*
ESI	Electrical Supply Industry
ESMR	*Electricity Safety (Management) Regulations (Vic)*
ESMS	Electricity Safety Management Scheme (This scheme is to meet the requirements of the *Electricity Safety Act 1998 (Vic)* and the *Electricity Safety (Management) Regulation 2019 (Vic)*. This scheme is an AS 5577 compliant system as applied to Transgrid and Lumea's licenced or declared Victorian Supply Networks, or . ESMS will refer to the Electricity Safety Management System (SMS) for each Supply Network, unless stated otherwise.
ESV	Energy Safe Victoria, the Victorian technical and safety regulator
FDP	Fire Danger Period means a period declared under Section 4 of the Country Fire Authority Act 1958 to be a fire danger period.
FEOR	Forced / Emergency Outage Report
Fire Control Authority	CFA or FRV
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	Phrase
	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.
Foreseeable	Where it is possible to perceive, know in advance, or reasonably anticipate that damage or injury will 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 document FSA it is referring to the incorporated document D2024/00836 Victorian Formal Safety Assessment
Global Power Generation	Global Power Generation Australia Pty Ltd (ACN 130 542 031)
Hazardous Bushfire Risk Area (HBRA)	An area to which a fire authority has assigned a fire hazard rating of "high" under section 80 of the Act, whether or not the area is an urban area; or 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 (a) as defined by CFA.
Hazards in Operation	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
HBRA	Hazardous Bush Fire Area – As defined in the Act as an area: (a) to which a fire authority has assigned a fire hazard rating of "high" under section 80 of the Act, 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 the Act)
HPI	High Potential Incident – Any incident or event 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 Transgrid and Lumea use to measure network performance.
HSMS	Transgrid and Lumea's certified Work, Health and Safety Management System
Incident (HSE, Bushfire and Public Safety Incidents) (Includes fire incidents)	An unplanned event that occurs which caused damage to the environment, property, security or Transgrid and Lumea's Supply Networks, or had the potential to or has caused an injury or disease. HSE incidents are rated as per Appendix A of the D2019/03823 HSE Incident Management
Incidents (Supply Network events) (Includes bushfire and asset failure related events)	High Consequence Incident: An incident or event caused by Transgrid and Lumea Supply Networks that: • Results in a loss of load • Poses an actual or potential risk to safety, the environment or Transgrid and Lumea's image / reputation. • Results in significant financial loss. • Causes a significant non-compliance to the National Electricity Rules, PSDCS or another regulatory requirement. • Is a Level 3 or above incident as defined in the PSERP. • Is otherwise reportable to ESV as a dangerous or high-risk event. Low Consequence Incident: • An incident or event caused by Transgrid and Lumea's Supply Networks which does not meet the criteria of a high consequence incident but requires further follow up through either the Forced and Emergency Outage follow up and/or investigation reporting process. Statistical Incident:

Abbreviation	Phrase
	• An incident or event caused by Transgrid and Lumea's Supply Networks which does not meet the criteria of a high or low consequence incident and is recorded for statistical and further analysis purposes only.
Incorporated Document	A document that forms part of the accepted ESMS. Incorporated Documents are shown with bold underlined font.
In-Service Date	The date at which a Supply Network is operational and 'on-load' supplying customers
ISO	International Standards Organisation
KMTS	Kiamal Terminal Station
KSF Project Trust	KSF Project Nominees Pty Ltd as trustee for KSF Project Trust (ACN 625 106 907)
LAN	Local Area Network that contains data storage folders for the storing of records. The LAN folders have restricted access with the folder owner needing to authorise access though a request on Transgrid and Lumea's information system.
LBRA	Deemed to mean areas assigned a fire hazard rating of 'low'.
Lumea	Lumea Pty Ltd (ACN 626 136 865) as trustee for Lumea Trust (ABN 94 121 353 950) (operating as Lumea)
Lumea Wire	Lumea's intranet/private network webpage for information sharing.
MEC	A major electricity company as defined in the Act
MREH	Melbourne Renewable Energy Hub operated by Equis Energy
NC	Non-Conformance
Network Asset Strategy Or NAS	The strategic asset management plan as defined by ISO 55001:2014 Asset Management – Management Systems - Requirements updated at least every 3 years as part of compliance to that standard. This document defines the objectives for activities within the scope of the Asset Management System related to Transgrid and Lumea.
Network Services	Where used in the context of the Shared Network are the services by that name provided by Transgrid or by Lumea (services are specific to a Supply Network) under a Network Services Agreement, and where used in the context of the Interface are the services by that name provided by AusNet Services under the AusNet Network Services Agreement. Network services are agreed under a formal Network Services Agreement (NSA) signed with AEMO 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 • 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.
Non-conformance	The failure to comply with Transgrid and Lumea's internal requirement, standard, or procedure.
Non-routine Maintenance	Actions required to address an out-of-specification condition identified through routine maintenance, alarms, condition-monitoring performance indicators, operating failure or asset management review. The condition, if left unattended, may affect the performance or reliability of plant and equipment. These are non-routine maintenance tasks completed on a condition basis or when a Defect is identified, rather than on a programmed basis.
OPGW	Optical Ground Wire
Plan	This Victorian Bushfire Mitigation Plan (Transgrid and Lumea TRIM No: D2018/00674)
Powercor	Powercor Australia Ltd (ACN 064 651 109) of 40 Market Street Melbourne (Powercor)

Abbreviation	Phrase
Practicable	As defined in the Section 3 of the Act
PRTS	Plumpton Renewable Terminal Station
PSERP	Power System Emergency Response Plan
Referenced Document	A document that informs the assessment but does not form part of the accepted ESMS. Reference documents are shown as underlined within the ESMS
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.
Substation	Substations are the 'junctions' where circuits connect to one another, creating the 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 ESMS a reference to a ‘substation’ shall be interpreted as a reference to a Terminal Station.
Supply Network	A network consisting of electric 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 the Act. The Transgrid and Lumea Supply Networks are identified in Section 6.4.1 to 6.4.7.
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 transmission 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 *Country Fire Authority Act 1958*.
the Wire	Transgrid’s intranet/private network webpage for information sharing.
TheOS	Transgrid and Lumea’s outage management software
TNSP	Transmission Network Service Provider - A person who engages in the activity of owning, controlling or operating a transmission system, this being transmission network, together with the connection assets associated with the transmission network, which is connected to another transmission system or distribution system.
TRA	Technical Risk Assessment
TRAC	Generic term for a work allocation system used to assign appropriate resources to work activities on the Network. (Previously called TRAC)
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 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 (a) but is deemed by the AER to be part of the transmission network. Except in the case of a declared transmission system of an adoptive jurisdiction, an identified user shared asset and designated network asset owned, controlled or operated by a Primary Transmission Network Service Provider (including a third party IUSA or designated network asset not owned by the Primary Transmission Network Service Provider that is the subject of a network operating agreement)

Abbreviation	Phrase
TSS	Transgrid and Lumea Spatial System – Transgrid and Lumea's system for providing geographic spatial information on the location of its electricity Supply Networks within Victoria. It includes additional information stored as layers showing roads, bushfire risk areas, cadastral information, etc. This system is commonly called a Geographic Information System (GIS)
VBMP	D2018/00674 Victorian Bushfire Mitigation Plan that meets the requirements of the ESBMR and is accepted by ESV.
VT	Voltage Transformer
WSAT	Worker Safety and Authorisation Training – Computer 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 plan and indicates any sections that are exempt or not applicable.

Table 2 Compliance to the ESBMR

Clause No.	This Document Section
7 Prescribed particulars for bushfire mitigation plans—major electricity companies	5
8 Prescribed information about bushfire mitigation plans to be made publicly available by major electricity companies For the purposes of section 113A(3) of the Act, the following are the prescribed particulars -	6
(a) the company's name, 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 mitigation of fire danger arising from the company's supply network;	6.3
(e) the description, map or plan of the land to which the bushfire mitigation plan applies;	6.4
(f) the preventative strategies and programs to minimise the risk of the 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 originating 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 its 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

Clause No.	This Document Section
(m) the investigations, analysis and methodology 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 company's supply network;	6.12
(o) the details of the 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 company's obligation 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	7 Prescribed parts of electric lines (Regulation reference 9)
10 Prescribed times of inspection	8 Prescribed times of inspection (Regulation reference 10)
11 Prescribed standards of inspection	9 Prescribed standards of inspection (Regulation reference 11)
12 Minimum clearance of private electric lines (other than bare open wire electric lines)	10 Minimum clearance of private electric lines (Regulation reference 12)
13 Prescribed period in which notice of inspection is to be given	11 Prescribed period in which notice of inspection is to be given (Regulation reference 13)
14 Prescribed form of notice to be given before inspection	12 Prescribed form of notice to be given before inspection (Regulation reference 14)
15 Exemptions	13 Exemptions and Declarations (Regulation reference 15)

5. Bushfire Mitigation (Regulation Reference 7)

Please contact Transgrid if access to the full version compliant 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))

Within this Bushfire Mitigation Plan, statements that apply to both a Transgrid and a Lumea Supply Network are referred to as being applicable to ‘Transgrid and Lumea’.

In Victoria, Transgrid and Lumea have the following roles:

- Transgrid is a DTSO for Lines X1/X9 and line 060, where they have crossed the NSW/VIC border, and the Dederang and Wodonga Capacitor Banks located within Ausnet Services Dederang and Wodonga Terminal Stations.

- Transgrid and Lumea are MECs licenced by ESC to operate and maintain Supply Networks in Victoria.

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

Table 3 Transgrid and Lumea ownership of Victorian network Elements

Legal Entity	Supply Networks Owned	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**)	Deer Park Terminal Station (**DPTS**)	ESC Transmission Licence, varied on 25/09/2024, and effective from 03/10/2024	NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390)
	Line X1/X9 from Red Cliffs Terminal Station Gantry to Vic/NSW border (SWT3408, structure 59-63) and **Line 060** from Vic. Border to Ausnet Services owned tower '401' (Transgrid Tower 323)(SWT1174, structure 321 and 322) **Dederang and Wodonga Capacitor Banks**	Exempt from Transmission Licence as per Victorian Government Gazette S 376 1 December 2015 Operated as a DTSO under Victorian Government Gazette S397 11 December 2015	
Lumea Pty Limited (ACN 626 136 865) as trustee for Lumea Trust ABN 94 121 353 950 (**Lumea**)	Kiamal Terminal Station (**KMTS**)	ESC effective 25 March 2025 (due to the variation of the licence to combine Kiamal and Berrybank Supply Network licences).	
	Berrybank Terminal Station (**BBTS**) Berrybank Windfarm Terminal Station (**BBW**) Berrybank Transmission Line (**BB1/BB2**)	ESC effective 25 March 2025 (due to the variation of the licence to combine Kiamal and Berrybank Supply Network licences).	
	Plumpton Terminal Station (**PRTS**)	ESC Transmission Licence, dated 5/3/2025	

To construct, manage, operate and maintain the Supply Networks Lumea Pty Ltd (ACN 626 136 865) as trustee for Lumea Trust (ABN 94 121 353 950) (Service Recipient) and NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for the NSW Electricity Networks Operations Trust (ABN 70 250 995 390) (Service Provider) have entered into a 'COMA - Project Service Agreement' (Construction Management, Operations and Maintenance Services Agreement)(Services Agreement). Under the Services Agreements, Transgrid provides:

- Construction management services including:
  - Procurement of the following items of equipment:
    - > Equipment required to be procured by the Services Recipient under the Agreements that cannot be procured by the Services Recipient.
  - Procurement of the following works:
    - > All works required of the Service Recipient under the Agreements that cannot be procured or performed by the Services Recipient.
- Principal Contractor
  - Unless agreed otherwise, the Service Recipient appoints the Service Provider or its nominee as the principal contractor for all construction work forming part of the Connection Work under the WHS

Legislation (each as defined in a Project Agreement). The Service Provider accepts that appointment and must comply with the duties of a principal contractor. The Service Provider may appoint a third-party contractor as the principal contractor.

- The Service Provider will provide operations and maintenance services in respect of the Supply Networks as defined in the Network Services Agreements to enable the Service Recipient to perform its obligations to the Customer under the Agreements.

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 (green dot) and Lumea (red dot) are presented in Figure 1. As this figure shows, most of the supply network in question is located on land categorised as a HBRA. The exceptions are two spans of Line X9, which are in a LBRA. In this Plan, Transgrid treats these two spans as if they are in a HBRA.

Figure 1 Transgrid and Lumea's Supply Networks[1], HBRA coverage in Victoria (outside of red lined 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.

[1] Taken from http://mapshare.vic.gov.au/vicplan/, accessed 2025.

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
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 general public (open 24 hr): 1800 027 253 (02) 9620 0555

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

Bushfires present a constant threat to life, property and the environment in both rural and urban areas. This Plan focuses on bushfires risk arising from the construction and operation of Transgrid and Lumea's Supply Networks in the natural environment.

Transgrid and Lumea are committed to minimising bushfire risks as far as practicable (AFAP) across their entire transmission 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** accepted by Energy Safe Victoria that articulates Transgrid and Lumea's commitment to managing electricity safety in accordance with the Act by:
  - Performing 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 Plan.

- This Plan that articulates how Transgrid and Lumea mitigate bushfire risk arising from Transgrid and Lumea's Supply Network in accordance with the ESBMR.
- The Asset Management System (AMS) that is Transgrid and Lumea's 'ISO 55001 Asset Management System' certified management system for ensuring the systematic implementation of the requirements of this Plan.
- The Health and Safety Management System (HSMS) that is Transgrid and Lumea's 'ISO 45001 Occupational health and safety management systems — Requirements with guidance for use' for ensuring the systematic implementation processes to ensure the safety of Transgrid and Lumea's employees undertaking activities required in this Plan.

This Plan and the **ESMS** detail the control measures that will be used to minimise bushfire risks AFAP for all Transgrid and Lumea Supply Networks in Victoria.

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

The objectives of this Plan are to:

- Minimise AFAP the risk of ignition through a structured approach to bushfire management throughout the 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 personnel, including contractors, to identify, assess and mitigate bushfire danger risk when completing an activity on Transgrid and Lumea's Supply Networks.
- Achieve compliance with the Act and the ESBMR.
- 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 Plan, including how its activities will be monitored and audited.

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

The following sections describe the Transgrid and Lumea Supply Networks within the scope of this Plan 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 Transmission Licence amended by ESC (due to the Electricity System Code (Vic) being withdrawn) with an effective date of 3 October 2024. Transgrid is the MEC for this Supply Network.

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 lines and is located at 490 Christies Rd, Ravenhall, VIC 3023. The station supplies more than 100,000 Powercor customers in the areas of Sunshine, Truganina, Tarneit, Laverton North, Caroline Springs and Melton.

DPTS provides up to 3849A at 67.5kV (Reliability Level N) or 1924.5A at 57.5 kV (Reliability Level N-1) across six feeder outlets (Sunshine (SU1, SU2), Melton (MLN1, MLN2), Truganina (TNA1, TNA2)) to the Powercor network.

6.4.1.2. Description of the Land

Figure 1 shows that DPTS is located on HBRA land. Its operation interconnects with AusNet Services and Powercor.

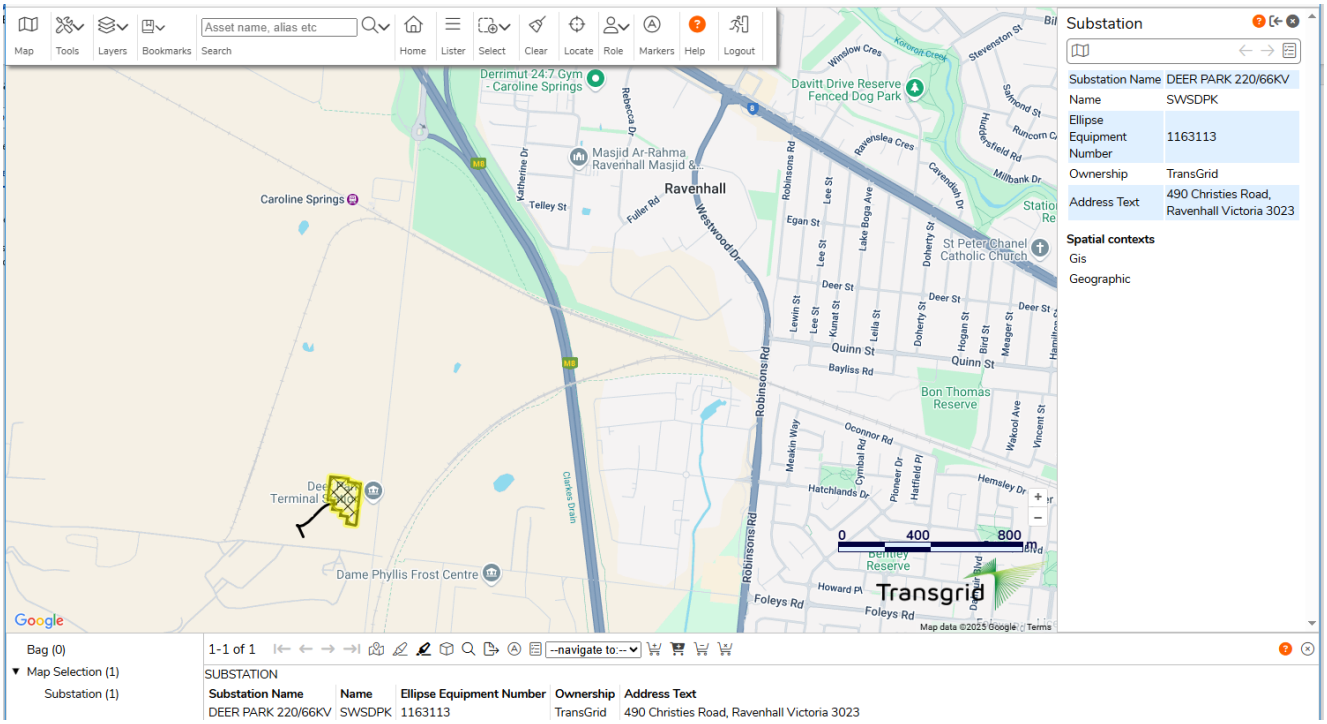
Figure 3 shows the location of the terminal station site at DPTS.

Bushfire risk mitigation at DPTS considers the site's surrounding locales including the following facilities and landscape that is at risk of impact from a bushfire:

- Open paddock, which is a bushfire hazard, surrounds Deer Park 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 the terminal station site. Both the Site Controller 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.

Figure 2 Deer Park 220kV and 66kV switchyard

Figure 3 DPTS GIS Map



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 Grid Ref: MGA (GDA202) Station number: 087031 • E830424 • N803596 • Elevation: 20 m	The highest mean maximum temperature, recorded in the month of January with a maximum recorded temperature of 29.4 ºC for the period 1941 to 2025. The lowest mean minimum temperature, recorded in the month of June was 11.9ºC 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 station's drainage design and oil containment systems requirements. Transgrid's standard control for flood risk is to keep equipment above a 1:100-year flood level. As the Stormwater Management Plan, TransGrid Deer Park, CG150475, Cardno, 14 January 2016 confirms, the design conforms to Transgrid's standard requirements.

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, resulting 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 Supply Network 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 within and surrounding the perimeter of the Terminal Station presents a threat.

6.4.1.5. Supply Network and Operational Responsibilities

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

The operational interface points at DPTS are shown in Figure 4.

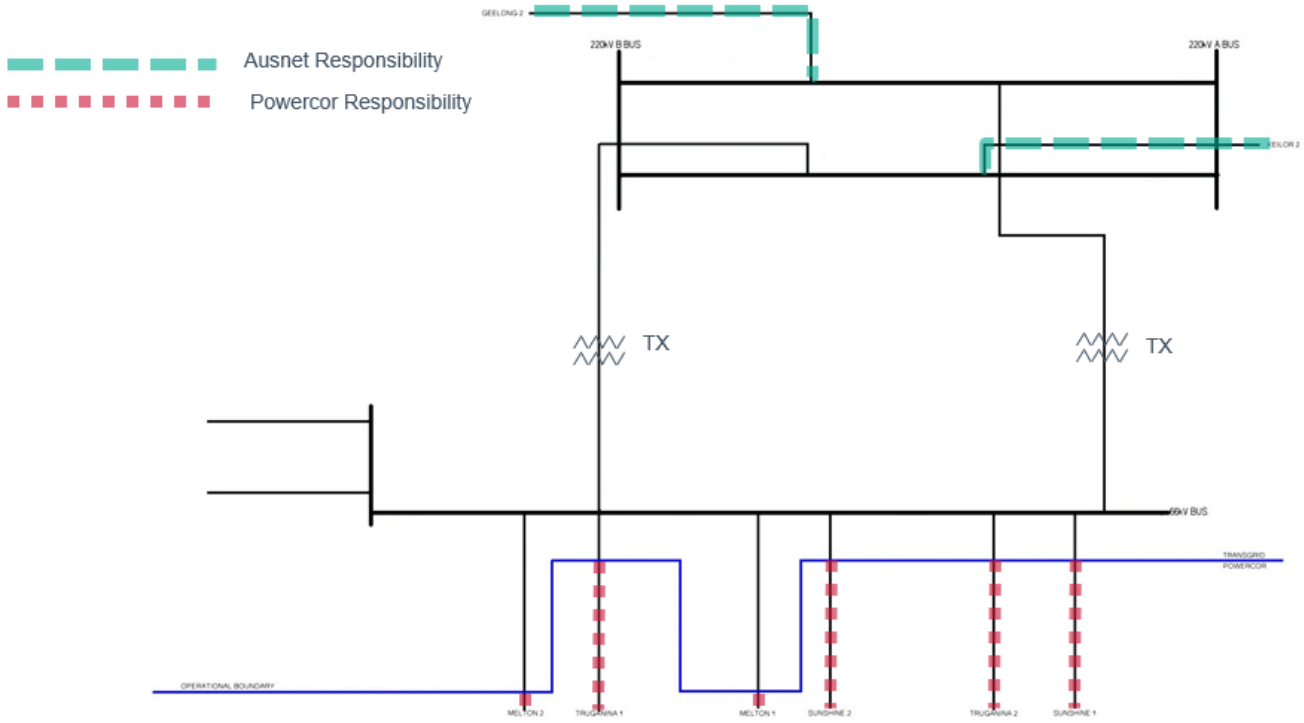
- Energisation Date: September 2017
- In-Service date: May 2018.

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

Table 7 DPTS Connected parties.

Transgrid 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)	• MLN No2 66kV droppers connect to the landing span at DPTS • TNA No1 66kV droppers connect to the landing span at DPTS • MLN No1 66kV droppers connect to the landing span at DPTS • SU No2 66kV droppers connect to the landing span at DPTS • TNA No2 66kV droppers connect to the landing span at DPTS • SU No.1 66kV droppers connect to the landing span at DPTS

Figure 4 Operational Boundary Points between Transgrid, Ausnet Services (220kV lines) and Powercor (66 kV)



- To Ausnet Services: Geelong – Deer Park 2 220kV Transmission Line where the 220kV droppers connect to the landing span at Transgrid's Deer Park 220kV Substation.
- To Powercor: The Operational boundary at DPTS shall be the circuit breaker side connections to the 66kV feeder circuit breaker bus disconnector on each of the Powercor feeders.

6.4.1.6. Referenced Documents

Table 8 lists referenced documents that are developed to be compliant with this Plan and used by Transgrid to implement site emergency management in Section 6.10 and the inspection and maintenance requirements listed in Section 6.8.

Table 8 DPTS Bushfire Controls

Information requirements	Referenced Document	Description
Emergency procedure to respond to fire incident at a Supply Network.	D2017/04096 Deer Park 220kV Substation - Emergency Response Manual	The document identifies the incident levels and the corresponding management response as per Section 6.5.1 including Table 31 and Section 6.10. For DPTS this document identifies Dame Phyllis Forest Correction Centre as a priority to be contacted, with contact details provided, when smoke from a Terminal Station fire is likely to affect the Centre. • This document is available at the terminal station and on the Wire.
Maintenance requirements to detect or prevent equipment failure.	D2020/00269 Non-Prescribed Assets Maintenance Plan	This plan is created to comply with the inspection requirements specified in Section 6.8. • This document is made available by Asset Management on the Wire.

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 3 October 2024. Lumea is the MEC for this Supply Network.

The 220kV/33kV Kiamal Terminal Station (KMTS). The address is 285A Old Kia Road, Ouyen 3490 in remote Victoria. Lumea has a 30-year contract to own and operate KMTS.

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.

SUMMARY

- Electricity Supply from Kiamal Solar Farm (Owned and operated by KSF Project Trust) is directed to the Ausnet Services Red Cliffs – Horsham 220kV line.
- Kiamal Terminal Station (KMTS) – Transmission Licence with Lumea amended by ESC effective 3 October 2024
- Energised Date: 13 December 2019
- In-Service date: 17 January 2020.
- Connection Assets (Dedicated) include:
  - 220kV air insulated switchgear (AIS) 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 (shared with terminal station).
- Terminal Station Works (Shared) include:
  - 220kV air insulated switchgear (AIS) and busbar.
  - Auxiliary Services Building (ASB) to house control, protection, metering and auxiliary supply systems (shared with the Connection Assets).

This Supply Network is critical electricity infrastructure under the *Electricity Industry Act 2000*.

6.4.2.2. Description of the Land

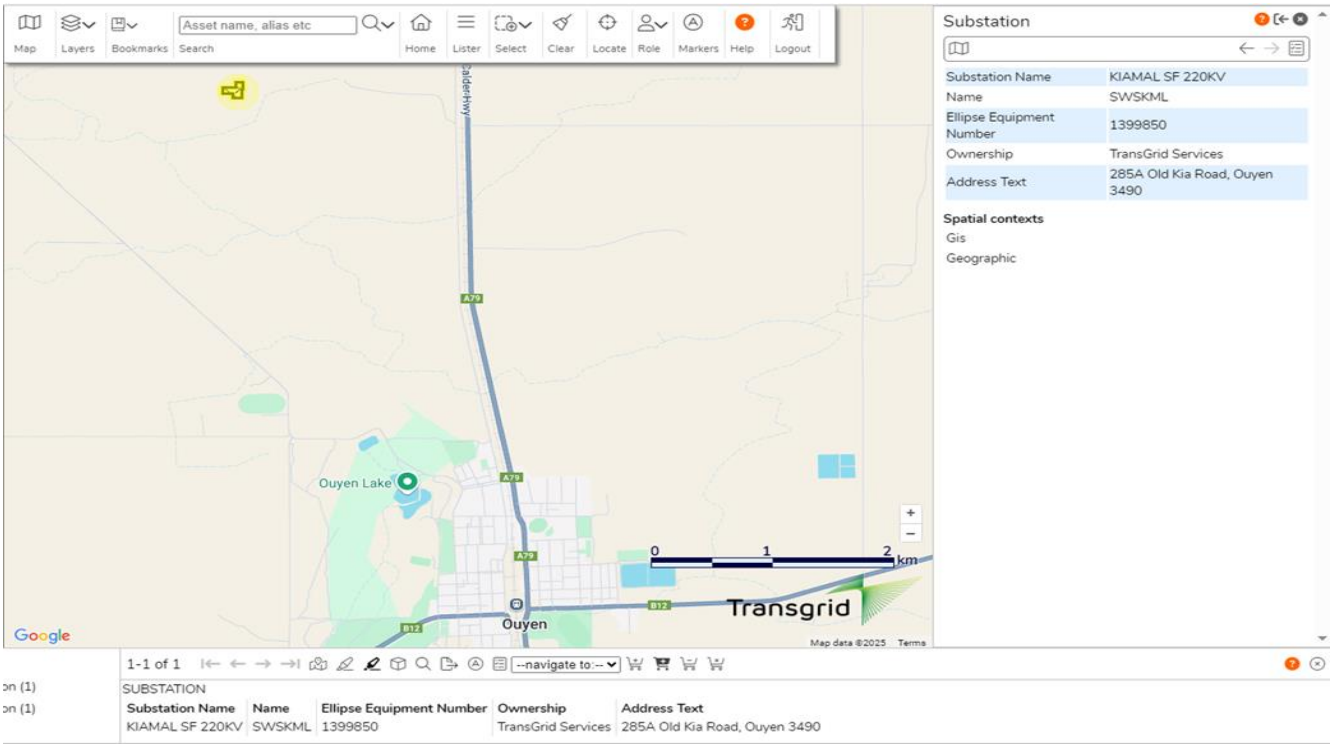
KMTS is located on a single land parcel of six hectares, of which 0.53 hectares are dedicated to the terminal station. The land parcel is a subdivision of the land bought by KSF Project Trust of 319.1 hectares.

This land is strategically selected to cut into existing 220 kV transmission lines owned by AusNet Services. The subject site was formerly used for grazing stock. 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 the generator, KSF Project Trust. Figure 6 show the operational interfaces between these connected parties.

KMTS is in a HBRA based on the spatial data provided by Country Fire Authority to Lumea's GIS system, Figure 5 shows KMTS TSS information.

Figure 5 KMTS GIS Map



6.4.2.3. Environmental Conditions

KMTS is located on a flat plane with 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. Bushfire risk is managed through a gravelled switchyard that provides clearance to the switchyard's fence. A 20 m protection zone of managed vegetation is used outside the switchyard security fence, principally to protect this site from external bushfires, but also to help prevent fires from the substation progressing. The zone also aids external site access by emergency services.

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 9.

Table 9 KMTS BOM Climate Condition

Supply Network	Source	Climatic Information
Kiamal Terminal Station	Ouyen (Post Office) Grid Ref: MGA (GDA202)(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 ºC for the period 1937 to 2025. The lowest mean minimum temperature, recorded in the month of July was 4.3ºC 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 10 lists KMTS equipment where a failure can cause a loss of control of electricity, resulting 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 Supply Network in compliance with Section 6.8.

Table 10 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 within and surrounding the perimeter of the Terminal Station presents a threat.

6.4.2.5. Supply Network and Operational Responsibilities

The operational boundaries at KMTS are provided in Figure 6. The interfaces with other MECs at KMTS are described in Table 11.

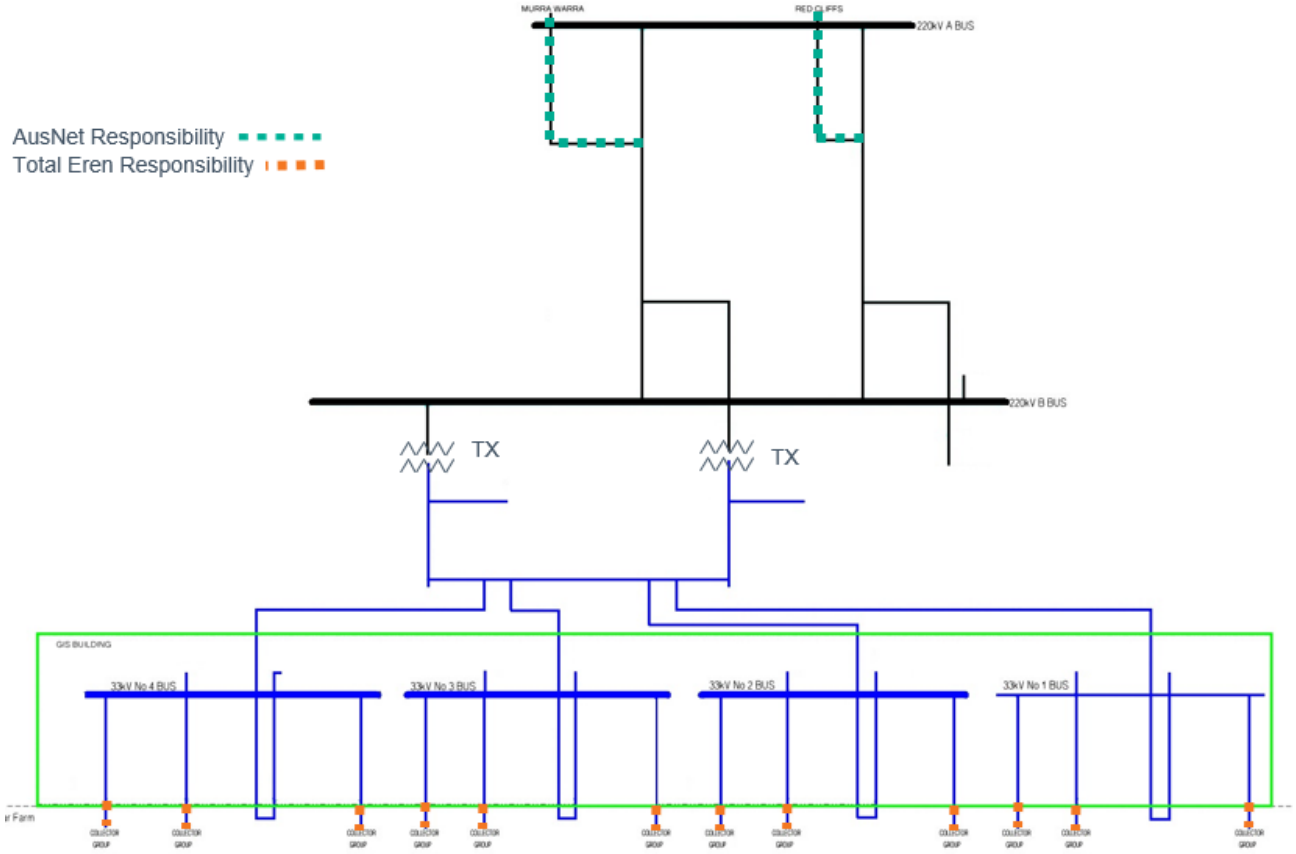
Details of contractual obligations and operational responsibilities are provided in the **ESMS** Section 5.2.

Table 11 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 6 KMTS: Operational Boundary Points between Lumea, AusNet Services (220 kV lines) and KSF Project Trust (33 kV) Load Types, As Built 28 Sep 21



6.4.2.6. Reference documents

Table 12 lists referenced documents that are developed to be compliant with this Plan and used by Lumea to implement site emergency management ins Section 6.10 and the inspection and maintenance requirements listed in Section 6.8.

Table 12 KMTS Bushfire Controls

Information requirements	Document	Description
Emergency procedure to respond to fire incident at Supply Network.	D2019/04983 Kiamal 220kV Substation - Emergency Response Manual	The document identifies the incident levels and the corresponding management response as per Section 6.5.1 including Table 31 and Section 6.10. • This document is available at the terminal station and on the Wire.
Maintenance requirements to detect or prevent equipment failure.	D2020/00269 Non-Prescribed Assets Maintenance Plan	This plan is created to comply with the inspection requirements specified in Section 6.8. • This document is made available by Asset Management on the Wire.

6.4.3. Berrybank Supply Network Information

6.4.3.1. Background

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

This 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 windfarms is 290MW. The Supply Network is made up of the following:

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

Energisation Date: 17 October 2020.

In-Service date: December 2021.

Diagrams of the operational boundaries for the Supply Network are outlined in Section 6.4.3.5.

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

Berrybank Terminal Station (BBTS)

The BBTS is connected to the existing 220kV transmission network via the transmission line that runs between Terang and Ballarat Terminal Stations.

BB1/BB2 220kV line

The 220kV transmission line connects BBTS to BBW to enable electricity to flow from the Berrybank Wind Farm to the Victorian transmission Supply Network. The structures used are of double circuit single steel pole in accordance with Lumea's design standards.

Berrybank Windfarm Terminal Station (BBW)

The transmission line terminates at a gantry, which then connects to two power transformers. The BBW is located to connect to the Berrybank Wind Farm via 33kV underground cables.

6.4.3.2. 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.

The transmission lines BB1/BB2 (7.716 km in length on a 50m easement) run 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 is carefully considered to eliminate or, where not possible, minimise bushfire risk AFAP during the design phase.

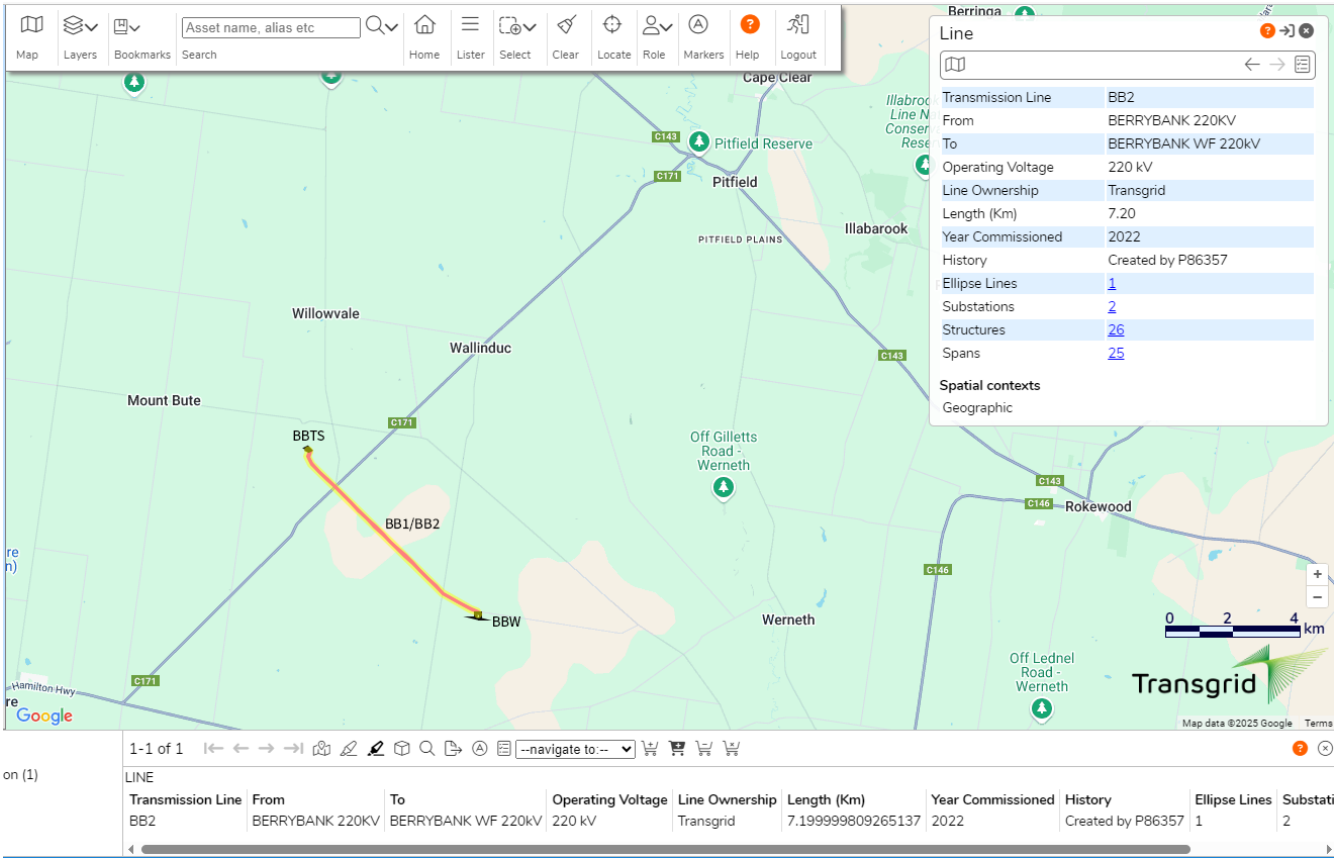
The topography of the site is generally flat with gently undulating countryside. Land use along the alignment is predominantly private property, used primarily for agriculture, with cropping, sheep and cattle grazing. This can be affected by bushfires initiated from the Supply network.

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

In its operation of BBW, Lumea interfaces with Ausnet Services , see Figure 8 and the windfarm generator, Global Power Generation, see and Figure 9.

As Figure 7 shows, BBTS, BBW and BB1/BB2 are on land classified as a HBRA, based on Country Fire Authority spatial data.

Figure 7 Berrybank GIS Map



6.4.3.3. Environmental Conditions

The Supply Network is in land surrounded by wheat and other farm crops with the transmission line subject to the movement of harvesting equipment.

Bushfire risk is managed through this accepted Plan and the **ELCMP.** Risk mitigation measures include a 20 m protection zone of managed vegetation around the BBTS and BBW security fences, principally to protect this site from external bushfires, but also to aid external site access by emergency services.

To assist with risk management, Lumea extracts climate data from Australian Government Bureau of Meteorology Climate Data Online website which is outlined in Table 13. Drainage design at BBTS and BBW meets the Lumea standard of keeping equipment above the 1:100-year flood level.

Table 13 BBTS BOM Climate Condition

Supply Network	Source	Climatic Information
Berrybank Terminal Station	Lismore (Post Office) Grid Ref: MGA (GDA202)(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 ºC for the period 1940 to 1994. The lowest mean minimum temperature, recorded in the month of July was 4.6ºC 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.

6.4.3.4. Equipment that presents a foreseeable bushfire risk

Table 14 lists Berrybank equipment where a failure can cause a loss of control of electricity, resulting 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 Supply Network in compliance with Section 6.8.

Table 14 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	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: Sulphur AAAC 61/3.75mm Aluminium Alloy 1120 overhead conductor (220kV)	Vibration dampers, insulator, conductor fitting and accessories. Total span length: 7.716km		Conductor drop Vegetation encroachment (Grow-in, blow-in or fall-in)
OPGW Type B 48 G.652 Fibre (twin)	Vibration dampers, insulator, conductor fitting and accessories		Asset Failure

Vegetation grow-in to equipment also presents a threat around the terminal station perimeter.

6.4.3.5. Supply Network and Operational Responsibilities

Figure 8 shows the operational boundaries at BBTS and BBW. Lumea also owns BB1/BB2, which connects BBW and BBTS. Table 15 provides details of the interfacing equipment.

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

Table 15 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.

Figure 8 BBTS Operational Boundary Points between Lumea and Ausnet Services

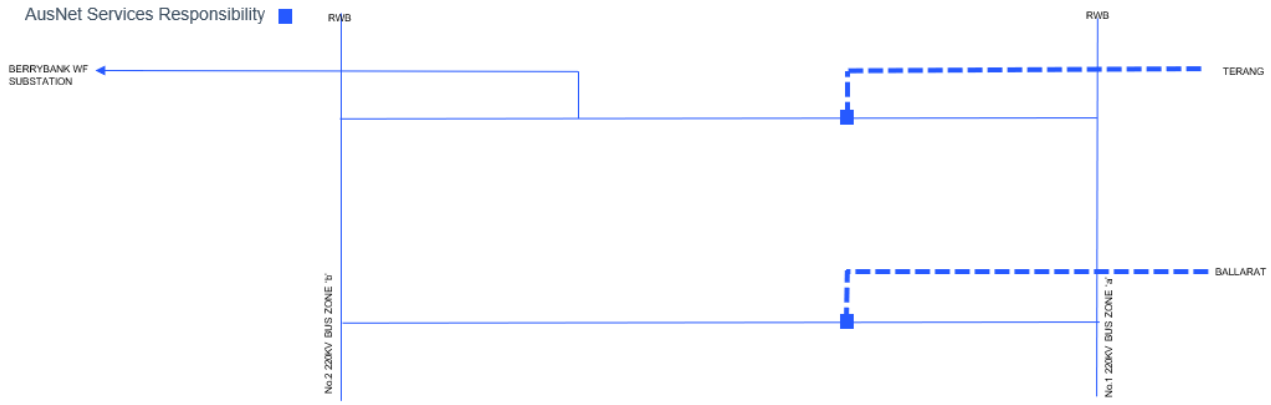
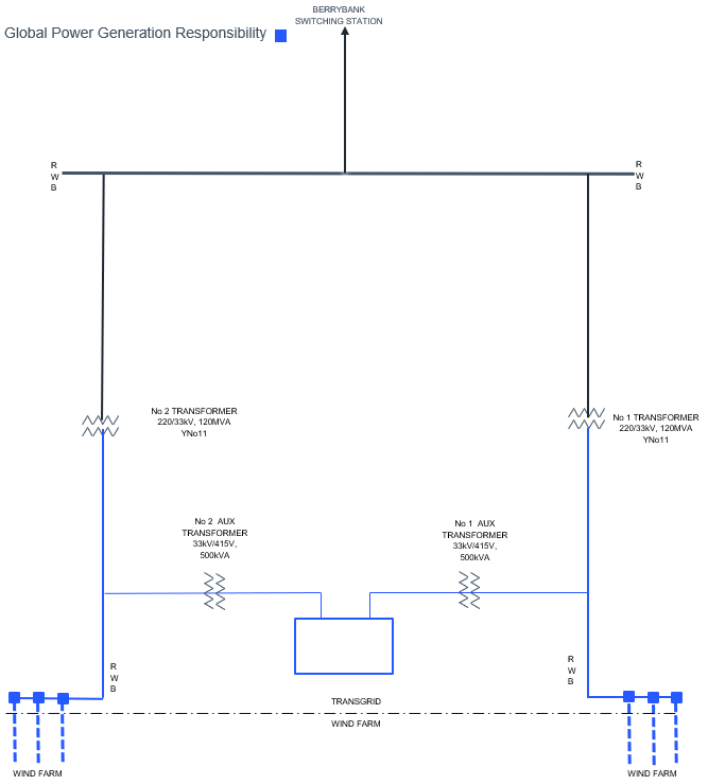


Figure 9 BBW Operational Boundary Points between Lumea and Global Power (33kV)



6.4.3.6. Referenced Documents

Table 16 lists referenced documents that are developed to be compliant with this Plan and used by Lumea to implement site emergency management in Section 6.10 and the inspection and maintenance requirements listed in Section 6.8.

Table 16 Berrybank Bushfire related documents

Information requirements	Document	Description
Emergency procedure to respond to fire incident at Supply Network.	D2020/02074 Berrybank WF 220kV Substation - Emergency Response Manual D2020/02075 Berrybank WF 220kV Switching Station- Emergency Response Manual	These documents identify the incident levels and the corresponding management response as per Section 6.5.1 including Table 31 and Section 6.10. • This document is available at the terminal station and on the Wire.
Maintenance requirements to detect or prevent equipment failure.	D2020/00269 Non-Prescribed Assets Maintenance Plan	This plan is created to comply with the inspection requirements specified in Section 6.8. • This document is made available by Asset Management on the Wire.
	D2020/00020 Electric Line Clearance Management Plan	The document describes the processes for managing vegetation near transmission lines, which aligns with the Electricity Safety (Electric Line Clearance) Regulations 2020 and Code of Practice for Electric Line Clearance. • This document is made available by Asset Management on the Wire and Transgrid and Lumea's internet sites (Public version)

6.4.4. Dederang and Wodonga Capacitor Banks

6.4.4.1. Background

Transgrid leases the No.1 and No.2 330kV 225MVAr Capacitors at Ausnet Services Dederang Terminal Station and No.2 330kV 150MVAr Capacitor at Ausnet Services Wodonga Terminal Station. Transgrid is a Declared Transmission System Operator (DTSO) for these Supply Networks and provides operation and maintenance of these capacitor banks through a 25-year contract that starts from 2002 (commissioned in 2004) and ends in 2027.

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

6.4.4.2. 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, Baranda, Vic 3691 accessible via Baranduda Drive Baranduda.

Figure 10 and Figure 11 shows GIS information of the capacitors at Ausnet Services Dederang Terminal Station and at Ausnet Services Wodonga Terminal Station respectively.

Figure 10 Location of Ausnet Services Dederang Terminal Station

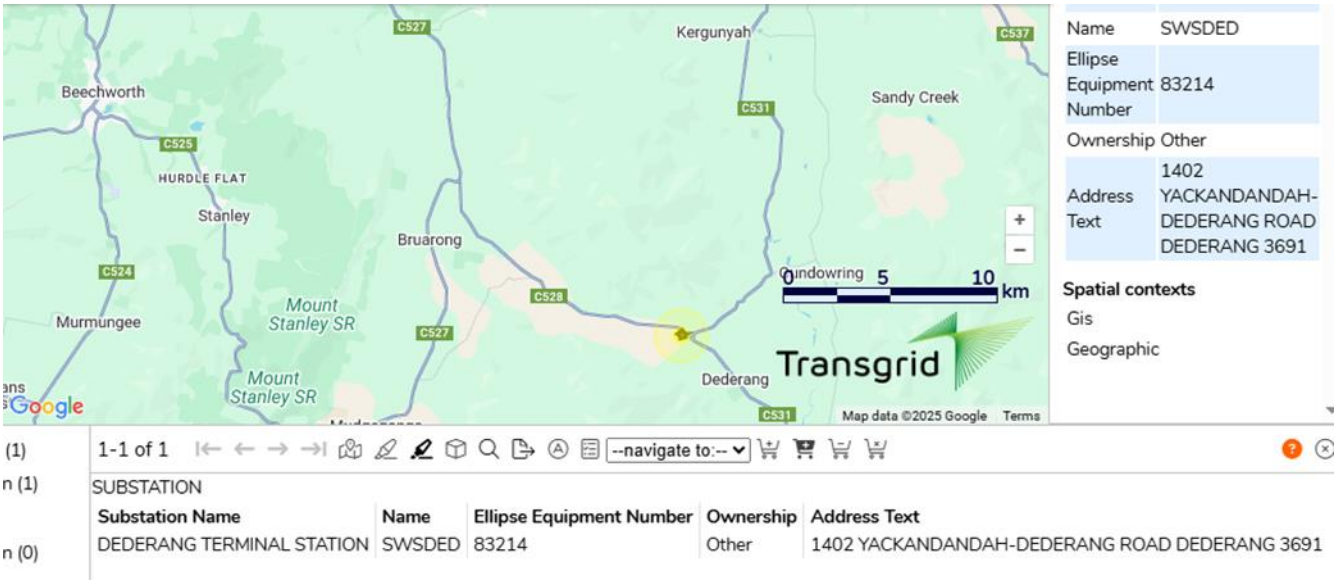
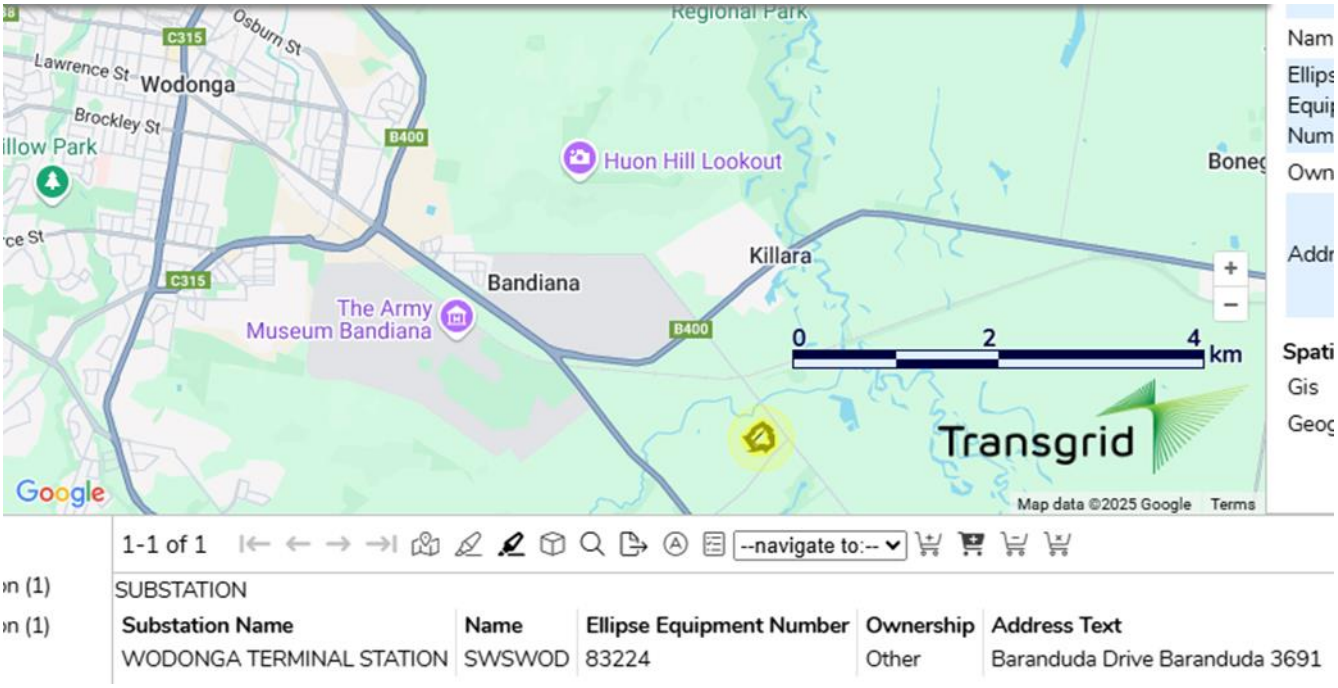


Figure 11 Location of Ausnet Services Wodonga Terminal Station



6.4.4.3. Environmental Conditions

The Supply Networks are located within terminal stations located in cleared rural farming areas. The site's location is classified as a HBRA based on Country Fire Authority fire ratings. Transgrid does not have operational responsibility for the terminal stations where the capacitors are located. Bushfire risk management of these terminal stations is the responsibility of Ausnet Services.

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

Table 17 Line 060 BOM Climate Condition

Supply Network	Source	Climatic Information
Wodonga and Dederang Capacitors	Wodonga station number: 082056 Grid Ref: MGA (GDA202)(54) • E 1032136 • N 5986531 • Elevation: 156 m	The highest mean maximum temperature, recorded in the month of January with a maximum recorded temperature of 31.8 ºC for the period 1940 to 1994. The lowest mean minimum temperature, recorded in the month of July was 3.1ºC 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 Dederang and Wodonga equipment where a failure can cause a loss of control of electricity, resulting 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 Supply Network in compliance with Section 6.8.

Table 18 Dederang and Wodonga equipment affecting bushfire risk

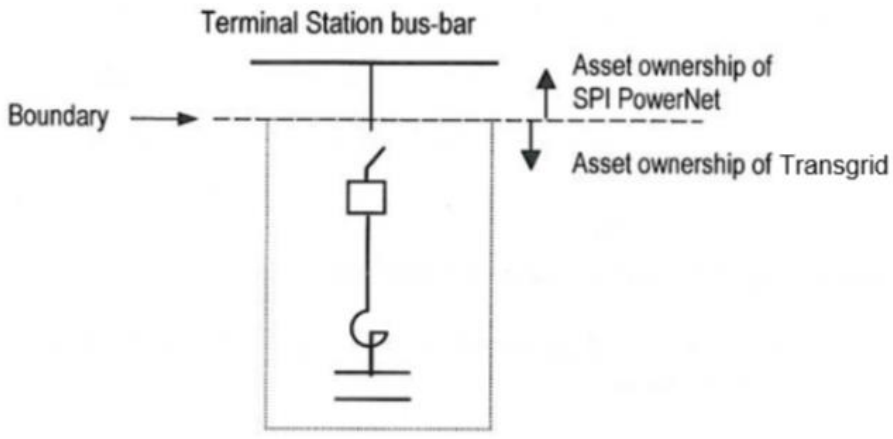
Equipment	System Voltage (kV)	Associated Equipment	Threat from Equipment and associated equipment
330kV Capacitor Bank Switch bays	330	Oil-insulated switchgear SF6 insulated switchgear	Asset Failure

6.4.4.5. Supply Network and Operational Responsibilities

The primary plant Supply Network ownership boundary is the fixed point of connection from the isolator to the respective busbar at Dederang and Wodonga terminal stations as shown in Figure 19. SPI PowerNet (now Ausnet Services) will own the busbar and the tee off busbar.

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

Figure 12 Ownership Boundaries for Wodonga and Dederang Capacitors



The following commercial arrangements are in place for the operation of Dederang and Wodonga Capacitor Bank Supply Networks:

- A deed of agreement signed on 31 May 2019 between Transgrid and AEMO to provide the network services listed in Table 19 for 25 years from the Date of Practical Completion.

Table 19 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 Sation No. 1 Bus	1 December 2002	25 Years
2	1 x 225 MVAr 330kV switched shunt capacitor bank connected to Ausnet Services Dederang Terminal Sation No. 2 Bus	1 December 2002	25 Years
3	1 x 150 MVAr 330kV switched shunt capacitor bank connected to Ausnet Services Wodonga Terminal Sation No. 2 Bus	1 December 2002	25 Years

Under these agreements, Transgrid has maintenance responsibilities for the Supply Network within the ownership boundary specified in Figure 12. Because these capacitors are entirely within the AusNet Services operational area, no operational boundary is defined.

All work, including switching activities, is to be performed in accordance with the safety rules of the organisation holding operational responsibility for the electrical apparatus. All activities at the site will comply with the Code of Practice on electrical safety for work on or near high voltage electrical apparatus, 'The Blue Book', Victoria 2017 or later versions as applicable.

The AusNet Operator will have operational control of all high voltage equipment located within the AusNet operating boundary. This includes the following Transgrid-owned equipment:

- Dederang 330kV Nos.1 and 2 Capacitors and associated bay equipment
- Wodonga 330kV No.2 Capacitor and associated bay equipment

6.4.4.6. Referenced Documents

Table 20 lists referenced documents that are developed to be compliant with this Plan and used by Transgrid to implement site emergency management and the inspection and maintenance requirements listed in Section 6.8. Site emergency management is under Ausnet Services responsibility for these Supply Networks.

Table 20 Dederang and Wodonga Documented Bushfire Controls

Information requirements	Document	Description
Maintenance requirements to detect or prevent equipment failure.	D2020/00269 Non-Prescribed Assets Maintenance Plan	This plan is created to comply with the inspection requirements specified in Section 6.8. • This document is made available by Asset Management on the Wire.

6.4.5. Line X1/X9 Red Cliffs to Buronga 220kV (Red Cliffs to border)

6.4.5.1. Background

Transgrid operates and manages under a 99-year lease Line X1/X9 Red Cliffs to Buronga Substation 220kV that has been operational since 1979. It was upgraded in November 2024 with a complete replacement that included upgrade to a dual circuit line.

This line is operated as part of the NSW Supply Network for which Transgrid is the TNSP and holder of the NSW Transmission licence. The components of this Supply Network located in Victoria is exempt from the requirement for an operating licence in Victoria as detailed in the **ESMS**.

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

6.4.5.2. Description of the Land

The line that sits inside the Victorian border is approximately 1.5 km long (out of 23.9 km). The line crosses the Murray River, runs across Kings Billabong Park and terminates at Red Cliffs Terminal Station. Line access is near Lee St and Woomera Road, or approximately 0.5 km off Red Cliffs Terminal Station, Red Cliffs, Victoria, 3496. Refer to Figure 14 for Line X1/X9 representation in TSS.

Two spans on Line X9 of this Supply Network are classified as being in a LBRA, as depicted in Figure 13. Transgrid has opted to apply the higher standard to these spans, treating them the same as spans located within a HBRA.

Figure 13 Line X1/X9 Bushfire category – red shading represents Low Bushfire Risk Area (LBRA).

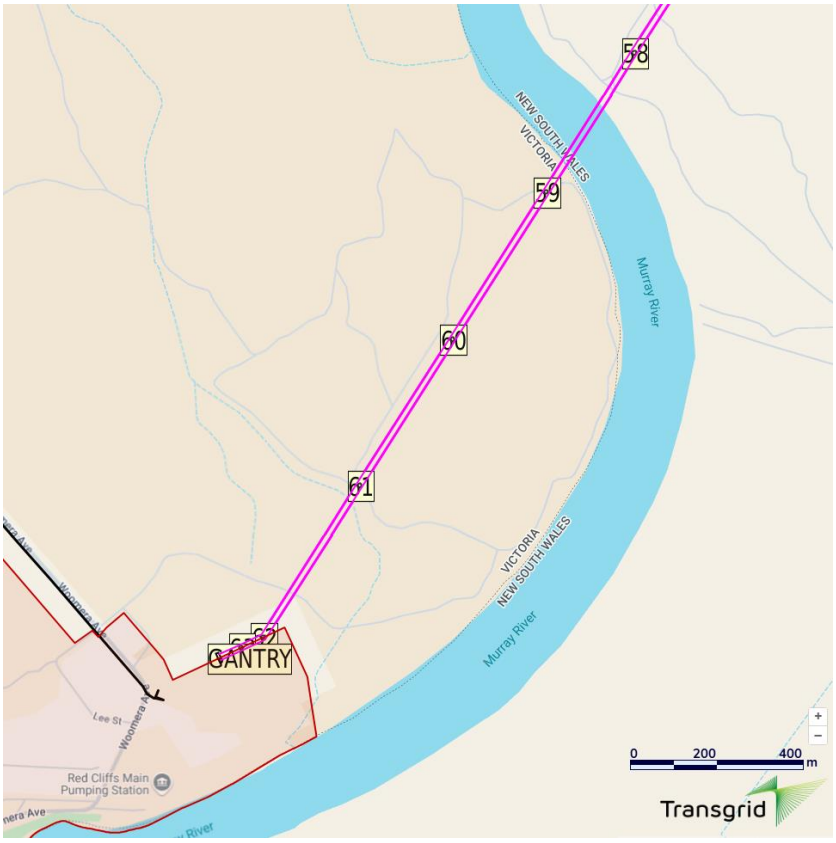
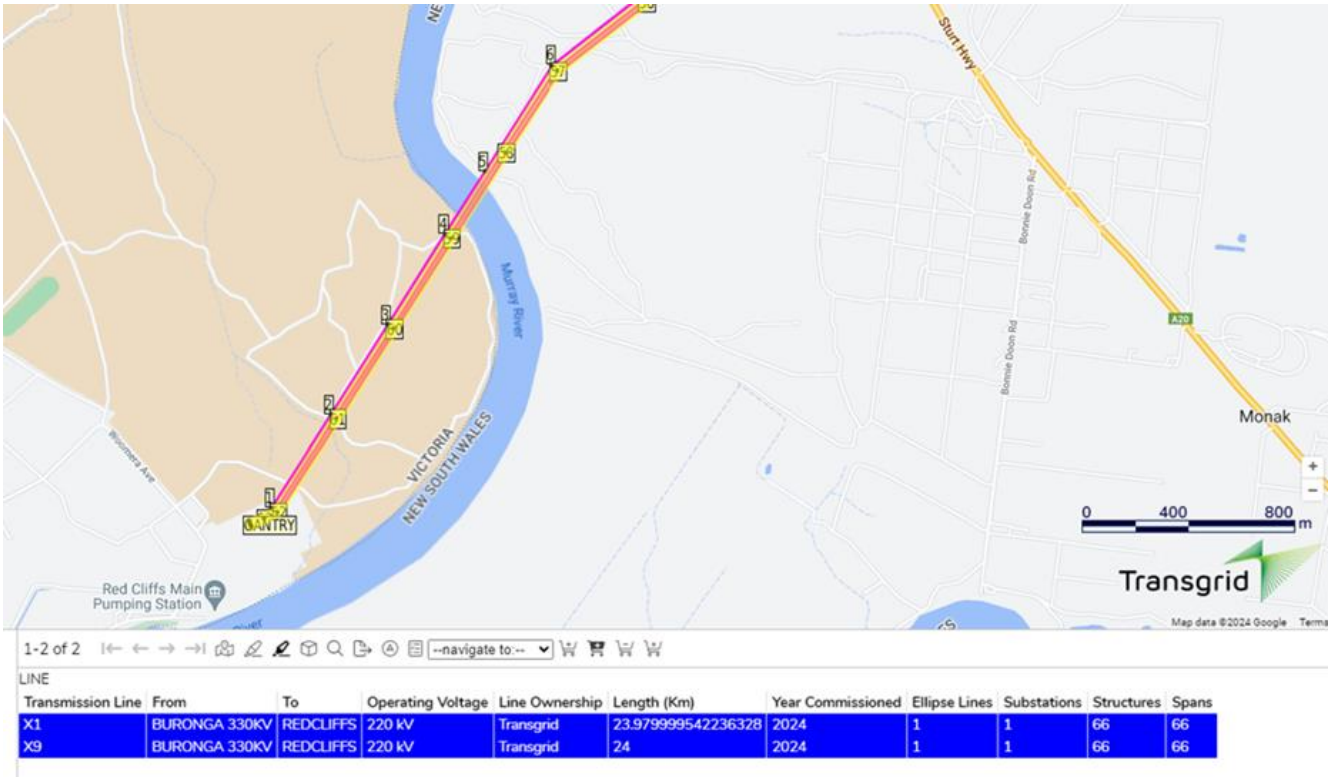


Figure 14 Line X1/X9 GIS Map



Transmission Line	From	To	Operating Voltage	Line Ownership	Length (Km)	Year Commissioned	Ellipse Lines	Substations	Structures	Spans
X1	BURONGA 330KV	REDCLIFFS	220 kV	Transgrid	23.979999542236328	2024	1	1	66	66
X9	BURONGA 330KV	REDCLIFFS	220 kV	Transgrid	24	2024	1	1	66	66

6.4.5.3. Environmental Conditions

The conductor and towers 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 National Victoria consents to Transgrid maintaining and operating the Supply Network 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 21.

Table 21 Line X1/X9 BOM Climate Condition

Supply Network	Source	Climatic Information
Line X1/X9	Post Office station number: 076077 Grid Ref: MGA (GDA202)(54) • E 610586 • N 6217236 • Elevation: 54 m	The highest mean maximum temperature, recorded in the month of February with a maximum recorded temperature of 32.7 ºC for the period 1940 to 1994. The lowest mean minimum temperature, recorded in the month of July was 4.4ºC for the period 1940 to 1994. The highest 3pm mean wind speed was 11.3 km/h for the period of 1921 to 2010.

6.4.5.4. Equipment that presents a foreseeable bushfire risk

Table 22 lists line X1/X9 equipment where a failure on the supply network can cause a loss of control of electricity, resulting 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 Supply Network in compliance with Section 6.8.

Table 22 Line X1/X9 Equipment presenting bushfire risk

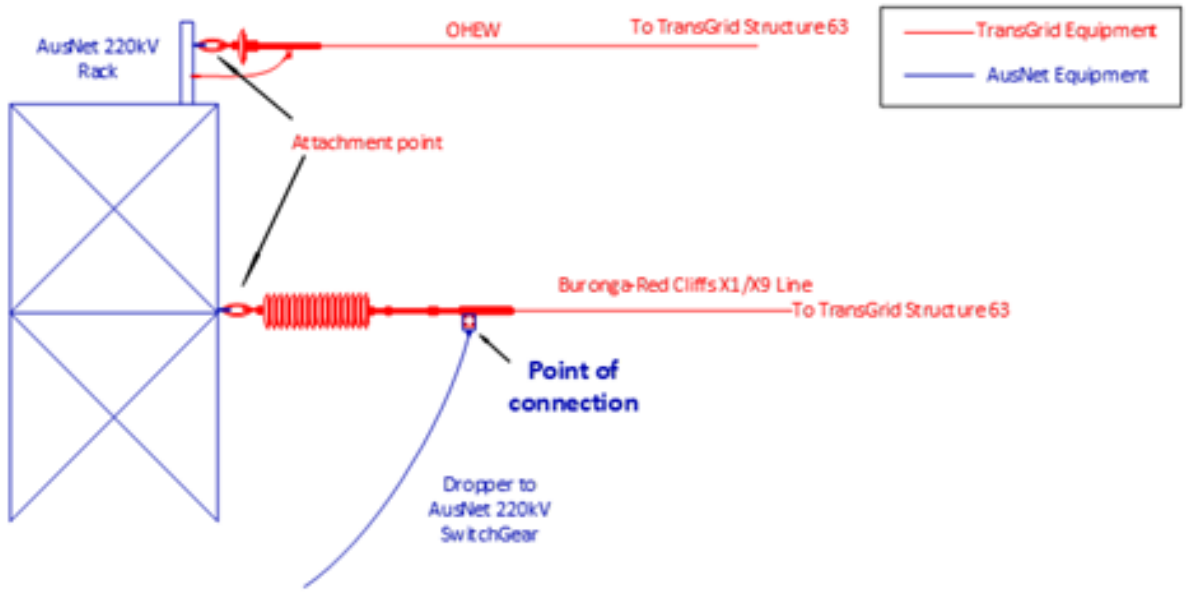
Equipment	System Voltage (kV)	Associated Equipment	Threat from Equipment and associated equipment
Dual circuit installation, twin steel pole and steel monopoles - 5 steel poles structures consisting of 8 poles in total	220	Earthing, footing, steel poles, crossarms.	• Structure failure • Earthing / Induced 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 (Grow-in, blow-in or fall-in)
Waterway crossing navigational warning signage		Footings, poles, sign panels	
Earthwire Grape ASCR (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

6.4.5.5. Supply Network and Operational Responsibilities

The operational boundaries for Line X1/X9 are illustrated in Figure 15. As per Table 3, the conductor and structures are owned by Transgrid.

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

Figure 15 Line X1/X9 Operating Boundary



6.4.5.6. Referenced Documents

Table 23 lists referenced documents that are developed to be compliant with this Plan and used by Transgrid to implement site emergency management in Section 6.10 and the inspection and maintenance requirements listed in Section 6.8.

Table 23 Line X1/X9 Bushfire referenced documents

Information requirements	Document	Description
Maintenance requirements to detect or prevent equipment failure.	D2014/16598 Maintenance Plan – Transmission Lines Assets	This plan is created to comply with the inspection requirements specified in Section 6.8. • This document is made available by Asset Management on the Wire.
	D2003/2398 Maintenance Plan – Easement and Access Tracks	This plan is created to comply with the inspection requirements specified in Section 6.8. • This document is made available by Asset Management on the Wire.
	D2020/00020 Electric Line Clearance Management Plan	The document describes the processes for managing vegetation near transmission lines, which aligns with the Electricity Safety (Electric Line Clearance) Regulations 2020 and Code of Practice for Electric Line Clearance. • This document is made available by Asset Management on the Wire and Transgrid and Lumea's internet sites (Public version)

6.4.6. Line 060 Victoria/NSW border to Wodonga (Structure 323 (323 belongs to Ausnet Services)

6.4.6.1. Background

Transgrid operates and manages under a 99-year lease Line 060 which is a 330 kV transmission line that connects Transgrid's Jindera 330/132kV Substation to the Ausnet Services network in Victoria, forming an electricity interconnector between Victoria and NSW. This line has been operational since 1980. It is operated as part of the NSW Supply Network for which Transgrid is the TNSP and NSW License holder. The Victorian section of this Supply Network is exempt from the requirement for an operating licence in Victoria as detailed in the **ESMS**.

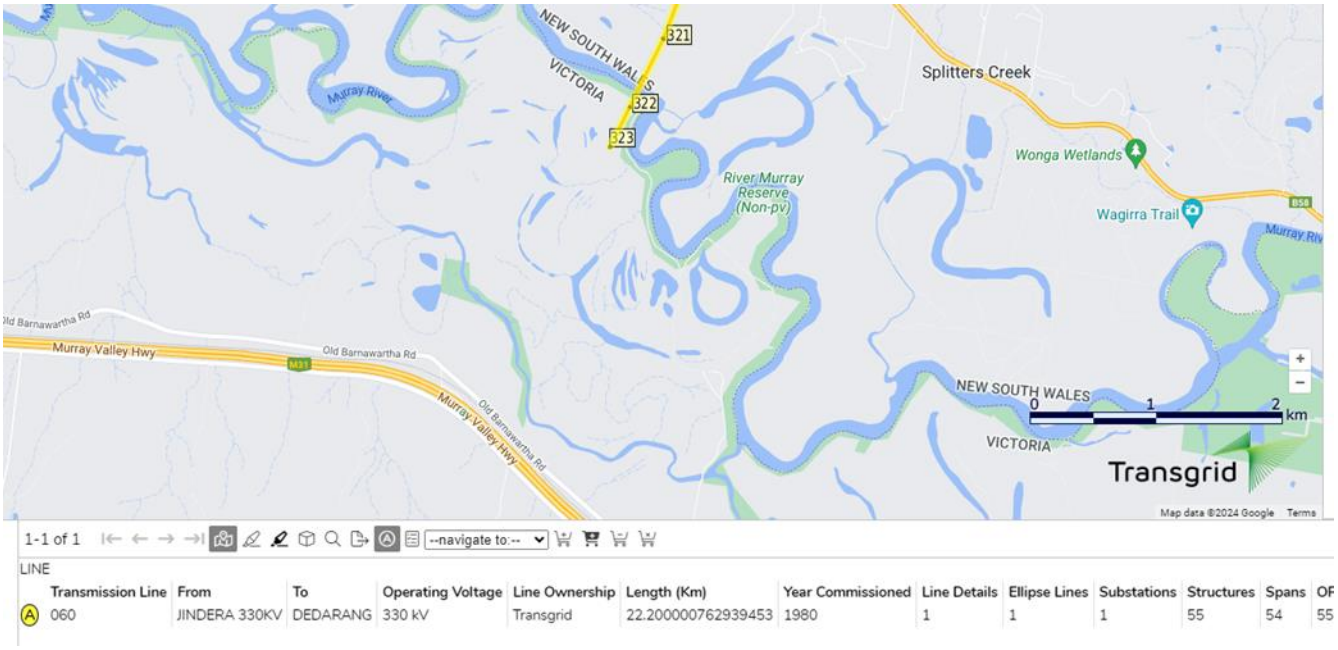
- Energisation Date: Unknown
- In-Service date: 1980.

6.4.6.2. Description of the Land

The two towers are located approximately located 20 km west of Albury or 10 km northwest of West Wodonga, accessible by the Old Barnawartha road, Barnawartha North, VIC 3691.

This Supply Network's location is classified as a HBRA, based on Country Fire Authority fire ratings and the spatial information in TSS (see Figure 14).

Figure 16 Line 060 GIS Map



Transmission Line	From	To	Operating Voltage	Line Ownership	Length (Km)	Year Commissioned	Line Details	Ellipse Lines	Substations	Structures	Spans	OF
060	JINDERA 330KV	DEDARANG	330 kV	Transgrid	22.200000762939453	1980	1	1	1	55	54	55

6.4.6.3. Environmental Conditions

Climate data presented in Table 24 is extracted from Australian Government Bureau of Meteorology Climate Data Online website.

Table 24 Line 060 BOM Climate Condition

Supply Network	Source	Climatic Information
Line 060	Wodonga station number: 082056 Grid Ref: MGA (GDA202)(54) • E 1032136 • N 5986531 Elevation: 156 m	The highest mean maximum temperature, recorded in the month of January with a maximum recorded temperature of 31.8 ºC for the period 1940 to 1994. The lowest mean minimum temperature, recorded in the month of July was 3.1ºC 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 towers are on uneven green land with low shrubs with trees growingly sparsely and managed away from the line clearance envelope.

6.4.6.4. Equipment that presents a foreseeable bushfire risk

Table 25 lists line 060 equipment where a failure can cause a loss of control of electricity in the Supply Network, resulting 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 Supply Network in compliance with Section 6.8.

Table 25 Line 060 Equipment affecting bushfire risk

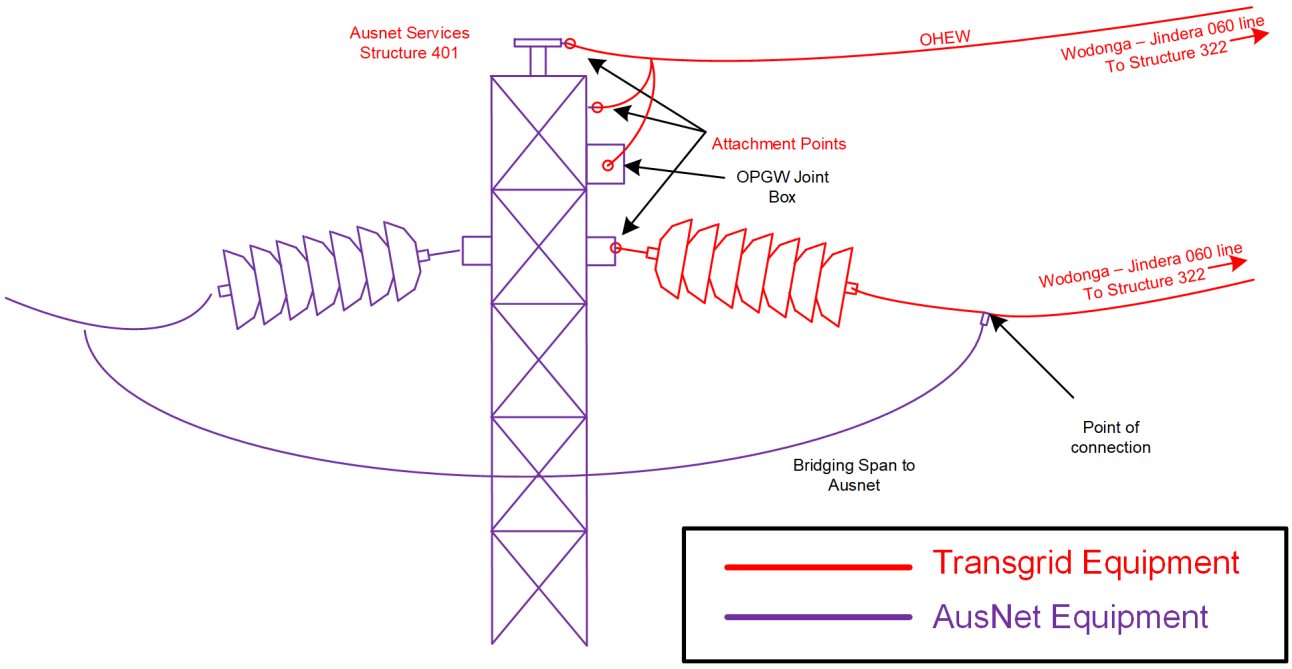
Equipment	System Voltage (kV)	Associated Equipment	Threat from Equipment and associated equipment
2 x Single circuit steel lattice tower	330	Earthing, footing, steel members	• Structure failure • Earthing / Induced Voltage
Twin Mango 54/7/3.00 ACSR Overhead Conductor	330	Vibration damper, insulator,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

6.4.6.5. Supply Network and Operational Responsibilities

In operating Line 060, Transgrid interfaces with another MEC, AusNet Services. The operational boundaries for Line 060 are illustrated in Figure 17. As per Table 3, the conductor and structures are owned by Transgrid.

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

Figure 17 Line 060 Operational Boundary



6.4.6.6. Referenced Documents

Table 26 lists referenced documents that are developed to be compliant with this Plan and used by Transgrid to implement site emergency management in Section 6.10 and the inspection and maintenance requirements listed in Section 6.8.

Table 26 Line 060 Bushfire reference documents

Information requirements	Document	Description
Maintenance requirements to detect or prevent equipment failure.	D2014/16598 Maintenance Plan – Transmission Lines Assets	This plan is created to comply with the inspection requirements specified in Section 6.8. • This document is made available by Asset Management on the Wire.

Information requirements	Document	Description
	D2003/2398 Maintenance Plan – Easement and Access Tracks	This plan is created to comply with the inspection requirements specified in Section 6.8. • This document is made available by Asset Management on the Wire.
	D2020/00020 Electric Line Clearance Management Plan	The document describes the processes for managing vegetation near transmission lines, which aligns with the Electricity Safety (Electric Line Clearance) Regulations 2020 and Code of Practice for Electric Line Clearance. • This document is made available by Asset Management on the Wire and Transgrid and Lumea's internet sites (Public version)

6.4.7. Plumpton Renewable Terminal Station (PRTS)

6.4.7.1. Background

This Supply Network is owned by Lumea and includes the Plumpton Renewable Terminal Station (PRTS) and 500kV underground cable that connects PRTS to Sydenham Terminal Station (SYTS). PRTS is part of the Melbourne Renewable Energy Hub (MREH) with a Generator/Load (BESS) of 600MW. Lumea is the MEC for this Supply Network.

The Supply Network includes:

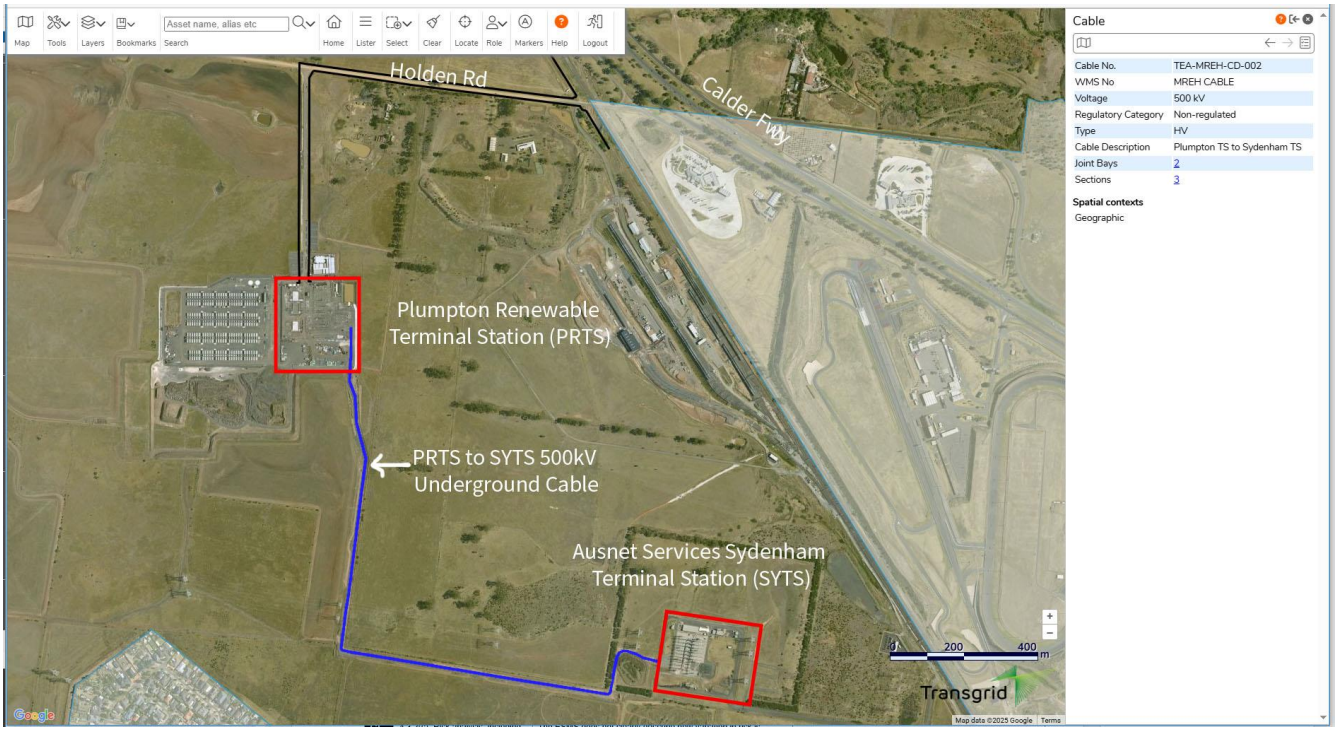
- Terminal Station.
- 500kV underground cable and termination equipment at both ends of the cable.
- Energisation Date: 8 July 2025
- In-Service date: August 2025

This Supply Network is critical electricity infrastructure under the *Electricity Industry Act 2000.*

6.4.7.2. 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. The arrangement of equipment at PRTS is provided in Figure 18.

Figure 18 PRTS Site Plan



6.4.7.3. 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, growling 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 27.

Table 27 PRTS Climate Condition

Supply Network	Source	Climatic Information
PRTS	BOM (Melbourne Airport)	The all-time highest mean maximum temperature, recorded in the month of January was 26.6 ºC for the period 1970 to 2020. The all-time lowest mean minimum temperature, recorded in the month of July was 5.5ºC for the period 1970 to 2020. The highest 3pm mean wind speed was 24.4 km/h for the period of 1970 to 2020.

6.4.7.4. Equipment that presents a foreseeable bushfire risk

Table 28 lists PRTS equipment where a failure can a cause loss of control of electricity, resulting 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 Supply Network in compliance with Section 6.8.

Table 28 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

Equipment	System Voltage (kV)	Associated Equipment	Threat from Equipment and associated equipment
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 (PYTS) (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 grow-in to equipment also presents a threat around the terminal station perimeter.

6.4.7.5. Supply Network and Operational Responsibilities

For the operation of PRTS, Lumea interfaces with:

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

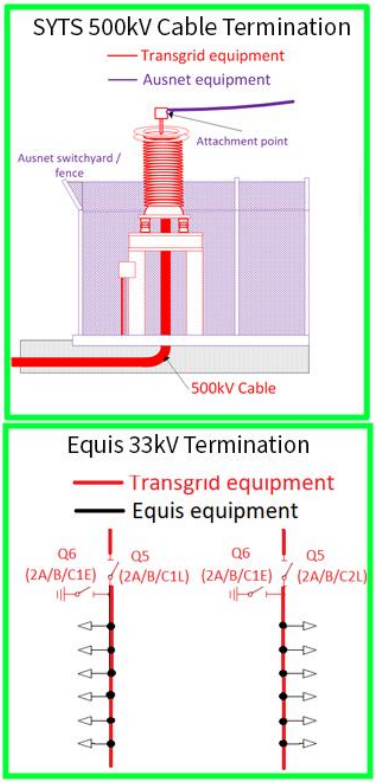
The interface points are outlined in Table 29. Details of contractual obligations and operational responsibilities are provided in the ESMS Section 5.2.

Table 29 Lumea Terminal 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.

The operational boundaries for PRTS are illustrated in Figure 19 below.

Figure 19 PRTS Operational Boundary



6.4.7.6. Referenced Documents

Table 30 lists referenced documents that are developed to be compliant with this Plan and used by Lumea to implement site emergency management in Section 6.10 and the inspection and maintenance requirements listed in Section 6.8.

Table 30 PRTS Bushfire Controls

Information requirements	Document	Description
Emergency procedure to respond to fire incident at Supply Network.	PRTS Emergency Response Manual	The document identifies the incident levels and the corresponding management response as per Section 6.5.1 including Table 31 and Section 6.10. • This document is available at the terminal station and on the Wire.
Maintenance requirements to detect or prevent equipment failure.	D2020/00269 Non-Prescribed Assets Maintenance Plan	This plan is created to comply with the inspection requirements specified in Section 6.8. • This document is made available by Asset Management on the Wire.

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 Transgrid and Lumea's bushfire risk AFAP throughout Transgrid and Lumea's Supply Network life cycle is presented in Table 31. The table describes the controls identified in

the **ESMS** and how they apply to bushfire risk, covering 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 31 Bushfire preparedness through a 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 on required to minimise bushfire risk AFAP. TRA is completed at project commencement to identify hazards and risks associated with the project scope. The designers' Safety In Design register and report should incorporate the hazards and risks identified in the TRA, which is to then be detailed for the particular project works. The project scope identifies the use of non-standard matters (e.g. design or equipment utilised). Designers are responsible for: • Identifying Supply Network specific 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	Network operational and safety risks, including high bushfire risk, is assessed when deciding the transmission line corridor/route developed during concept design of the transmission line. The Project Developer has responsibilities in following the route selection guideline with engagement from relevant internal stakeholders before the final transmission line route is approved by the Transgrid or Lumea Project Director. Furter information available D2023/01196 Route Selection Guideline.
Design	Transmission Line	Design Requirements	Technical competency standards must be demonstrated by Transgrid and Lumea engineers and Transgrid and Lumea design partners prior to design and design verification work for the Transgrid and Lumea Supply Networks. Further information is available in D2023/00824 Technical Design Competency Procedure. The transmission line engineer must comply with: • Defining the minimum clearance space (MCS). Additional information on how to determine the MCS is provided in **ELCMP**. • The MCS is used to identify vegetated areas of concern. This is documented in design drawings for a suitability qualified person to complete 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 or anytime in the

Supply Network life cycle	Supply Network component	Control Name	Specification
			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 D2023/00450 Transmission Line Design Manual – Major New Builds and D2017/12949 Transmission Line Design Manual.
Design	Terminal Station	Design Requirements	Technical competency standards must be demonstrated by Transgrid and Lumea engineers and Transgrid and Lumea design partners prior to design and design verification work for the Transgrid and Lumea Supply Networks. Further information available in D2023/00824 Technical Design Competency Procedure. Terminal station engineers must complete terminal station specific hazard assessment of the following factors 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 requirements applicable to minimising the risk of bushfire from explosive failure of oil-filled equipment: • A fire in any three-phase transformer or a single-phase transformer shall not cause a fire in an adjacent transformer unit. • A fire in any transformer or reactor shall 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 shall 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 to be of low criticality, this requirement may be assessed with Transgrid and Lumea approval of the variation. • Complete risk assessment to identify design controls when transformers or reactors that need to be totally enclosed present difficulties in firefighting. • 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

Supply Network life cycle	Supply Network component	Control Name	Specification
			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 restricted 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 cooler areas. • Heat flux calculations performed to verify the design complies with the above requirements where the transformer oil volumes 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 Transgrid and Lumea design partners prior to design and design verification work for the Transgrid and Lumea Supply Networks. Further information available in D2023/00824 Technical Design Competency Procedure. The protection system designed must satisfy the following: • Designs of feeder protection systems will be 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 2220kV 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 Hazards in Operation Register, at concept design of the Transgrid and Lumea Supply Network. Application of hierarchy of controls to record controls that must be implemented in the final design of the Transgrid and Lumea Supply Network, and the relevant 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 and Transgrid and Lumea design partners prior to design and design verification work for the Transgrid and Lumea Supply Networks. Further information available in D2023/00824 Technical Design Competency Procedure.

Supply Network life cycle	Supply Network component	Control Name	Specification
Build	All	Asset Acceptance	Project Director will provide the required asset data and information, outlined in the Transgrid and Lumea Supply Network handover checklist, in the relevant information systems. The provision of the asset 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 or 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 require day-to-day onsite management in the FRMP. • Define the Hazardous Area for the project and how this will be 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 is responsible to 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 is responsible to obtain and comply with Hot Work Permit and Section 40 Permit and: • That there are 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 shall 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 6.10.3.

Supply Network life cycle	Supply Network component	Control Name	Specification
			• Further information available in D2012/04610 Hot Work and Fire Risk Work.
Operate / Maintain	All	Post Incident Review	Transgrid and Lumea will complete a report when an asset failure 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. More detail in incident review and reporting is covered in Section 6.11.2.
Operate / Maintain	All	Threat Monitoring	The 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 the network will or has experienced a fault that requires the Network Operator to act. Operators perform actions in accordance with Section 6.10
Operate / Maintain	All	Site Emergency Response Plans (Mitigation Control)	Transgrid and Lumea identifies the steps in immediate response to fire at terminal station to limit its spread and impact at 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 identifies the steps in immediate response to fire at transmission line. Additional information on the emergency response at terminal station, switching station and transmission line in Section 6.10.1 Fire event during FDP.
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 a Transgrid and Lumea Supply Network remotely and safely. Additional information found in Section 6.9.3 Competency.
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 Fire event during FDP.
Maintain	Vegetation	Post Work Review Program	Transgrid and Lumea staff have the qualifications listed in the **ELCMP** and Section 6.9.3 Competency to complete the audit vegetation works to the standard in the **ELCMP**.
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

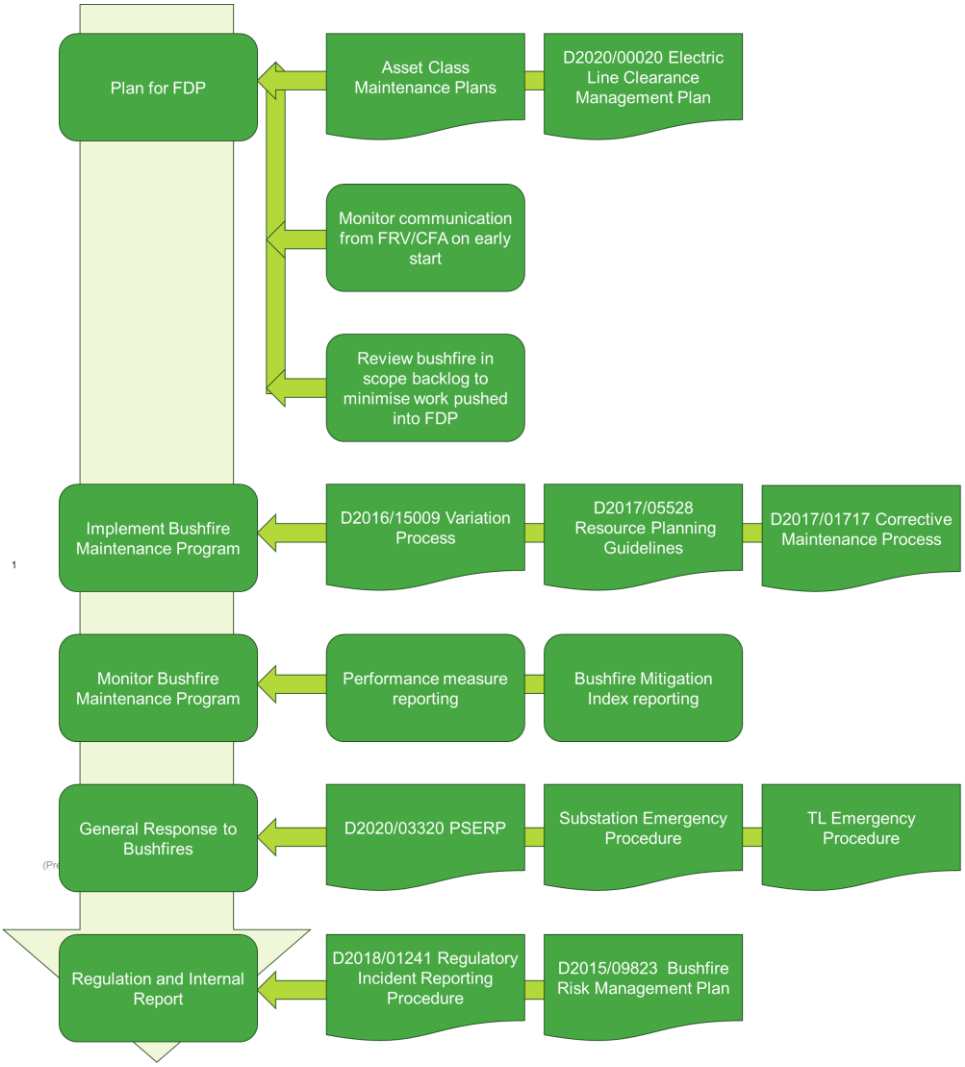
Supply Network life cycle	Supply Network component	Control Name	Specification
			members and bolts in a terminal station (e.g. gantry). The actions include the need for further investigation to establish whether additional maintenance or replacement is needed to prevent equipment failure. Additional information is provided in D2014/09504 Condition Monitoring Manual.
Maintain	Vegetation	Bushfire Preparedness Program	Undertake the following bushfire preparedness inspections: • Inspect vegetation adjacent to and within the defined minimum clearance space from the line. • 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 **ELCMP**. The competency of inspectors is covered in Section 6.9.3 Competency.
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 Competency.
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 Competency.
Maintain	Transmission Line	Bushfire Preparedness Program	Undertake the following bushfire preparedness inspections: • Visual inspection from ground level using binoculars to identify transmission and vegetation Defects that do not comply with the **ELCMP**. • Visual thermographic inspection from ground level using a handheld thermovision device. • Drone or climbing inspections on all structures to collect detailed transmission line condition data on all components.

Supply Network life cycle	Supply Network component	Control Name	Specification
			The competency of inspectors is covered in Section 6.9.3 Competency.
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 though CAMMS actions, action registers or management committees, and continuous improvement registers. More detail in incident review and reporting is covered in Section 6.11.

Bushfire risk begins when the Transgrid and Lumea Supply Network is energised and continues until it is deenergised for decommissioning.

Section 6.8 explains the bushfire prevention inspection activities carried out as part of this Plan during Supply Network inspection and maintenance activities. Details of the standard inspection and reporting practices are provided in Transgrid and Lumea's Maintenance Plans listed in Section 15.

Figure 20 Bushfire mitigation during Supply Network maintenance



6.5.2. Initiatives

There are no active initiatives targeting improved Transgrid and Lumea Supply Network 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 will 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 Network as there are no Automatic Circuit Recloser for SWER lines in the network.

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

6.8.1. Process of Development of Maintenance Plan

Transgrid's Asset Management Group is responsible for developing the maintenance strategy and associated 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.
- Emerging issues or opportunities are identified through ongoing Transgrid and Lumea Supply Network management. 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, and new asset types commissioned in the prior year.
- 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 are described in further detail in the **ELCMP**.

Inspection and maintenance tasks are scheduled with a frequency that detects Defects before they lead to asset failure. Inspections focus on identifying longer term condition-related deterioration of Transgrid and Lumea Supply Networks. Section 6.8.2 Routine Maintenance identifies the type of inspections and their frequency for the Transgrid and Lumea Supply Networks in this Plan.

Bushfire routine maintenance and non-routine maintenance work orders will be referred to as Bushfire Maintenance Program. Refer to (see Appendix A Bushfire In Scope work orders for more information). The Bushfire Maintenance Program consists of routine and non-routine maintenance activities relevant to managing bushfire risk. These 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.

Prior to each FDP, routine maintenance work orders are used to identify asset and vegetation Defects that could result in bushfires are undertaken to reduce bushfire risk from the Transgrid and Lumea Supply Networks.

6.8.2. Routine Maintenance

The routine maintenance activities that Transgrid and Lumea Supply Networks commit to complying with are listed in:

- Table 32 Transmission Line and structure inspection and maintenance activities for Transgrid and Lumea Supply Networks.

- Table 33 Transmission Line Easement inspection and maintenance activities .
- Table 34 Terminal Station inspection and maintenance activities .
- Table 35 Network Property inspection and maintenance activities risk.

To implement these, they are applied as mandatory requirements in the development of the following referenced documents: D2020/00269 Non-Prescribed Assets Maintenance Plan, except for Line X1/X9 and Line 060 where the above are applied as mandatory requirements in the D2014/16598 Maintenance Plan – Transmission Line Assets and the D2003/2398 Maintenance Plan – Easement and Access Tracks.

The above asset maintenance plans are followed by Transgrid and Lumea's Delivery group in delivering inspection and maintenance activities required under this Plan.

Appendix A identifies the works which manage bushfire risk for the Transgrid and Lumea Supply Networks.

Transgrid and Lumea treat all Supply Networks in this Plan as if they are in an HBRA, – including the two spans of Line X1/X9 that are in a LBRA. All Bushfire Maintenance Program inspections have activities at intervals not exceeding 37 months from the date of the previous inspection in compliance with the ESBMR.

Transmission Line and Structure inspections

The terms Transmission Line Technician and Transmission Line Inspector are interchangeable within the ESMS, **VBMP**, and **ELCMP.** The competence requirements for a Transmission Line Inspector are defined in the **VBMP.**

Table 32 Transmission Line and structure inspection and maintenance activities for Transgrid and Lumea Supply Networks

Maintenance 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. Inspection undertaken from ground level of transmission line and structure 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 Aerial inspection from helicopter on the Transgrid and Lumea Supply Network to identify and rectify Defects on the transmission line and structure condition prior to the commencement of the FDP to identify transmission line Defects that will result in failure before or during the FDP.	Transmission Line Technician / Lineworker (Transmission) in accordance with Section 6.9.3 Competency	Annually, prior to commencement of the FDP

Transmission Line Easement inspections

Table 33 Transmission Line Easement inspection and maintenance activities for Transgrid and Lumea Supply Networks

Maintenance 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. Inspection undertaken from ground level of the Transgrid and Lumea Supply Network utilising measurement tools and binoculars, as required, to: • Measure the vegetation clearance from the Minimum Clearance Space defined in the **ELCMP**. • Identify and remove vegetation that violates the Minimum Clearance Space • Assess trees that could fall into the Minimum Clearance Space before the next planned inspection. • Create work orders to rectify any Defects identified from the above inspections. or Aerial inspection from fixed-wing aircraft using laser imaging, detection and ranging (LiDAR) of the Transgrid and Lumea Supply Network to: • Measure the vegetation clearance from the Minimum Clearance Space defined in the **ELCMP**. • Identify and remove vegetation that violates the Minimum Clearance Space • Assess trees that could fall into the Minimum Clearance Space before the next planned inspection. • Create work orders to rectify any Defects identified from the above inspections.	Easement Assessment Worker / Easement Assessor Worker And Suitably Qualified Arborist in accordance with Section 6.9.3 Competency and **ELCMP**	Annually, prior to commencement of the FDP

Terminal Station/Switching Station inspections

Table 34 Terminal Station inspection and maintenance activities for Transgrid and Lumea Supply Networks

Maintenance description	Resource / Competency	Frequency
Transgrid and Lumea Supply Network inspection undertaken within terminal stations from ground level to visually inspect equipment in the switchyard to assess condition of equipment including circuit breakers, transformers and power cables above ground.	Substation Technician / Substation Electrician Fitter (Terminal and Zone Substations) in accordance with Section 6.9.3 Competency	At intervals of no more than six months, coinciding with the annual inspections, prior to commencement of the FDP.
Transgrid and Lumea Supply Network inspection undertaken within and around terminal stations from ground level 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.		At intervals of no more than 12 months, to be scheduled between 1 June and 30 June, prior to commencement of the FDP.

Network Property inspections

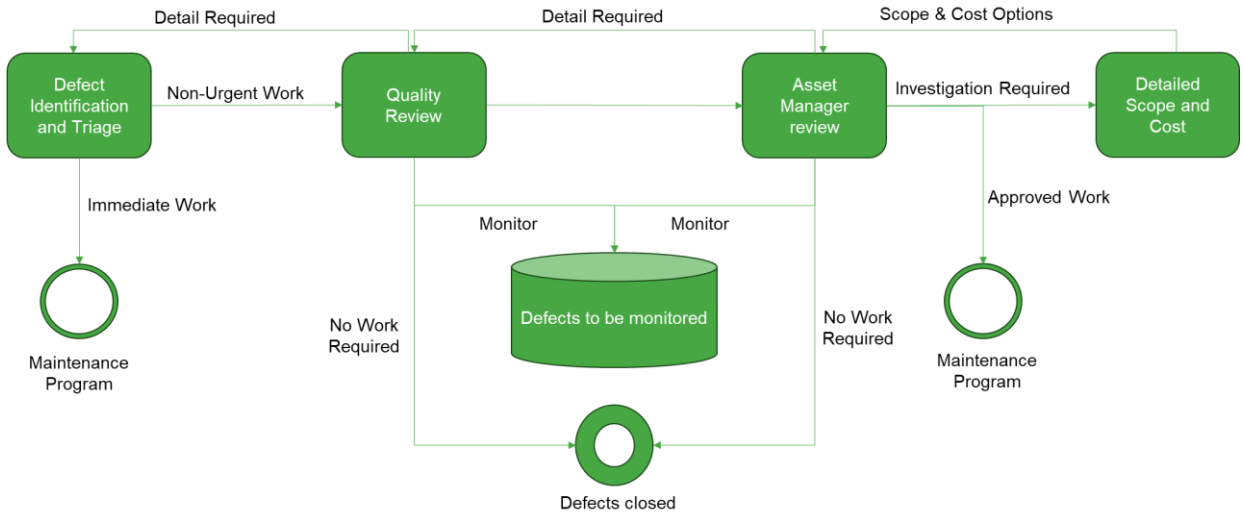
Table 35 Network Property inspection and maintenance activities for Transgrid and Lumea Supply Networks

Maintenance description	Resource / Competency	Frequency
Transgrid and Lumea Supply Network 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 Technician / Asset Inspector And Substation Electrician Fitter (Terminal and Zone Substations) in accordance with Section 6.9.3 Competency	As defined in AS 1851
Transgrid and Lumea Supply Network inspection undertaken within and around terminal stations at ground level to visually identify vegetation within asset protection zone or buffer zone that requires management to minimise the bushfire fuel loading in the zone through cutting, mowing, or slashing of vegetation.		Annually, prior to commencement of the FDP but no earlier than three months prior to the start of FDP.
Transgrid and Lumea Supply Network inspection undertaken within and around terminal stations at ground level to visually inspect building gutters and removal of any vegetation and other flammable material.		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

Bushfire risk from non-routine maintenance work is managed in accordance with the D2017/01717 Corrective Maintenance Process. The high-level process map of the corrective maintenance is provided in Figure 21. This process describes how Defects are rectified when identified during routine inspection and maintenance.

Figure 21 Corrective Maintenance Process – High Level Process Map



Transgrid and Lumea's process for non-routine maintenance is to:

- Allocate the responsibility and actions required by relevant business groups so the Defects do not result in asset failure or fire ignition.
- Triage Defects by:
  - Assessing the Defects immediate risk, and
  - Assign a priority on the urgency of rectification according to the codes in Table 36 Priority Codes. For example, Defects requiring immediate work are given a priority code of 1 to 3.
- Perform a quality desktop review of Defect records in EAM to validate:
  - The proposed work scope and estimated cost.
  - That the priority codes assigned to the Defects comply with the Asset Maintenance Plan.
- The Asset Manager reviews the Defect and issues a work order for completion of the works in compliance with this Plan.
- Monitoring of Defects occurs during future routine maintenance activities where immediate rectification is not required in accordance with this Plan.
- Work completion is undertaken by internal or external maintenance staff with active and current qualifications in the WSAT.

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 an asset based on the asset's 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 will have planning dates aligned with the requirements presented in Section 6.8.2 Routine Maintenance 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.

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 AIM system input their results directly. Those without system access provide Transgrid and Lumea with the results for uploading into AIM 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 36 and comply with Asset Maintenance Plan.

Table 36 Priority Codes

Priority Level	Response Priority	Application of Priority to work order
Level P1	Requires immediate attention and within 24 hours	Defect to be actioned within 24 hours of work order creation.
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.

Priority Level	Response Priority	Application of Priority to work order
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 Defect will 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

Any anticipated variation to a bushfire maintenance work order for the Transgrid and Lumea Supply Networks must have a variation request submitted by maintenance staff before the work order is overdue. Variations are applicable to and 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 Asset Manager reviews the variance request for compliance with this Plan 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 personnel working on Transgrid and Lumea's Supply Network are competent, and trained in the courses approved by Energy Safe Victoria (Regulation reference 8(j) and 8(k))

6.9.1. Responsibilities of personnel in mitigating bushfire risk

Table 37 provides a list of the managerial and supervisory roles and business groups with responsibility for mitigating bushfire risk in Transgrid and Lumea's Supply Network. Detailed Field Worker roles are provided in Section 6.9.3.1.

Table 37 Roles and responsibilities of Personnel

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 Supply Networks. They perform this with the assistance of Asset Strategists and Engineers reporting to them with competency in Transgrid and Lumea 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 equipment of the Transgrid and Lumea Supply Networks in the EAM. • Producing inspection scripts to enable the collection of condition data on 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: • Terminal station asset specific Emergency Response Plan. • Asset maintenance work instructions
General Manager of Health Safety and Environment / 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.
Strategic Asset Management Manager / Network	Responsible for: • Development and delivery of the Electricity Safety Management System in compliance with *AS 5577*, the Act and *Regulation*. • Coordinating internal and external audit activities related to this safety management systems. • Ensuring that actions that arise because of system audits are recorded in the CAMMS and are actioned. • Maintaining the currency of the following documents: - ESMS. - VBMP. - ELCMP.
Operations / Delivery	Responsible for ensuring the security and reliability of Transgrid and Lumea's Supply Networks in accordance with the *National Electricity Rules*. The group: • Determines operating policy and strategies.

Transgrid and Lumea Roles / Business Unit	Responsibilities
	• Creates operating manuals for the network. • Operates the system 24 hours a day. • Develops, issues and coordinates switching plans to open/close circuits in the Transgrid and Lumea Supply Networks. • Determines when to escalate of 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 the Transgrid and Lumea Supply Networks. • Monitors and acts on the network during emergencies. Operations employees liaise with AEMO, Distributors, Generators and other Transmission Network Service Providers to ensure close co-ordination of operating activities. The group is also responsible for: • Outage planning and coordination. • AEMO liaison. • Customer liaison. • Long-term project co-ordination. • Operating diagrams and TheOS administration.
Asset Monitoring Centre Manager / Delivery	Responsible for the short-term management of Transgrid and Lumea Supply Networks. This includes: • Creating Defect bushfire work orders that are to be completed within three months. • Instigating and reporting on asset failure, incidents and emergencies that arise on Transgrid and Lumea's operational 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 events in 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 asset 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.

Transgrid and Lumea Roles / Business Unit	Responsibilities
First Response Contractor	Responsible for providing first response services for unplanned events at Transgrid and Lumea Supply Networks, 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

Personnel, including Transgrid and Lumea staff, authorised Delivery Partners, contractors and subcontractors associated with the management of Transgrid and Lumea Supply Networks are appropriately trained and authorised to ensure the safe and effective performance of their respective roles. Personnel 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 an online WSAT system that ensures work approvals and access to areas are only granted to authorised and competent persons. The WSAT system:

- Provides a unified view of the status of authorisations and security access.
- Integrates for Terminal Station access with external organisations (ESI companies, direct customers, and contractor organisations) via a secured portal that captures authorisations, and training recognition.
- Integrates with the EAM system to ensure competencies are up to date when work is assigned on a Work Order.
- Monitors staff and contractor authorisations, and compliance with *Electricity Safety (General) Regulations 2019*.

ESV approved training requirements for field workers:

- All workers conducting work must be trained and hold a qualification in accordance with Table 38. This includes ESV approved Vegetation Management Work training.

Field worker competence is managed through the following processes:

- Personnel roles are determined through an assessment of the type of work the worker performs and the environment where the work is undertaken.
- A training needs analysis is used to identify training requirements specific to designated roles.
- Training needs analysis for personnel roles are mapped to the requirements of the Blue Book,
- Personnel are required to be deemed competent in training requirements required to perform work under the Blue Book.
- The Transgrid and Lumea WSAT system manages authorisation to work by providing authorisation when personnel are deemed and recorded as competent to all training requirements for the assigned role.
- Personnel are responsible for uploading evidence of training compliance through the WSAT system, which maintains a record of compliance status and provides the relevant authorisation once evidence on record satisfies competence for all training requirements.

- Authorised personnel are issued an access card for specific worksites in line with their level of access authorisation.
- Personnel compliance with all training requirements for the assigned roles is available on a mobile application for the purpose of monitoring, reviewing and verifying the status of competencies.

Transgrid and Lumea maintain representation on the Blue Book committee to assess whether any changes or updates may affect training requirements that relate to compliance with the Blue Book.

Transgrid and Lumea perform an annual review of training requirements. This includes any changes to training requirements driven by changes to the Blue Book.

Updates identified in the above processes are applied to Transgrid and Lumea's training requirements and managed in the WSAT system.

The WSAT ensures Transgrid and Lumea staff and authorised contractors are competent prior to completing works on Transgrid and Lumea Supply Networks, complying with competency and training requirements in Victorian legislation. Contractors are required to become authorised through the online WSAT in line with the training requirements outlined in the **SWHVA**.

Engagement contracts relating to the Transgrid and Lumea Supply Network include specific clauses to ensure the competency of contract staff is equivalent to the competency of Transgrid and Lumea personnel. Authorised contractors are supplied with an access card to ensure that only authorised personnel have access to the Transgrid and Lumea Supply Network – Terminal Station/Switching Station.

6.9.3. Competency

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 electric line clearance and vegetation management (as detailed in section 5.12.2.).
- Personnel details and their qualifications. Contractors are responsible for maintaining the currency of staff details and their qualifications, which Transgrid and Lumea can and do audit at any time.
- Processes for managing training records (initial and refresher).
- Induction and authorisation processes for all new Electric Line Clearance personnel.
- Authorisation details of staff, including contract staff.
- Contractors are responsible for monitoring skill expiry dates. WSAT will send notifications to ensure skills are updated before contract staff work for Transgrid and Lumea. Skills training updates must be provided by a Registered Training Organisation or internally by Transgrid and Lumea.
- Victorian Line Worker License.

The online WSAT system provides for controlled access in compliance with:

- *Code Of Practice On Electrical Safety For Work On Or Near High Voltage Electrical Apparatus* (Blue Book)
- Transgrid and Lumea (Network Operator) authorisation and access requirements.

- Requirements defined in the **ESMS**.
- The requirements for authorising personnel to work in Victoria on Terminal Stations and transmission lines, see D2016/11314 Authorisation to Work.

Table 38 shows Transgrid and Lumea's mandatory qualifications and training for the competencies relevant to bushfire risk mitigation, which also apply to the routine maintenance activities in Section 6.8.2. This includes holding a certificate issued by a registered training organisation for the Mandatory requirements listed.

These field worker competencies are managed though the processes described in the training requirements in Section 6.9.2.

Table 38 Skills and Training Requirements

Role	Qualification
Lineworker (Transmission)	UET30521 - Certificate III in ESI Power systems transmission overhead. The training for this course is provided by Transgrid and Lumea.
	CPCWHS1001 Prepare to work safely in the construction industry.
	And other periodical training identified during the annual training requirements review as per Section 6.9.2.
	Mandatory Licences
	High Risk Work Licence - Boom-type Elevating Work Platform (WP)
	High Risk Work Licence – Rigging
	Lineworker Licence – Transmission
	And other periodical training identified during the annual training requirements review as per Section 6.9.2.
Substation Electrician / Fitter (Terminal and Zone Substations)	UEE30820 Certificate III in Electrotechnology Electrician
	CPCWHS1001 Prepare to work safely in the construction industry.
	UETDREL005 - Work safely in the vicinity of live electrical apparatus.
	And other periodical training identified during the annual training requirements review as per Section 6.9.2.
Vegetation Roles	
Easement Assessor Worker (can be referred further in Appendix E in D2020/0020 Electric Line Clearance Management Plan	UET20321 Certificate II in ESI - Powerline Vegetation Control (Mandatory ESV approved training)
	Elective units
	AHCPCM204 Recognise plants
	CPCWHS1001 Prepare to work safely in the construction industry.
	And other periodical training identified during the annual training requirements review as per Section 6.9.2.
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.

Supervisors use the WSAT system to continually monitor staff competency to perform work:

- For Transgrid and Lumea staff, the Works Leader monitors the performance of Transgrid and Lumea staff on each activity. In addition, Transgrid and Lumea's Human Resources Information System is used to maintain performance and development records for each staff member.
- For Contractors, staff performance is monitored both by a contract staff supervisor as well as the Transgrid or 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)
  - Critical Incident Management (level 1)
  - Management of a HV Interconnected Network (level 2)
  - Critical Incident Management (level 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.

Leadership and all staff performing an assigned role (including management and support roles that sit outside field worker roles) are required to have following capabilities:

- Behavioural - Organisation-wide capabilities which document the standard for common business skills.
- Delivery - Capability required to deliver in accordance with Transgrid and Lumea's operating processes and procedures.
- Technical - Specialist capabilities, specific to an individual business unit that are required in addition to the delivery capabilities to deliver on our commitments.

Individual competencies in demonstrating the above capabilities are monitored and managed through half and full year reviews within Human Resources Information System. Targeted learning and development activities are assigned to the individual as required to maintain and improve competencies.

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 a registered engineer.

Capabilities that require specific engineering competence to meet the required capabilities are prescribed in the framework shown in Figure 22. This framework requires:

- The details of what Engineering Services must be verified by a technically competent person.
- Technical competency standards for personnel involved in the design of Transgrid and Lumea 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 39 and detailed in D2023/00844 Technical Design Competency Procedure.

Figure 22 Technical Authority Framework

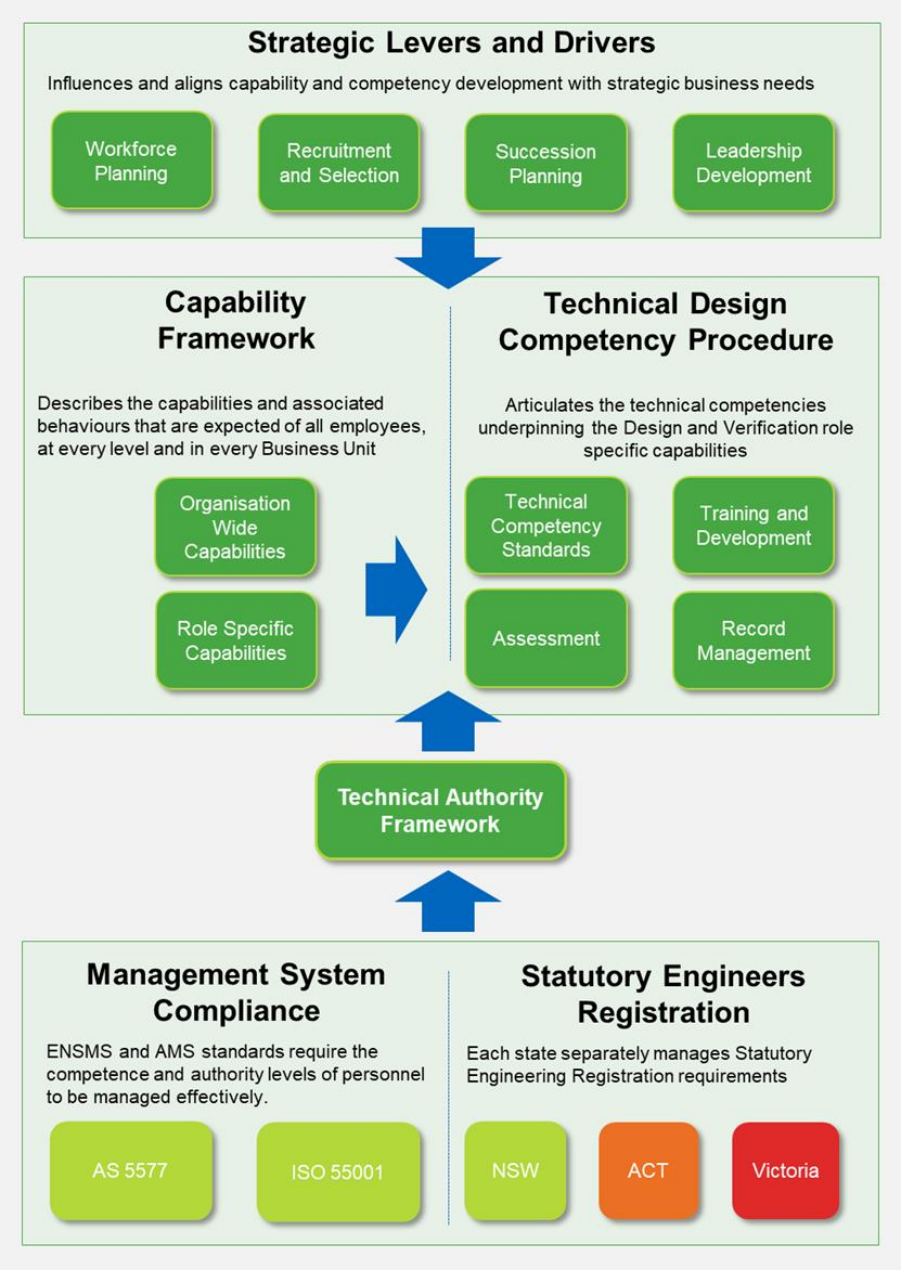


Table 39 Designer competency requirements

Competency Standard	Requirement
Designer Technical Competency Standard	Qualifications: Engineering discipline relevant to one of Transgrid and Lumea's asset groups 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 groups 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 though 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.

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(l))

6.10.1. Fire event during FDP ((Regulation reference 8(l)(i))

In an emergency on a Transgrid and Lumea Supply Network, action will be taken according to the relevant Terminal Station emergency response manual. Detailed information about 'Manuals' is provided under the heading 'Reference Documents' for each Transgrid and Lumea Supply Network in Section 6.4. If further response is required, it will be enacted under Transgrid and Lumea's emergency response protocols.

In the event of a fire on a Transgrid and Lumea Supply Network, the below procedures will be actioned as appropriate based on the level of emergency. Emergency levels and requirements for stakeholder engagement are detailed in each procedure.

D2003/3316 MMS-TLC-ERM-092 Transmission Lines Emergency Response Procedure – Work Instruction provides instruction and information to enable transmission line maintenance staff to respond to a transmission line emergency incident. This procedure:

- Outlines the responsible Transgrid and Lumea business groups to provide a coordinated response to a transmission line incident.
- Identifies the need for an investigation and the information to be collected.
- Provides a checklist to assist in the decision-making process in making the site safe and devising a repair plan.
- Requires a 'Dispatch Pack' to be prepared prior to entry to access the transmission line in an area that had an active fire. A dispatch pack is every piece of information related to the incident at hand to promote staff safety in bushfire affected areas.

- Requires staff to obey directions given by the onsite fire control authority's control officer.
- Provides the locations of emergency structures and emergency containers, and processes to book them out of the warehouse.
- Provides contact details for:
  - Emergency Services.
  - Victorian Police Local Area Command.
  - Other Services, landholders and Stakeholders.
  - VIC Local Government Area Map and Contacts.
  - VIC Country Fire Association District Map & Control Centre Contacts

D2017/05780 Transmission Line First Response and after Fault Patrols – work instruction MMS-TLC-088: This work instruction details the responsibilities in relation to:

- Preparing a restoration plan for transmission line failure requested by Network Operations team following a fault or incident on the transmission line. The document details two types of response:
  - Transmission Line - First Response. For example, a first response service provider or linesman is requested to investigate unsuccessful auto-reclose.
  - Transmission Line - After Fault Patrol. For example, an after-fault patrol is requested for a bushfire event where the transmission line has either tripped or had the potential to be damaged due to being exposed to the fire. Aerial inspection of the entire transmission line is often undertaken to identify fault location and determine the severity of the fault.
- Emergency Response is not included in this document as it is covered in D2003/3316 MMS-TLC-ERM-092 Transmission Lines Emergency Response Procedure.
- The Network Operations team is responsible for determining a response in relation to a fault on a transmission line or any other reason to have staff investigate the transmission line site.
- The Network Operations team provide direction on the scope of an investigation during after fault response, including the information to be collected.
  - The subsequent findings of the Forced Emergency Outage Follow-Up Report are discussed the monthly Network Performance Review meeting to develop recommendations to address the cause of outages and mitigate the risk of recurrence, including referring the issue to other committees or working groups for action where appropriate.
- D2018/01641 Asset Event Investigation and Reporting must be followed when investigating asset failure that initiated a fire ignition, even if no fire eventuated for the asset failure. Additional detail is provided in Section 6.11.2 Incident Identification and Reporting.
- An after-fire patrol will be performed by Easement Maintenance to assess fire damaged trees and determine the need for emergency vegetation cutting to prevent these trees from falling into the Minimum Clearance Space. Emergency vegetation cutting will be executed in compliance with relevant permits. Affected landowners will be engaged post work as per the communication requirements in the **ELCMP**.

Transgrid and Lumea use operating protocols with connected customers and Supply Networks to set out agreements on coordinating outages, switching processes, load shedding and communicating incidents. Operating protocols are signed by authorised representatives of Transgrid or Lumea (current operating

protocols are signed by Transgrid on behalf of Lumea under the Services Agreement for Transgrid provide operational services to Lumea) and the connected parties and include contact details of key operating personnel.

6.10.2. Operating Plans during total or partial Total Fire Ban (TFB) day ((Regulation reference 8(l)(ii))

Transgrid and Lumea's Network Operations team are notified in advance of TFB days and manages any work and network outages to minimise risk to the network and public.

On a total or partial fire ban day, Transgrid and Lumea operations and operating protocols remain unchanged, including the requirement to advise AEMO of any present or anticipated risk to power system security.

Transgrid and Lumea use the following procedures and protocols to monitor, manage and communicate with AEMO about risk associated with bushfires:

- Network Security is maintained throughout a TFB day through communications with AEMO, AusNet and Powercor
- The AEMO Bushfire Risk Checklist is used to establish whether a double circuit should be reclassified as a single contingency event and AEMO advised.
- Auto-Reclose on all 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 performed immediately.
- The Transgrid and Lumea / AEMO Emergency Operating Protocol, is used to determine the circumstances that allow Transgrid and Lumea to return circuits to service without reference to AEMO.
- Protocols are used for Managing Requests and Demands for circuits to be taken out of service by firefighting authorities.
- Protocols for Firefighting Near Power Lines.
- Vegetation inspection is scheduled annually such that vegetation Defects are rectified before the start of the FDP. Consequently, no vegetation management is expected to be completed on a total or partial fire ban day.

Any requests for emergency vegetation cutting on these days must comply with permit requirements and be assessed by external stakeholders, including landowners and fire control authorities.

6.10.3. Declaration of Fire Danger Period (Regulation reference 8(l)(iii))

Victorian 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 Environment (HSE) 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 Corporate HSE team monitors the effectiveness of the control measures stated in the

D2012/04610 Hot Work and Fire Risk Work Procedure and provides additional communication on an ad-hoc basis.

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 1 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 Plan. Transgrid and Lumea nominate 31 March as the end of the FDP to trigger internal bushfire risk management performance reporting.

6.10.4. Exemptions and Permits on Total Fire Ban day

Transgrid and Lumea do not perform any maintenance work that presents a fire risk on TFB or Catastrophic days. Each year, Transgrid and Lumea apply for exemptions to perform certain work on TFB days. In accordance with a permit issued by a fire control authority, the General Manager Operations and Maintenance must be consulted regarding the use of hot work or any work with the potential to cause fire risk on a TFB day.

The General Manager Infrastructure Delivery, General Manager Operations and Maintenance (or delegate), or relevant Project Directors or delegate within Business Unit Major Projects, are responsible for obtaining Section 40 permits for construction, maintenance, or operational works on a TFB.

The D2012/04610 Hot Work and Fire Risk Work Procedure details the process and requirements for work on TFB days. A detailed description of the procedure is provided in Section 6.5.1 Bushfire Preparedness Process.

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

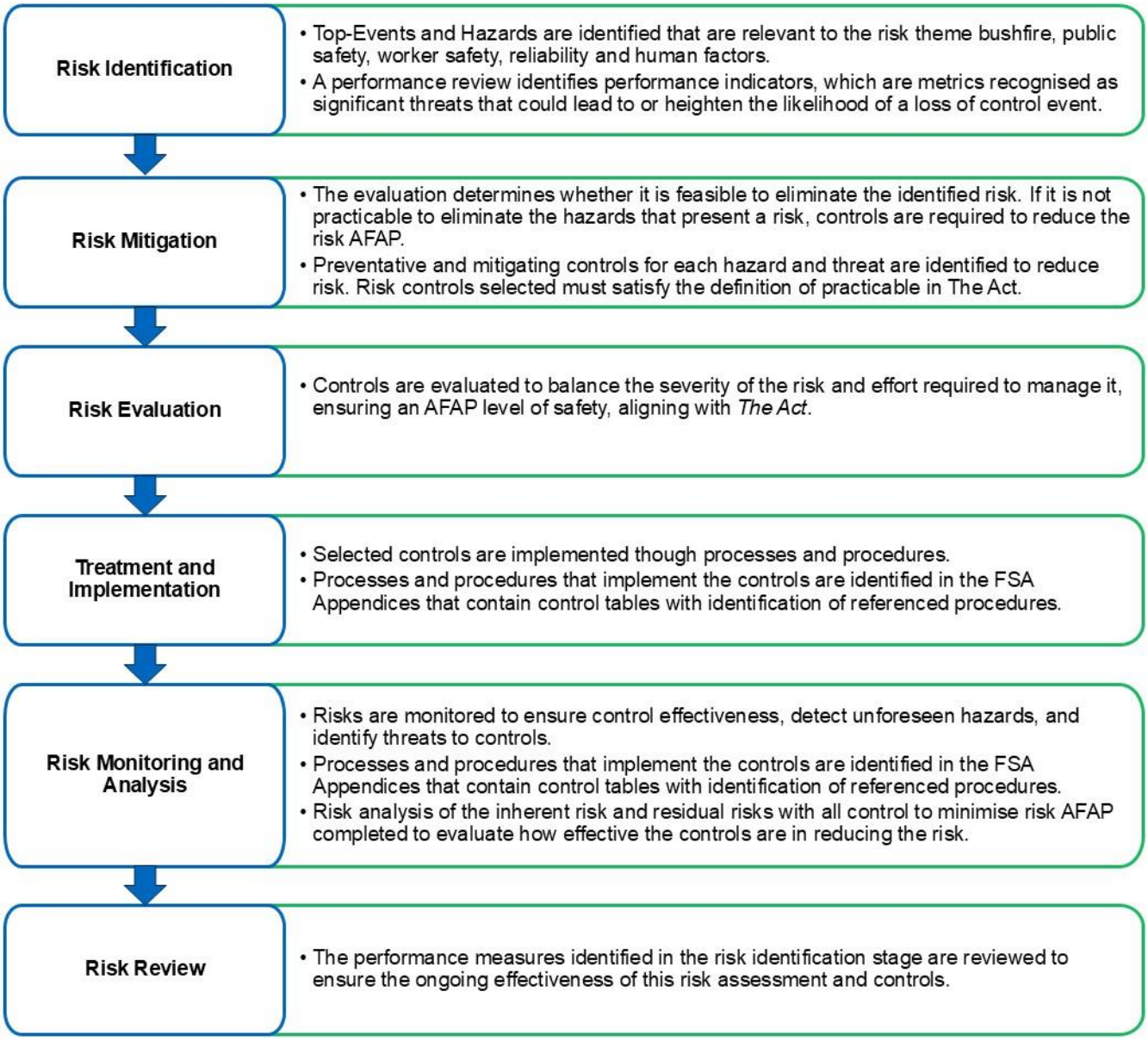
Transgrid and Lumea investigate, analyse and process information to mitigate bushfire risk of ignition though a formal safety assessment process. This process, which is shown in Figure 23, involves:

- Identifying network hazards that can arise from the network. For bushfire mitigation these have been identified as electricity and hot works on the network.

- Identifying foreseeable threats that lead to loss of control of the hazards that can result in bushfires. This process uses the following forums to help identify all foreseeable threats:
  - Reviewing previous network events, including previous fires in Victoria or other jurisdictions, asset failure events, such as conductor drops, explosive asset failures and vegetation intrusions.
    > Transgrid and Lumea have not initiated any fires from the operation of their Supply Networks in Victoria at the time of submitting this plan and rely on its NSW and ACT experience in this area.
  - Reviewing investigation outcomes from bushfire related incidents on Transgrid and Lumea Supply Networks and, where available, investigations undertaken by other network service providers 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 a Transgrid and Lumea Supply Network.
  - 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.

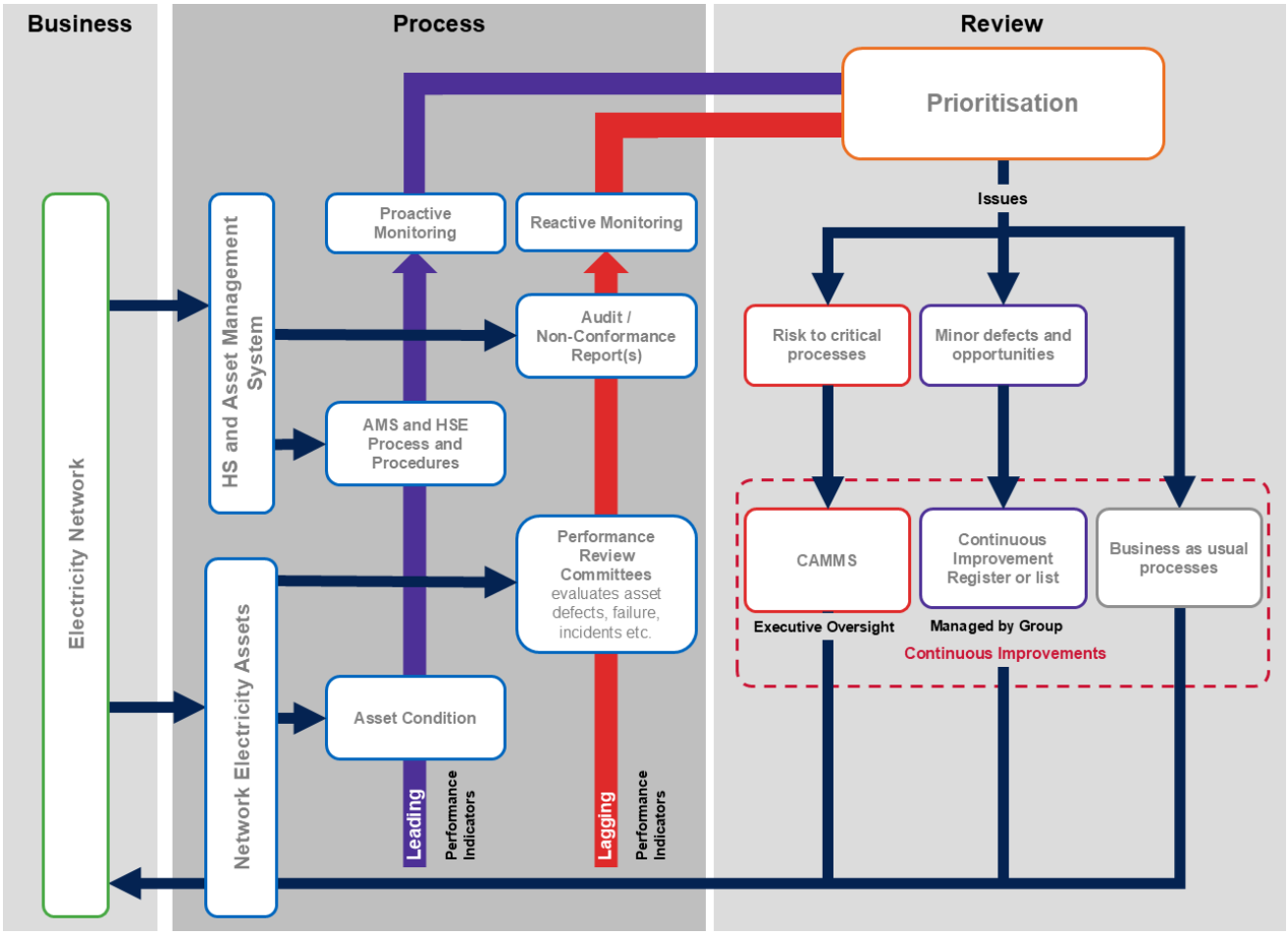
Transgrid and Lumea strive to continually improve its safety (including bushfire) and asset management systems through a series of processes and forums illustrated in Figure 24.

Figure 23 Formal Safety Assessment Process



Transgrid and Lumea continually improve their safety and asset management systems through a closed loop approach using a combination of proactive (leading) and reactive (lagging) monitoring and auditing, as shown in Figure 24.

Figure 24 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 events either through the SCADA monitoring systems, or from an external incoming call and record the incident in the Operations Logging System (OpsLog). This asset failure is 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 Plan. For events regarding bushfire, the Control Room operator is contacted to begin emergency management procedures. See Section 6.10.1 Fire event during FDP for information on fault response and emergency response during that period.
- Events with a people safety or environment consequence are recorded as 'Incidents' in CAMMS 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 event 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 incidents and the associated people safety risk initiated by Transgrid and Lumea staff, including Contractors, is responded to and investigated in accordance with D2019/03823 HSE Incident Management.
- Incidents are recorded in CAMMS for traceability and assurance that the investigation is complete, its findings are recorded and actions 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 Safety and Environment, Delivery, and Health Safety and Environment (Networks) business group 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.
- All incidents are recorded in CAMMS.

The D2015/07223, Health, Safety, Environment and Network Safety Communication and Reporting must be followed for communicating and reporting fire incidents affecting health, safety, and environment. A summary of the communication is provided in Table 40.

Fire incidents initiated by a Transgrid and 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. Table 42 summarises the type of investigation reporting required for the category of fire event. The process is detailed in D2018/01641 Asset Event and Investigation Reporting Procedure.

D2018/01241 Regulatory Incident Reporting Procedure must be followed for external reporting to regulators and government agencies (such as WorkSafe Victoria). The criteria, timeframe and the responsible Transgrid and Lumea business group for reporting to external stakeholders is provided to ensure compliance with external regulations on incident reporting.

Table 40 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 CAMMS 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 • CAMMS incident notification • HSE Gram is sent to all staff in Transgrid and Lumea. • Team Leader/Group Manager is notified.	Incident raiser
Identified hazard	When hazard is identified.	Record in CAMMS and Team Leader/Group Manager is notified.	All staff
Lost time incidents	After lost time incident has occurred.	Email and CAMMS incident notification to be	General Manager of HSE

Type of Incident	Timeframe for Communication	Type of communication and audience	Staff responsible for communication
		communicated to relevant Group Managers, and Executive Group Managers.	
Critical Incidents	Within 24 hours of a critical risk incident.	Transgrid and Lumea and Contractor staff is 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.	CAMMS incident investigation is shared with Health Safety and Environment business groups.	Incident Investigator

The following table sets out the methodology and investigator for each consequence of HSE incident:

Table 41 HSE Incident Investigation Methodology

Consequence	Methodology	Investigator	Incident Close Out
Catastrophic (Actual and Potential) • Single fatality. Multiple major injuries. Permanent disabilities/chronic diseases. • Significant extent of environmental damage (e.g. bushfire).	ICAM	Trained Leader or Independent investigator supported by the HSE/PC&S team.	General Manager of HSE
Major (Actual and Potential) • Multiple recoverable lost time injuries or life-changing illness. • Major injury requiring hospitalisation and numerous days lost. • Medium-term occupational illness. • Damage to significant Aboriginal Site.	ICAM	Trained Leaders – Safety and Environment Delivery or Major Projects teams to support	General Manager of HSE or Safety and Environment Delivery Manager Senior Environment 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) • Reportable to Government Environment Department in Victoria.	5 Why's	Line leader with Safety and Environment Delivery or Major Projects team to support	Safety and Environment Delivery Manager
Minor (Actual only) • Illness of injury requiring medical treatment	CAMMS - Root cause of incident	Line leader	Line leader

Consequence	Methodology	Investigator	Incident Close Out
• Localised environmental impact that can be rectified in a short time.			
Minimal (Actual Only) • Illness or injury not requiring medical treatment. • Localised environmental impact that can be rectified in a short time with no discernible environmental impact.	CAMMS - Root cause of incident	Line leader	Line leader

Table 42 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 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) Trip only Trip, Reclose, Trip & Lockout (TARTLO)	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.
2	Outage caused by fire event in Transgrid and Lumea Supply Network 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) Trip only Trip, Reclose, Trip & Lockout (TARTLO)	Yes	FEOR Follow up Report		Yes in accordance with D2018/01241 Regulatory Incident Reporting Procedure.
3	Process Failure	Process failures identified in Investigation Reports.	Not applicable	CAMMS	Actions in CAMMS 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 a Key Hazardous Event.	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))

Transgrid and Lumea provide assistance and advice to fire control authority personnel to ensure that their personnel always maintain a safe approach distance to Transgrid and Lumea Supply Network when operating near or fighting fires on Transgrid and Lumea's Supply Networks in accordance with the Blue Book's 'Limits of Approach'. This advice will be provided to emergency service providers via our Network Operations group who can be initially contacted on our External Emergency contact number (1800 027 253).

Transgrid and Lumea will respond to information requests to assist fire investigations by fire control authorities in a truthful and timely manner and in compliance with the ESBMR. The internal stakeholders that provide this information are:

- Strategic Asset Management Manager for information pertaining to the operating and maintaining of Transgrid and Lumea Supply Network.
- Senior HSE Programs and Assurance Manager for information pertaining to Health and Safety related matters.

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 include private electric lines.

7. 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.

8. 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.

9. 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.

10. 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.

11. 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.

12. 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.

13. Exemptions and Declarations (Regulation reference 15)

Transgrid has no current exemptions to the ESBMR.

Lumea has no current exemptions to the ESBMR.

14. Change from previous revision

Table 43 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
4.0	Executive General Manager, Network, Transgrid Executive General Manager, Lumea		• Re-numbered the sections to follow Transgrid's new template. • 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 Line 2 information. • Included line 060 and 0X1 in Appendix H and I, and throughout the document. Additionally, adding clear reference to Prescribed Maintenance Plans associated with the two 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. • Added Lineworker License requirement under section 6.9.1 and 6.9.2

Revision no	Approved by	Date	Amendment
			• Clarified the Environmental authorisation with reference to D2023/01113 Environmental Assessment Framework - Victoria 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 in section 6.10.3 • 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 D2018/00673 Electricity Safety Management Scheme (**ESMS**) • Removed the old Appendix B Assessment of work orders in scope of this plan as this information is duplicate of D2015/09823 Bushfire Risk Management Plan • Removed the old Appendix C Network Incident Reporting Matrix as per Transgrid Asset Event Investigation and Reporting 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 the Plan.

15. References

Table 44 Document References and Incorporation

Document	Relationship to this Plan	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) Regulations 2020	Victorian Regulation or Act	N/A	2020
Electricity Safety (Management) Regulations 2019	Victorian Regulation or Act	N/A	2019
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

Document	Relationship to this Plan	HP TRIM No	Revision
Incident and safety performance reporting guidelines – Major Electricity Companies	ESV Guideline	N/A	
Incorporated or Regulatory Documents			
Transgrid Electric Line Clearance Management Plan	Regulatory Document	D2020/00020	4
Electricity Safety Management Scheme (**ESMS**)	Regulatory Document	D2018/00673	3
Safe Work Handbook – Victorian Assets	Incorporated	D2025/00007	1
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	
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	
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	
Victorian Formal Safety Assessment	Referenced	D2024/00836	

16. Attachments

Appendix A Bushfire In Scope work orders determination

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 Supply Networks:

- Asset Classifications
  - Automation
  - Easement
  - Network Property
  - Terminal station (Substation)
  - Transmission Line
- Maintenance Type
  - IP: Inspection
  - RM: Routine Maintenance
  - DF: Corrective Maintenance
  - CM: Condition Based Maintenance
- 'Bushfire In Scope' field: has 'INC' – Include Reviewed.

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

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 Plan.

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 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 Transgrid and Lumea's Supply Networks or correcting Defects. Job plans include the standard scope of works, resource and cost estimates. Table 45 includes inspection job plans used to create maintenance work orders for the critical routine maintenance activities in Section 6.8.2.

Table 45 List of EAM Job Plans applicable to this Plan

Job Plan	Job Plan Description	Maintenance Type	Component Code	Bushfire In Scope
L6GDF	Property & Facilities Corrective Maint	DF		REV
PROTDF	PROTECTION DEFECT	DF		REV
S6IT-	INSTRUMENT TRANSFORMER DEFECT	DF		REV
S6AXT	AUXILIARY TRANSFORMER DEFECT	DF	AXT-	REV
S6BLD	BUILDING DEFECT	DF	BLD-	REV
S6BG	BUSHING DEFECT	DF	BUSH	REV
S6BGE	Investigate Bushing Elect Test Result	DF	BUSH	REV
S6CBC	Investigate CB Contact Resistance result	DF	CBR-	REV
S6CBE	Investigate CB Electrical Test Results	DF	CBR-	REV
S6CBG	Investigate CB Gas Results	DF	CBR-	REV
S6CBR	CIRCUIT BREAKER DEFECT	DF	CBR-	REV
S6CBS	Investigate CB Spring Charge Results	DF	CBR-	REV
S6CBT	Investigate CB Timing Results	DF	CBR-	REV
TCFR	Conductor Repair	DF	CON-	INC
THRREP	HOT JOINT REPAIR	DF	CON-	INC
S6CT-	CURRENT TRANSFORMER DEFECT	DF	CT--	REV
S6CTE	Investigate CT/VT Electrical Test Result	DF	CT--	REV
S6ITG	Investigate IT Gas Results	DF	CT--	REV
S6DESG	Investigate DESW Gas Results	DF	DESW	REV
TEASCO	Easement Defect Maint - Contract	DF	EAS-	INC
TEASE	Easement Defect Maint - Staff	DF	EAS-	INC
TET240	LIDAR 240Pa + 50C	DF	EAS-	INC
TET50	LIDAR No Wind + 50C	DF	EAS-	INC
TETMAX	LIDAR Tmax	DF	EAS-	INC
TLIDR	LIDAR SCAN	IP	EAS-	INC
TOFFEA	Off Easement Tree Removal	CM	EAS-	INC
TONEA	On Easement Tree Removal	CM	EAS-	INC
S6EGD	EARTH GRID DEFECT	DF	EGD-	REV

Job Plan	Job Plan Description	Maintenance Type	Component Code	Bushfire In Scope
S6FPE	FIRE PROTECTION DEFECT (DELUGE/HYDRANT)	DF	FPE-	REV
TINSUL	INSULATOR REPLACEMENT THREE PHASE	DF	INS-	INC
I2340	Substation Oil Containment Rectification	DF	ODAM	INC
TOHEW	OHEW BONDING	DF	OHEW	REV
TOHEWR	OHEW/OPGW Broken Strands	DF	OHEW	REV
S6REA	REACTOR DEFECT	DF	REA-	REV
TAERL	Aerial Inspection	IP	STR-	INC
TBENT	REPLACE TOWER MEMBER	DF	STR-	REV
TBOND	STRUCTURE LEG EARTH REPAIR	DF	STR-	INC
TLFIT	FITTING REPAIR		STR-	INC
TLMAIN	TOWER REPAIR		STR-	INC
TRUST	TOWER STUB LEG/MEMBER/BOLT RUST		STR-	REV
TTHERM	Thermographic survey of all joints	IP	STR-	INC
S1SBLI	ANNUAL SUBSTATION INSPECTION LARGE SITE	IP	SWYD	INC
S1SBSI	ANNUAL SUBSTATION INSPECTION SMALL SITE	IP	SWYD	INC
S1SUBL	6 MONTHLY SUB INSPECTION LARGE SITE	IP	SWYD	INC
S1THRL	LARGE SUBSTATION THERMOVISON INSPECTION	IP	SWYD	INC
S6TCH	TAPCHANGER DEFECT	DF	TCH-	REV
S6THER	DEFECT FOUND DURING THERMOGRAPHY	DF	TVO-	INC
S6TX-	TRANSFORMER DEFECT	DF	TX--	REV
S6TXE	Investigate Tx Electrical Test Results	DF	TX--	REV
S6VT-	VOLTAGE TRANSFORMER DEFECT	DF	VT--	REV