Transgrid

People. Power. Possibilities.

Electric Line Clearance Management Plan – Public

CONTROLLED DOCUMENT

Revision 3

ESV Approval 13 August 2024

Contents

1. Purpose

This Electric Line Clearance Management Plan (the **Plan**) describes the vegetation management processes for managing transmission line assets and associated easements in compliance with the *Electricity Safety (Electric Line Clearance) Regulations 2020* and its Schedule – Code of Practice for Electric Line Clearance (the **Code**). This plan is in place for the period of 1 July 2021 to 30 June 2026.

The Plan demonstrates compliance with the objectives of the Code:

(i) The duties of Responsible Persons;

(ii) The standards and practices to be adopted and observed in vegetation management in the vicinity of the electric lines;

(iii) Management procedures to minimise danger of electric lines causing fire or electrocution;

(iv) Any other matters for or with respect to the maintenance of electric lines and associated assets.

Transgrid has previously submitted the Plan to Energy Safe Victoria (ESV), prior to 31st of March 2021, and was approved. Since last approval, one amendment revision of the Plan was issued to address Minor non-conformances from ESV's Audit (CM-11515) with ESV's full evaluation (CM-12236) received on 21 December 2022.

Transgrid will review the Plan yearly to ensure relevant new transmission line assets in Victoria that come under the ownership of Transgrid are covered by the Plan, and that the processes remain effective and current. Any changes to the ESV approved Plan would be notified and re-submitted to ESV for approval prior to use of the plan.

A copy of the approved Plan will be published on the Transgrid website (www.Transgrid.com.au).

2. Scope

The Plan outlines how Transgrid will manage its transmission lines and associated assets located in Victoria from the risk of vegetation contacting electric (Transmission) lines. It is further aimed at fulfilling our commitment to providing customers with a safe and reliable electricity supply.

The purpose of the Plan is to provide management procedures in relation to tree pruning, cutting or removal in the vicinity of electric transmission lines. The Plan also incorporates Transgrid's procedures that ensures maintenance of prescribed clearance spaces and compliance with the Electricity Safety (Electric Line Clearance) Regulations 2020.

For the consequent 5-year plan (for example the period 2026-2031), Transgrid will endeavour to submit a draft version of the Plan to ESV for review and approval by 31st of March of that commencement year.

The Plan is reviewed by Transgrid annually and updated as required. A materiality assessment of the changes will be performed and if deemed required will be issued to ESV for review. Furthermore, the Plan will be amended if instructed to do so in writing by ESV as specified in Part 3 Section 10 of the Regulations 2020. This will occur within 14 days or as specified.

This revision addresses Minor Non-Conformance by ESV from Electric Line Clearance Management Plan Audit CM-11515, as well as ESV's evaluation CM-12236. Other editorial updates were also undertaken and these are included in the document. Summary of changes are available Table 12.

As the responsible Executive officer for Transgrid's Strategic Bushfire Risk, I trust the Plan conveys key aspects of how Transgrid's manages Electric Line Clearance for its Victorian Assets to mitigate bushfires. Transgrid welcomes contributions for the continued development of the Plan's effectiveness.

Official Version Signed

Marie Jordan

Executive General Manager of Network

Signatories to the Electricity Line Clearance Management Plan:

Official Version Signed	*Official Version Signed*	*Official Version Signed*
Endorsed by **Lance Wee** General Manager of Asset Management	**Endorsed by** **Rob McKimm** Head of Compliance	**Prepared by** **Adam Hoare** Strategic Asset Management Manager

3. Definitions

Table 1 Abbreviations

Term	Definition
AIM	Asset Inspection Manager
CAMMS	Hazard, Risk, Waste, Incident, Audit and Compliance Management System
CFA	Victorian Country Fire Authority
BBTS	Berrybank Terminal Station
BBWF	Berrybank Windfarm Substation
BB1/BB2	Berrybank Transmission Line 1 and 2
Defect	An out-of-specification condition which, if left unattended, may affect the performance or reliability of the transmission line.
ENSMS	The Electricity Network Safety Management System and associated formal safety assessments developed by Transgrid under the NSW Electricity Supply (Safety and Network Management) Regulation 2014
EPIRB	Emergency Position Indicating Radio Beacon
ESMS	Electricity Safety Management Scheme in accordance with the Electricity Safety (Management) Regulations 2009 Division 1
ESV	Energy Safe Victoria, the Victorian technical and safety regulator
Fire Danger Period	Taken from the D2018/00674 Victorian Bushfire Mitigation Plan: CFA declares the *Fire Danger Period* (FDP) for each municipality (shire or council) at different times in the lead up to the fire season. It depends on the amount of rain, grassland curing rate and other local conditions. TransGrid has declared the start of *Fire Danger Period* across NSW, ACT and Victorian networks as 1st of September. This is to address the various start dates across Victoria, and assist in maintenance planning to complete high bushfire risk maintenance work before the start of the 1st of September. TransGrid has declared the end of *Fire Danger Period* as 31st of March, due to the various end dates across Victoria and to assist in reporting on bushfire performance.
Hazard Tree	The relevant parts below of the Code that defines hazard tree to cut or remove is as follows: Clause 8 (a) manage trees below the transmission line to mitigate, as far as practicable, the fire risks associated with the fuel load below the transmission line; and (b) manage trees adjacent to the transmission line to avoid, as far as practicable, a tree entering the minimum clearance space around that line if the tree falls. Clause 9 (1)…. (2) The responsible person may cut or remove a tree which the person has clearance responsibilities if a suitably qualified arborist has - (a) Assessed the tree having regard to foreseeable local conditions; and (b) Advised the responsible person that the tree or any part of the tree, is likely to fall onto or otherwise come into contact with an electric line.

Term	Definition
	(3) For the purposes of this clause it is irrelevant that the tree is not within, and is not likely to grow into, the minimum clearance space for an electric line span.
PSSR	Transgrid's Power System Safety Rules (refer Definitions) which dictates Safe Approach Distance for working on or near Transgrid's assets.
TSS	Transgrid Spatial System
The Act	Electricity Safety Act 1998
The Code	Schedule 1 for Code of Practice for Electric Line Clearance from Electricity Safety (Electric Line Clearance) Regulations 2020
The Regulation	Electricity Safety (Electric Line Clearance) Regulations 2020
X1/X9	Line X1/X9 Red Cliffs to Buronga 220 kV (Red Cliffs Gantry to border)
060	Line 060 Jindera to Wodonga 330 kV (Span 322-323, except structure of tower 323 itself, as it is owned by AusNet). AusNet's numbers this tower '401'.

4. Electric Line Clearance Management

4.1. Introduction

4.1.1. Objective

The objective of the Plan is to demonstrate compliance to the Regulations and the Code. This is done by describing the standards and practices used by Transgrid to observe and remove vegetation in the vicinity of electric lines, and keeping the whole or any part of the vegetation clear of the electric lines Transgrid operates.

This results in the achievement of:

- Electrical safety.
- Minimisation of fire starts from assets
- Effectively manage reliability of supply.
- Achievement and promotion of public safety.
- Achievement and promotion of workplace safety.
- Maximised environment protection and amenity.
- Effectively protecting areas of important vegetation.
- Ensuring community satisfaction.

The Plan will communicate how external stakeholders, such as Contractors and landowners, are engaged to ensure the objectives of the Plan are achieved.

4.1.2. Ownership of Assets

Transgrid's core business is to operate and maintain the high voltage electricity transmission network in NSW and ACT, connecting generators, distributors and major end users. Transgrid's network forms a major backbone of the National Electricity Market (NEM), enabling energy trading between Australia's three largest states along the east coast and supporting the competitive wholesale electricity market. In addition to its prescribed transmission network in NSW and ACT the Transgrid Group owns and operates several contestable assets across NSW, ACT and Victoria.

As a result, Transgrid owns the following elements of the Victorian transmission network as referred in Table 2.

Table 2 Transgrid Group ownership of Victorian network elements

Legal Entity	Assets Owned / Operational Boundary
NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for NSW Electricity Networks Operations Trust (ABN 70 250 995 390) (operating as Transgrid) (**Transgrid**)	Deer Park Terminal Station (**DPTS)** **Line X1/X9** Red Cliffs to Buronga 220 kV (Red Cliffs Gantry to border) **Line 060** Jindera to Wodonga 330 kV (Span 322-323, except structure of tower 323 itself, as it is owned by AusNet). AusNet's numbers this tower '401'

Legal Entity	Assets Owned / Operational Boundary
Lumea Pty Limited (formerly known as Transgrid Services Pty Limited) ACN 626 136 865 as trustee for the Lumea Trust (formerly known as Transgrid Services Trust) ABN 94 121 353 950 (**Lumea**)	Kiamal Terminal Station (**KMTS**) Berrybank Terminal Station (**BBTS**) Berrybank Windfarm 220/33 kV Substation (**BBWF**) 220 kV Line connecting BBTS and BBW (**BB1/BB2)**

The operator of all assets in this Electric Line Clearance Management Plan (**ELCMP**) is NSW Electricity Networks Operations Pty Ltd, as trustee for NSW Electricity Networks Operations Trust (**Transgrid**), with the transmission line connecting the Berrybank Terminal Station and the Berrybank Substation owned by Lumea Pty Limited Pty Limited as trustee for the Lumea Trust (**Lumea**). Lumea and Transgrid have entered into a Management Services Agreement under which Transgrid will operate Lumea owned assets under its processes and procedures for the management of network safety, bushfire mitigation, and vegetation management. The assets owned by Transgrid and Lumea and operated by Transgrid are collectively referred to as Network Assets or Victorian Network in this document.

In addition, there are several spans in two different sites that are in Victoria and hence its vegetation and compliance are managed under this ELCMP. They are Line X1/X9 Red Cliffs to Buronga 220 kV (Span 1-5) and Line 060 Jindera to Wodonga 330kV (Span 322-323, except structure of tower 323 itself, as it is owned by AusNet). It should be noted that AusNet number tower 323 as '401'.

4.1.3. Purpose

The management of safe clearances from vegetation to conductors is essential to:

- Mitigate the risk of lines starting fires through flashover to vegetation.
- Minimise the safety risk to the public.
- Minimise the damage to environment and private property.
- Maintain high levels of system reliability by reducing the instances of contact with vegetation.

This Plan specifies the standards for vegetation maintenance that are aimed at satisfying the requirements in the Code. Transgrid's ISO55001 certified Asset Management System (recertified in 2017) and Electricity Safety Management Scheme approved by ESV inform the effectiveness of vegetation maintenance.

The Plan demonstrates how various Transgrid staff and Contractors coordinate activities to achieve our regulatory obligations.

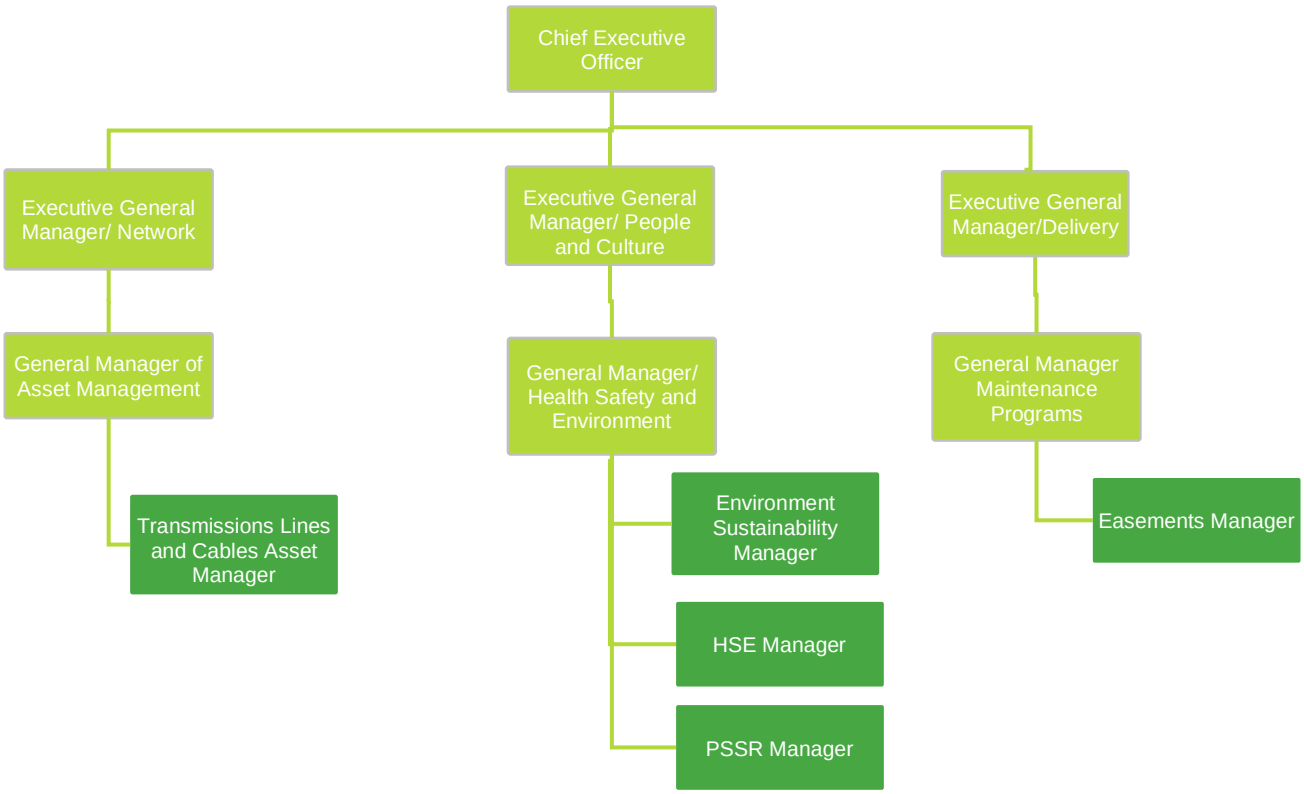
Figure 1 and Table 3 provides information on key Transgrid internal stakeholders in vegetation management in Victoria.

Table 3 Transgrid Organisation Structure for Vegetation Management

Title	Role in Vegetation Management
Asset Management and Compliance	Preparing, reviewing, and communicating the plan to relevant Business Units. Coordination and conduct of relevant second line governance and assurance activities.
Transmission Lines and Cables Asset Manager	Define the easement strategy.

Title	Role in Vegetation Management
	Develops and monitors the implementation of the Maintenance Plan – Easement and Access Tracks, and the easement maintenance requirements in Maintenance Plan – Non-Prescribed Assets. Undertakes Control Assurance Reviews (CAR) on the implementation of the nominated Maintenance Plans.
Manager of Maintenance Engineering – Transmission Line	Implement the ELCMP along with the relevant Maintenance Plans, such as: Easement and Access Tracks and the easement – Non-Prescribed Assets Maintenance Plans. Participate in the internal audit on the implementation of the Maintenance Plan – Easement and Access Tracks and the easement maintenance requirements in Maintenance Plan – Non-Prescribed Assets. Manage contracts with Contractors providing easement maintenance services. Manage Contractors' quality of service by ensuring their procedures are at par with Transgrid's procedures. Manage Contractors' technical competency.
Environment Manager	Ensure Contractor's environmental management system is equivalent to or better than Transgrid's certified Environment Management System. Track Contractor performance and perform environmental audits on Contractors. Develop and communicate asset specific site management plans to Contractors.
Safety Manager	Ensure Contractors safety management systems are equivalent to or better than Transgrid's certified Safety Management System. Track Contractors performance and perform safety audits on Contractors.
Power System Safety Rules (PSSR) Manager	Manage Contractors safety competency when working near or on Transgrid's assets.

Figure 1 Transgrid Org Structure for Vegetation Management



4.1.4. Geographical implementation of the Plan.

Victorian network assets are separate discrete assets and do not form a network. Network Asset specific line clearance management activities are included as asset-specific appendices. Figure 2 illustrates that all current transmission line Network Assets in Victoria are in a hazardous bushfire risk area, emphasising the importance of the Plan in minimising any bushfire risk from network assets in Victoria. Figure 2 illustrates the approximate location of the Network Assets in the context of the Victorian electricity network.

This plan covers:

- Berrybank Transmission Line (BB1/BB2) operating at 220 kV
- Line X1/X9 Red Cliffs to Buronga 220 kV (Span 1-5) and,
- Line 060 Jindera to Wodonga 330 kV (Span 322-323, except structure of tower 323 itself, as it is owned by AusNet). AusNet number tower 323 as ‘401’.

Specific information on lines listed above and the corresponding substations can be found in Appendix A Figure 2 shows the approximate location of the listed lines, which illustrates that the asset is located in and surrounded by land categorised as high bushfire risk area.

The Plan will be updated as new transmission lines are acquired by Transgrid.

Annually we examine if the Bushfire Risk Area status dataset is updated and review our existing and new assets’ statuses accordingly. The Plan is updated based on any observed changes.

Figure 2 Bushfire risk area coverage in Victoria

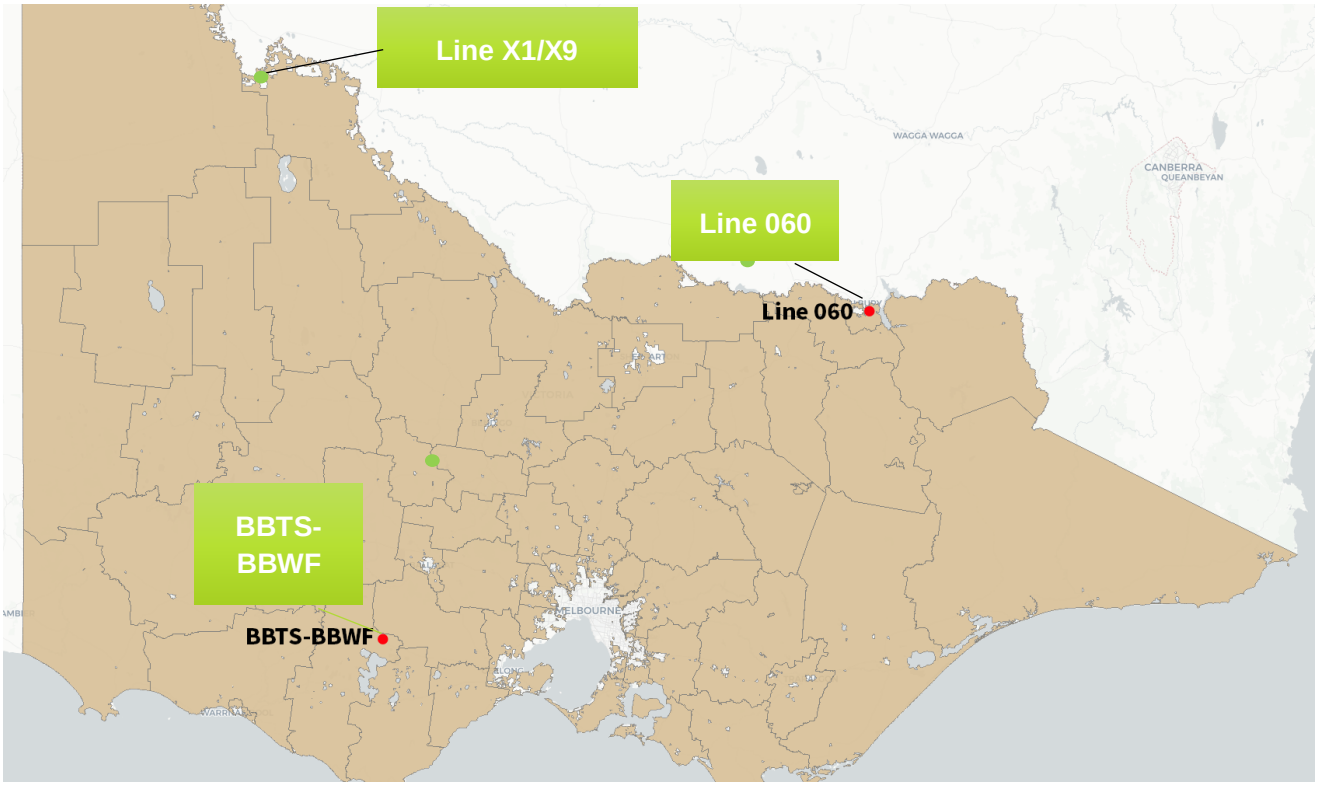
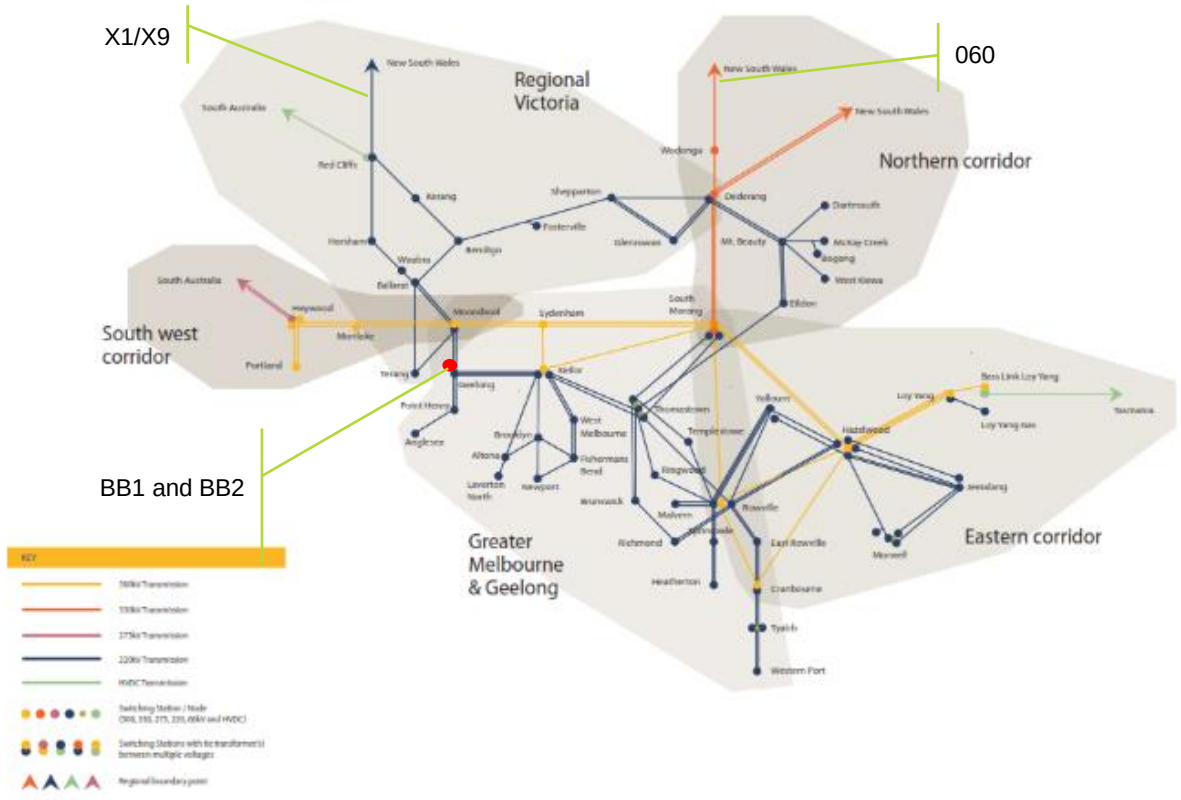


Figure 3 Victorian Electricity Network



4.2. Compliance Information

This document is structured in line with the Electricity Safety (Electric Line Clearance) Regulations 2020 to assist with demonstrating compliance as shown in Table 4.

Table 4 The Regulation Compliance Reference

Clause	Regulatory Requirement	Location in ELCMP
9(1)	This regulation does not apply to a responsible person referred to in section 84A or 84B of the Act.	Not applicable
9(2)	Before 31 March in each year, a responsible person must ensure that a management plan relating to compliance with the Code for the next financial year is prepared.	2
9(3)	A responsible person that is a major electricity company, before 31 March 2021, must prepare and submit to Energy Safe Victoria for approval a management plan relating to compliance with the Code for the period from 1 July 2021 to 30 June 2026	2, 5, Table 3
9(4)(a)	The name, address and telephone number of the responsible person	5
9(4)(b)	The name, position, address and telephone number of the individual who was responsible for the preparation of the management plan	5
9(4)(c)	The name, position, address and telephone number of the persons who are responsible for carrying out the management plan	5
9(4)(d)	the telephone number of a person who can be contacted in an emergency that requires clearance of a tree from an electric line that the responsible person is required to keep clear of trees	5
9(4)(e)	the objectives of the management plan	4.1
9(4)(f)	the land to which the management plan applies (as indicated on a map)	4.1.4
9(4)(g)	any hazardous bushfire risk areas and low bushfire risk areas in the land referred to in paragraph (f) (as indicated on the map);	4.1.4
9(4)(h)	each area that the responsible person knows contains a tree that the responsible person may need to cut or remove to ensure compliance with the Code and that is— indigenous to Victoria; or listed in a planning scheme to be of ecological, historical or aesthetic significance; or a tree of cultural or environmental significance	4.3
9(4)(i)	the means which the responsible person is required to use to identify a tree of a kind specified in paragraph (h)(i), (ii) or (iii)	4.3
9(4)(j)	the management procedures that the responsible person is required to adopt to ensure compliance with the Code, which must— must include details of the methods to be adopted for managing trees and maintaining a Minimum Clearance Space as required by the Code; and	4.5, 4.6, 4.6.2

Clause	Regulatory Requirement	Location in ELCMP
	for the purposes of determining a minimum clearance space in accordance with Division 1 of Part 3 of the Code- (A) must specify the method for determining an additional distance that allows for conductor sag and sway; and (B) may provide for different additional distances to be determined for different parts of an electric line span;	
9(4)(k)	the procedures to be adopted if it is not practicable to comply with the requirements of AS 4373 while cutting a tree in accordance with the Code.	4.4.2
9(4)(l)	a description of each alternative compliance mechanism in respect of which the responsible person has applied, or proposes to apply, for approval under clause 31 of the Code	Not Applicable
9(4)(m)	the details of each approval for an alternative compliance mechanism that—the responsible person holds; and is in effect is in effect;	Not Applicable
9(4)(n)	a description of the measures that must be used to assess the performance of the responsible person under the management plan	6.1
9(4)(o)	details of the audit processes that must be used to determine the responsible person's compliance with the Code	6.2
9(4)(p)	the qualifications and experience that the responsible person must require of the persons who are to carry out the inspection, cutting or removal of trees in accordance with the Code and the Electricity Safety (General) Regulations 2019	7.1
9(4)(q)	notification and consultation procedures, including the form of the notice to be given in accordance with Division 3 of Part 2 of the Code	4.4, 7.2
9(4)(r)	a procedure for the independent resolution of disputes relating to electric line clearance	7.2
9(4)(s)	if Energy Safe Victoria has granted an exemption under regulation 11 relating to a requirement of the Code, details of the exemption or a copy of the exemption.	Not applicable

Table 5 identifies the specific items as required in (the Code) of the Regulations, Schedule 1 Part 2.

Table 5 the Code Compliance Reference

Reference	Requirement	Location in ELCMP
3	Responsible person must keep Minimum Clearance Space clear of trees	Table 3, Table 9
4	Exception to Minimum Clearance Space for structural branches around insulated low voltage electric lines	Not applicable
5	Exception to Minimum Clearance Space for small branches around insulated low voltage electric lines	Not applicable
6	Exception to minimum clearance space for small branches growing under uninsulated low voltage electric lines in low bushfire risk areas	Not applicable

Reference	Requirement	Location in ELCMP
7	Exception to Minimum Clearance Space for structural branches around uninsulated low voltage electric lines in low bushfire risk areas	Not applicable
8	Owner or operator of transmission line must manage trees around Minimum Clearance Space	4.6.5
9	Responsible person may cut or remove hazard tree	4.6.5
10	Cutting of tree to comply with Standard	4.6.5
11	Cutting or removal of specified trees must be minimised	4.6.5
12	Cutting or removing habitat for threatened fauna	4.6.5
13	Restriction on timing of cutting or removal if notification is required	4.4
14	Restriction on urgent cutting of trees	4.4
15	Restriction on urgent removal of trees	4.4
16	Responsible person must provide notification before cutting or removing certain trees	4.4, Appendix D
17	Responsible person must publish notice before cutting or removing certain trees	4.4, Appendix D
18	Responsible person must consult with occupier or owner of private property before cutting or removing certain trees	4.4.1
19	Notification and record keeping requirements for urgent cutting or removal	4.4.2, Appendix D
20	Duty relating to the safety of cutting or removal of trees close to an electric line	4.5
21	Duty relating to assisting to determine the allowance for cable sag and sway	4.6.2
22	Duties relating to management procedures to minimise danger	Not applicable
23	Additional distance that allows for cable sag and sway	4.6.2
24	Insulated electric lines in all areas	Not applicable
25	Uninsulated low voltage electric line in a low bushfire risk area	Not applicable
26	Uninsulated high voltage electric line (other than a 66,000 volt electrical line) in a low bushfire risk area	Not applicable
27	Uninsulated 66,000 volt electrical line in a low bushfire risk area	Not applicable
28	Uninsulated low voltage and high voltage electric lines (other than a 66,000 volt electrical line) in a hazardous bushfire risk area	4.6.2
29	Uninsulated 66,000 volt electric lines in a hazardous bushfire risk area	Not applicable
30	Transmission Lines	Table 7, Appendix D

4.3. Vegetation with Significance

Transgrid implements strict environmental frameworks to ensure the management of vegetation is done in ways that minimise the impact to threatened fauna and / or trees with significance in Victoria. The spread of native vegetation is provided in Figure 4, with Transgrid's Victorian Network transmission line assets identified by the red circle.

Transgrid's D2023/01113 Environmental Assessment Framework - Victoria is applied to identify the need for the Environmental Effects Statement and/or environmental approvals for each asset listed in Section 4.1.4. None of the assets trigger the threshold for requiring an Environmental Effects Statement.

Details on the location of easements is contained in Transgrid's Spatial System (TSS). Extracts of easement details are provided in Appendix A. The TSS database is updated frequently, and includes a search on responsible authority websites and the consultation with relevant internal stakeholders. TSS is available to all staff and will be used prior to any inspection and / or maintenance activity to identify locations and details of vegetation that may be:

- A native tree.
- Trees listed in a planning scheme to be of ecological, historical or aesthetic significance.
- Trees of cultural or environmental significance must be minimised.
- Property owner/occupier special requirements.
- Cutting or removing habitat for threatened flora and fauna with a status of 'vulnerable,' 'endangered' or 'critically endangered'.
- Vegetation listed in a planning scheme to be of ecological, historical or aesthetic significance.
- Heritage Register.
- Victorian Aboriginal Heritage Register.
- Threatened Invertebrate Fauna List.
- Threatened Vertebrate Fauna List.
- Transgrid will apply the same process (see below) for third party NSW/ACT datasets to third party Victorian datasets.

- All data that is considered static is reviewed annually
- Data that is updated more frequently will be refreshed as required

Appendix B identifies the Victorian datasets provided in TSS.

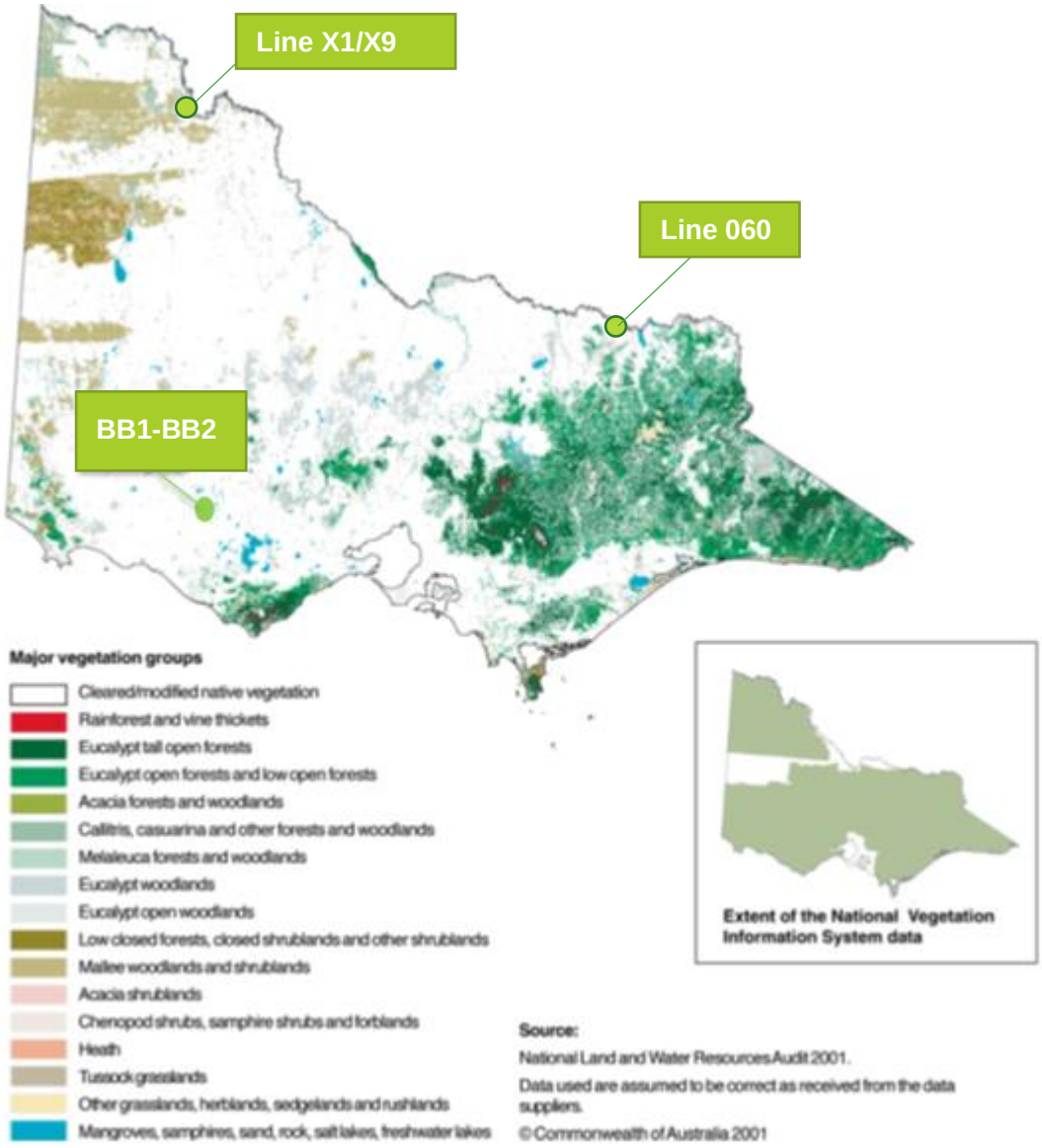
In addition to the TSS system for recording vegetation with significance, Transgrid has a detailed Environmental Handbook outlining all the requirements that are undertaken prior to any works for vegetation management. Transgrid's Environmental Handbook is available on Transgrid's external website.

For activities not subject to the Environmental Protection / Planning Act(s) internal due diligence applies and an environmental checklist needs to be completed in all cases unless the foreseeable potential impacts are negligible.

The following is a list of Environmental Checklists that are used within Transgrid for exempt development:

- Environmental Low Risk Checklist
- Environmental Moderate Risk Checklist (General)
- Environmental Moderate Risk Checklist (Vegetation Maintenance)
- Environmental Moderate Risk Checklist (Access Track Maintenance)
- Environmental Moderate Risk Checklist (Oil/PCB Handling and Transport)

Figure 4 Native vegetation in Victoria



4.4. Notification and Consultation Procedure

4.4.1. Landowner Notification and Consultation

Transgrid actions may be undertaken on land owned privately or vested under another authority. It is important to determine if landholders have any special access or consultation requirements. This information is stored in TSS.

For private landowners, access requirements and notification is provided 14 days in advance of the proposed action, and works to be completed no later than 60 days of notification timeframe. The work would have been assigned with the priority listed in Table 8 Classification of Vegetation Defects and if the work is not completed by the committed timeframe, the work will go through the Variations Process and the affected persons shall be re-notified. If the tree intended to be pruned is a tree of cultural, historical, aesthetic or environmental significance the notice will include details of impact and proposed actions to minimise the impact. Section 7.27.2 provides detailed information on the notification issued to landowners.

Notification to the landowner is performed using the form exampled in Appendix D and is recorded and kept on file. All attempts to contact the owner are recorded, evidence of at least two attempts to contact property owners is required. For all consultation activities, the following is recorded:

- Stakeholder/ property owner name.
- Contact details.
- Details of stakeholder/ property owner consultation, including date, time and topics discussed.
- Stakeholder/ property owner requirements.

- As required, Transgrid is in consultation with Landowner on the planning for visit and work, and in the case where the work cannot be completed within the original timeframe, (e.g. due to availability of resources, weather or access), Transgrid will consult and notify with the Landowner as soon as possible on the new plan on either cancelling, extending or resume the work in future. The re-notification process follows the standard process and the timeframe resets.

- Additionally, in case that Transgrid is not able to meet the strict deadline as per Required By Date in the system, an internal variation process will be followed. Usage of this process is covered in D2023/00058 Maintenance Delivery Manual which refers to D2020/01190 Maintenance Variation Document Management, whereby works being rescheduled is reviewed by Asset Management for changes involving an extension of time, or escalation or de-escalation of job priority.

4.4.2. Emergency Notification (including Urgent Cutting) and Record Keeping

Transgrid may carry out emergency work to:

- Eliminate the risk of transmission lies causing bushfires.
- Ensure the safety of the public.
- Maintain high levels of system reliability.

Emergency works means works carried out in response to:

(a) A sudden natural event, including a storm, flood, tree fall, bush fire, land slip or coastal inundation, or

(b) Accident, equipment failure or structural collapse, or

(c) A damage caused by vandalism, arson or a pollution incident, if the works involve no greater disturbance to soil or vegetation than necessary and are carried out in accordance with all applicable requirements of the Blue Book.

(d) Encroachment or growth of trees that is not anticipated in the management plan, or is assessed to encroach in foreseeable local conditions by a suitably qualified arborist.

(e) A tree falling or becoming damaged is required to be cut or removed to maintain the Minimum Clearance Space as determined by suitably qualified arborist.

(f) Cutting or removal of vegetation or tree during the CFA declared *Fire Danger Period*.

Transgrid will provide written notice to the landowner as soon as practicable after completing the urgent cutting or removal of vegetation or trees. The notice will specify the following:

(a) Where and when the cutting or removal was undertaken.

(b) Why the cutting or removal was required.\

(c) The date of the last inspection of the span of the electric line in relation to which the cutting or removal was required before it was identified that the urgent cutting or removal was required.

The notice is kept on file for 7 years in the same location (Consultation Manager) for notices sent for non-urgent vegetation or tree management. Refer to Appendix D for Urgent Cutting Notification contained within the Easement Works Notification Form.

In the event of an emergency, environmental impacts are considered and appropriate treatments to manage those impacts are implemented as far as practicable prior to and post event. The D2016/00985 D2016/00985 Environmental Assessment Framework and Transgrid Environmental Handbook are followed to ensure the environmental impacts are addressed appropriately during the emergency conditions.

Records of the documentation of environmental assessment, treatments of environmental impacts, and landowner notification prior to and post the emergency event are kept in HP TRIM, Transgrid's document and record management system. Consultation Manager is a system used by Transgrid's internal stakeholder communication group to keep a record of landowner engagement. The storage of such records follows Transgrid's D2012/02831 Document and Records Management procedure.

Urgent pruning or removal will be undertaken to the extent practicable in accordance with the Regulations for urgent cutting or removal, whilst ensuring the provision for Minimum Clearance Space and be consistent with established practices for the location. Clearing may occur if it is the usual treatment for the site, or where the applicable horizontal distance (including allowance for sag and sway) is difficult to be maintained and pruning is considered impractical or undesirable.

4.5. Responsible Vegetation Clearing Practices

4.5.1. Objective of Vegetation Clearing (Clause 8)

The process outlined in this section is implemented such that Transgrid must ensure that, at all times, no part of a tree is within the Minimum Clearance Space.

The tree referenced in previous statement refers to the following:

- Manage trees below the transmission line to mitigate, as far as practicable, the fire risks associated with the fuel load below the transmission line, and

- Manage trees adjacent to the transmission line to avoid, as far as practicable, a tree entering the Minimum Clearance Space around that line if the tree falls".
- Vegetation management on transmission line easements is to be carried out in accordance with the Code.
- Vegetation management on transmission easements should eliminate both risk of fire initiation, and risk to the safe and reliable operation of the transmission lines.

4.5.2. Responsible Vegetation Clearing to Environmental Requirements

The process employed to ensure that clearing of vegetation is undertaken in a responsible manner is as follows:

1. Vegetation maintenance requires compliance with the D2016/00985 Environmental Assessment Framework.
2. Vegetation maintenance must be completed in accordance with any relevant Memorandums of Understanding or Protocols.
3. Subject to the D2016/00985 Environmental Assessment Framework, the preferred method of vegetation control is to remove, rather than prune, tall growing vegetation that will eventually infringe the Minimum Clearance Space.
4. If stumps cannot be treated with herbicide, they are managed at the discretion of the service provider to prevent / minimise regrowth, where practical and environmental considerations allow.
5. Where herbicide is planned to be used, it is used strictly in accordance with Transgrid's D2009/09991 Use of Pesticides procedure.
6. Effective management of identified Hazard Trees where whole and/or part tree failure is likely and would impinge within electrical clearance requirements or damage/impact electricity infrastructure.
7. Vegetation control shall be carried out using the safest and most cost effective method in an environmentally acceptable manner, in consultation with property owners, stakeholders or managers, and other statutory authorities as necessary.
8. Retain and prune as required hollow bearing trees or other vegetation specifically selected for its habitat value as locally significant fauna habitat. Vegetation is managed in accordance with Section 4.6 and may be poisoned (if appropriate) to prevent regrowth. Pesticide application is in accordance with the D2009/09991 Use of Pesticides procedure.
9. The use of practices other than those described in this section are not precluded. Approval is obtained from Environment Manager regarding the acceptability of the environmental impacts before any other practices are applied.
10. Special requirements for vegetation maintenance for transmission lines covered by an Environmental Impact Statement (EIS), or an Operational Environmental Management Plan are adhered to in the assessment of vegetation to be removed. The Contractor will provide this information to Transgrid to capture in TSS.
11. The density and character of vegetation outside the clearance space is managed to ensure the conditions for the safe and reliable operation of the line, to facilitate inspection confidence, and to mitigate as far as practicable, the fire risks associated with the fuel load below and beside the transmission line.

12. The size, regrowth space and vegetation management cycles are stated in the D2020/00269 Non Prescribed Maintenance Plan for Berrybank and D2003/2398 Easement and Access Tracks Maintenance Plan for Line X1/X9 and 060, in consultation with affected persons, as optimal to maintain clearances. The required vegetation clearance is stated in this ELCMP document. This annual assessment will consider factors including regrowth rates, the size of the clearance and regrowth space, risks, access, operating costs and environmental considerations.
13. Annual vegetation inspection will be carried out to evaluate the effectiveness of the treatment for existing vegetation as stated in the D2020/00269 Non-Prescribed Maintenance Plan for Berrybank, and D2003/2398 Easement and Access Tracks Maintenance Plan for Line X1/X9 and 060. This satisfies the requirement of Electricity Safety (Bushfire Mitigation) Regulations 2013 clause 7(i)(i), which stipulates the standard easement inspection maintenance cycles to be no longer than 37 months. See section 4.6.3
14. Clearing will generally be used for management of vegetation where considered appropriate and practicable, as stated in the Maintenance Plan.
15. When performing the routine inspections of vegetation easements, the vegetation management workers will determine the method for maintaining the vegetation. Where it is not practicable to follow AS 4373-2007, the vegetation management worker determines the most appropriate methods and recommends the appropriate equipment taking into consideration, safety of people, and the environmental/visual impact. The determination is recorded in the appropriate Environmental Risk Checklist.
16. Pruning will generally be used for the management of significant vegetation and may be considered for the clearance of vegetation in the hazard space.
17. Vegetation management workers must have sufficient knowledge and training to ensure that vegetation activities under their control are conducted in a safe and environmentally responsible manner. As a minimum, vegetation management workers carrying out pruning or removal works must comply with current industry work practices and/or relevant Australian standards. All vegetation management workers must be trained and authorised (refer to Section 7.1.2), and working in accordance with the VESI (Victorian Electricity Supply Industry) Vegetation Management Guidelines. Transgrid only engages vegetation management workers who have sufficient experience in the electrical industry to perform tree-clearing works in a safe manner. All new employees to the electrical industry must be approved by Transgrid and be initially supervised by an experienced person.
18. Transgrid shall conduct regular training needs analysis of their employees and contractors to ensure that the level of training is consistent with the requirements of the task to be performed. Results of audit processes are reviewed in determining these needs. Required training levels for operators are set out in Section 7.1.
19. Audits of both work in progress and/or completed work are conducted by the Easements Maintenance Group to ensure that vegetation management workers:
    - Undertake pruning works in accordance with Australian Standard AS 4373 – 2007 Pruning of Amenity Trees where practical.
    - Demonstrate compliance with the prescribed safety and environmentally responsible aspects of industry/company requirements.

The Contractor performing vegetation management for Transgrid shall have its staff authorised under relevant categories in the D2016/00985 Environmental Assessment Framework, as stated in the contract.

Post work audits are performed by Transgrid representatives at both the assessment and cutting stages of the program in accordance with Easements and Access Tracks Performance and Quality Audit Process to ensure compliance to the requirements of the Code. All non-conforming audit results are recorded in Transgrid's CAMMS and any deficiencies identified are reported with corrective actions taken to achieve compliance as soon as practical. Payment will not be processed for vegetation cutting crews until the works have been rectified.

4.5.3. Vegetation Maintenance Outcomes

In order to meet the requirements of Transgrid's Electricity Safety Management Scheme (ESMS) and Asset Management System, the following maintenance outcomes are required for vegetation maintenance:

(a) Any Tall Growing Vegetation that cannot be removed due to constraints shall be pruned with an allowance for growth at that location that will not lead to the vegetation intruding on the Minimum Clearance Space prior to the next routine vegetation maintenance activity.

(b) Any vegetation identified during inspection that intrudes the Minimum Clearance Space:

> is considered to be a violation and will be addressed as defect vegetation with a priority assigned relative to the risk of interference (in accordance with Section 4.6.4.2) prior to the next routine vegetation maintenance activity.

> shall be removed or maintained such that the vegetation will not lead to being reported in subsequent inspection reports prior to the next routine vegetation maintenance activity.

(c) Hazard trees and Specified Trees (refer 4.6.5) are identified and then managed on a risk basis in accordance with Section 4.6.4.2.

(d) LiDAR may be used as both a maintenance validation tool and a risk identification tool, if deemed necessary.

(e) If the vegetation maintenance outcomes are successfully achieved, with allowance for growth until the next routine vegetation maintenance activity, LiDAR should not identify any vegetation, and the risk of vegetation interfering with electricity works is eliminated at that moment in time.

4.6. Maintaining Minimum Clearance Spaces

4.6.1. Purpose

This procedure outlines:

- The process to be employed in maintaining the Minimum Clearance Space at all times.
- The strategy to be employed in selecting the method of maintaining vegetation near transmission lines to achieve the most appropriate outcome.

Clearance space distances required to be maintained between vegetation and conductors are given in the Table 6 below. The table reflects Code of Practice Clearances (Clause 30), which are to be applied at all times in addition to provisions for conductor movement at the design limits of sag and sway.

Table 6 Applicable Distances based on 'Code of Practice for Electric Line Clearance' and allowance for design limits

Nominal Voltage (kV)	Applicable horizontal distance (without allowance for sag and sway)	Applicable vertical distance (without allowance for sag and sway)
66	3 m	3 m
220	4.6 m	3.7 m
275	5 m	4.2 m
330	5.5 m	4.7 m
500	6.4 m	6.4 m

4.6.2. Procedure

To maintain the above requirements in accordance with the Code, Transgrid employees follow the processes described in the subsequent sections.

4.6.2.1. Vegetation Management Guidance

Vegetation management on transmission line easements is to be carried out in accordance with the Code.

Vegetation management on transmission easements should eliminate both the risk of fire initiation, and the risk to the safe and reliable operation of the transmission lines.

When pruning or removing vegetation on public land every endeavour must be made to comply with the *Code of Practice for Bushfire Management on Public Land*.

Contractors pruning amenity tress, if located in Transgrid easement, shall be compliant to AS 4373:2007 – Pruning of amenity trees. Where it is not practicable to follow AS 4373-2007, the vegetation management worker determines the most appropriate methods and recommends the appropriate equipment taking into consideration customer satisfaction, safety of people, and the environmental/visual impact. The determination is recorded in the appropriate Environmental Risk Checklist.

4.6.2.2. Minimum Clearance Space (Regulation 9(4)(j))

Transgrid's transmission lines are designed to meet the requirements of AS 7000:2016. Vegetation Clearance Requirement is defined in D2003/2398 Maintenance Plan for Easement and Access Track, and D2016/00985 Environmental Assessment Frameworks. Transgrid uses PLS-CADD models to determine the maximum sag (Tmax) and blowout (50ºC + 500Pa) conditions for a transmission line to ensure these requirements are satisfied at all times. These conditions are also known as the transmission line maximum line operating conditions.

The maximum sag will occur with maximum line current load on a still hot day and relates to the line rating available for use by Transgrid System Operations, and the maximum sway that will occur at high wind condition of 500Pa. The vegetation clearance[1] stated in Table 7 takes into account the maximum sag, maximum sway and applicable horizontal and vertical distances as per the Code, Schedule 1. These distances account for the distance from the conductor furthest from the transmission line centreline, for both left and right circuits, at the maximum line operating condition.

[1] The conductor position is modelled at everyday condition of 15ºC when applying the Minimum Clearance Requirement in PLSCADD.

The minimum vegetation clearance stated in Table 7 is compliant with Regulation 616(2) of the Electricity Safety (General) Regulations 2019, which states the specific clearance requirements for qualified persons carrying out vegetation management work.

The clearance requires management of any vegetation that is within the clearance space and has potential to grow, and also any vegetation that has the potential to enter the clearances (e.g. falling into the clearance space).

Table 7 Minimum Clearance Space that is to be maintained at all times

Nominal System Voltage	Minimum Clearance Space to be maintained at all times	
	Horizontal distance from **conductor**, including allowance for sag and sway	Vertical distance from **conductor**, including allowance for sag and sway
330 kV Line 060	25 m	10 m
220kV Line X1/X9	16 m	7m
220 kV Line BB1/BB2	16 m	7 m

4.6.3. Vegetation Maintenance Preventative Activities

Transgrid undertakes multiple types of easement inspections to ensure compliance to the Plan and to deliver effective and efficient easement management. Inspection methods and their frequencies are detailed below.

4.6.3.1. LiDAR Inspection

Airborne 3D laser scanning of the transmission line, vegetation, other above ground installations and ground modifications is carried out with the main function of confirming there is sufficient clearance to the transmission line, mainly from any vegetation. LiDAR inspection is available to validate whether prior maintenance work performed ensures minimum clearances are satisfied. The reporting requirements of LiDAR are detailed in the D2016/06839 Transmission Lines and Easements Condition Data Collection Instruction.

LiDAR is the primary method for inspecting easements in its NSW network and is conducted annually early in the calendar year as preparation for the Declared *Fire Danger Period* later in the calendar year. This method is applied to the spans of Line X1/X9 and 060 spans in Victoria and NSW. In accordance with the D2003/2398 Maintenance Plan for Easement and Access Track, all LiDAR inspections are scheduled in Ellipse with Required by Dates of no later than 1st of June each year. All identified vegetation defects are subsequently scheduled with Required By Dates no later than 1st of September.

An additional buffer of 1.5m is added to the Minimum Clearance Space in Table 7 when processing and identifying vegetation defects through LiDAR (refer to Section 4.6.4.1 on processing defects). The as-surveyed weather case is used to model the conductor placement when applying the Minimum Clearance Space and buffer. The reason is that the Minimum Clearance Space includes maximum sag and sway.

Easement inspection is the primary method of inspection for Line BB1/BB2, however LiDAR inspection can be used when required.

4.6.3.2. Easement Inspection

Easement inspections are performed for all Lines. Inspection frequencies for these Lines are located as follows:

- BB1/BB2 - D2020/00269 Non-Prescribed Assets Maintenance Plan. Inspections are scheduled and completed such that any defects are rectified prior to the start of *Fire Danger Period*.
- X1/X9 and 060 - D2003/2398 Maintenance Plan – Easement and Access Tracks(frequency set as per structures within New South Wales).

Defects identified during easement inspections will have a priority assigned based on its proximity to the Minimum Clearance Space, refer to Section 4.6.4.1.

The inspections are undertaken at ground level using appropriate rangefinder to inspect the vegetation on easement satisfies the Vegetation Maintenance Outcomes in Section 4.5.3, and hazard trees (as identified in Section 4.6.5). The scope of the Easement Inspection (for each span) includes:

- Record present state of easement.
- Validate the span's vegetation probability of failure rating.
- Validate the regrowth rate.
- Record vegetation defects as AIM Issues. Refer to Section 4.6.4.1.
- Record presence of hazard trees where whole or part tree has the potential or is in contact with conductor. Refer to Section 4.6.5 for definition of hazard tree.
- Record unauthorised easement encroachments or unpermitted activity, such as unpermitted fuel load on easement.
- Check metallic objects is compliant with D2021/02348 Transgrid Fencing Guidelines.
- Check signage is in good condition.

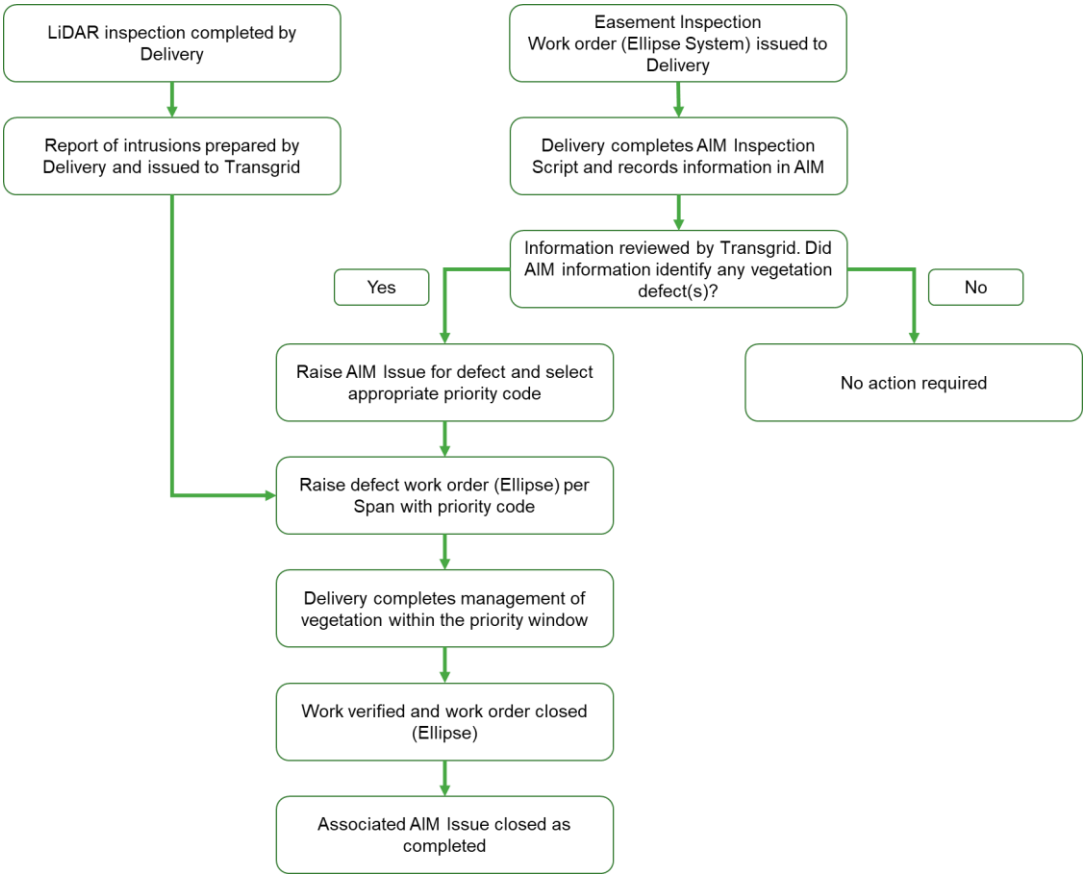
Asset Inspection Manager (AIM) is a tool to create and perform scripts for maintenance inspections. An AIM inspection script is created for easement inspections and applied to transmission line assets at a span level. Information on the inspection script and data collected for easement inspections is detailed in the D2016/06839 Transmission Lines and Easements Condition Data Collection Instruction.

4.6.4. Vegetation Management Activities

4.6.4.1. Vegetation Management Process

The process for managing vegetation posing a risk to violation of the Minimum Clearance Space is as per Figure 5.

Figure 5 Vegetation Management Process



4.6.4.2. Vegetation Condition Based Maintenance

Condition-based maintenance is not nominated for Lines BB1/BB2, 060 and X1/X9. Defect maintenance is used to address vegetation to be managed prior to the next inspection activity.

4.6.4.3. Vegetation Defect Maintenance

Vegetation that requires management to ensure compliance to the Minimum Clearance Space at all times is recorded as a defect and follows the process in Figure 5.

Vegetation defects are processed in accordance with the D2017/01717 Corrective Maintenance Procedure. Vegetation defects for Victorian assets are actioned and closed within the timeframe specified as per Priority Codes identified below in Table 8. A Variation Request must be submitted in accordance with D2016/15009 Maintenance Program – Variation Process when requesting work to be completed outside of timeframe.

Table 8 Classification of Vegetation Defects

Priority Code	Standard Job	Timeframe	Defect Criteria
P2	TEASCO	1 month*	Vegetation is **within** Minimum Clearance Space.
	TONEA^		*Hazard Tree* **will** contact the electric line.
P3	TEASCO	3 Months	**Potential** to be within Minimum Clearance Space before the next inspection activity.
	TONEA^		**Potential** for *Hazard Tree*^ to fall within Minimum Clearance Space before the next inspection activity.
* Issues and defects identified as having an imminent risk to bushfire, safety or security are considered urgent, and will be assessed within 24 hours. Following the assessment, these urgent works will be prioritised within the pool of P2 corrective works to ensure the set planned completion date reflects the level of urgency assessed. ^ *Hazard Trees* found on and off easement will have TONEA standard job.			

Defects with P2-3 shall be completed safely in accordance with Section 6 Approach to Electrical Apparatus in the Blue Book.

Further information on the Standard Job code listed in Table 8 is found in D2003/2398 Maintenance Plan – Easement and Access Tracks.

4.6.5. Hazard Trees and Specified Trees

Hazard trees are identified and managed during routine Easement Inspections (Section 4.6.3.2) for Line BB1/BB2. Identified hazard trees are managed in accordance with Section 4.6.4.2.

The assessment and management of hazard trees for spans of X1/X9 and 060 in Victoria are managed the same as the rest of the prescribed lines in NSW as per D2003/2398 Maintenance Plan - Easement and Access Tracks. However the Minimum Clearance Requirements and hazard tree criteria in Table 7 and Table 8 is added to and incorporated into the LiDAR inspection process for the spans located in Victoria The work orders are first inspected by an arborist before rectification work is undertaken.

The treatment of a hazard tree must, as far as reasonably practicable, comply with AS 4373-2007. If not, the vegetation management worker determines the most appropriate methods and recommends the appropriate equipment taking into consideration customer satisfaction, safety of people, the environmental/visual impact, and the type of hazard tree (refer to the below list). Their determination is recorded in the appropriate Environmental Risk Checklist.

A specified tree as defined in the Regulations – Clause 11 of the Code identified as one of the following will have constraints imposed on the cutting or removal of the tree.

- Trees that are indigenous to Victoria.
- Trees listed trees listed in a planning scheme to be of ecological, historical or aesthetic significance.
- Trees of cultural or environmental significance.

The constraints when cutting or removing the tree are:

(a) Must, as far as is practicable, not cut the tree more than is necessary to either:

(i) Ensure compliance with minimum clearance requirements (refer to Section 4.6.2.10).

(ii) Make an unsafe situation safe.

(b) Must not remove in order to satisfy minimum clearance requirements, unless:

(i) It is necessary to remove the tree to either:

(A) Ensure compliance with minimum clearance requirements (refer to Section 4.6.2.10).

(B) Make an unsafe situation safe

(ii) Suitably qualified arborist has both

(A) Inspected the tree.

(B) Advised Transgrid that cutting the tree in accordance with (a) would make the tree unhealthy or unviable.

(c) For trees identified as threatened fauna:

(i) Must not cut or remove a tree that is the habitat for threatened fauna during the breeding season for the threatened fauna unless either:

(A) It is necessary to cut or remove the tree to make an unsafe situation safe.

(B) It is not practicable to undertake cutting or removal of that tree outside the breeding season.

(ii) If it is not practicable to undertake cutting or removal of that tree outside the breeding season, the responsible person must translocate the fauna before undertaking the cutting or removal if it is practicable to do so.

4.6.6. Incident Response

The identification and management of asset related incidents and events, including asset failures and fire starts, is 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 through the Operations Logging System (OpsLog) this generates an Irregularity that feeds into the D2017/01717 Corrective Maintenance Process.
- Identified during the routine maintenance process as described in Section 4.6.3

Transmission line failures identified during routine easement maintenance activities are reported as an Issue in AIM. For serious events, the control room operator is contacted to commence emergency management procedures.

- Events that have a people safety or environment consequence are recorded as “Incidents” in CAMMS for investigation.

Transgrid has instigated an incident management process that is used to control people, activities and information following the occurrence of an event that has led to, or could have led to injury to people, damage to plant, machinery or the environment and/or some other loss including bushfire. The process for incident investigation is managed through CAMMS.

5. Accountability

For the purposes of Part 2 of the Code, the prescribed particulars related to sections 9(4) (a) – (d) of the Regulation are provided in the below table. The responsible person identified below is to ensure the Plan is reviewed each year, the compliance to the approved Plan, and renewal, preparation and submission of the Plan for a 5 year period or as of when a change needs to be incorporated to the approved Plan.

Table 9 Responsible Officers

Regulation Reference	Prescribed particular – contact details	Transgrid Information
9(4)(a)	the name, address and telephone number of the responsible person	Marie Jordan / Executive General Manager of Network. NSW Electricity Networks Operations Pty Ltd (ACN 609 169 959) as trustee for NSW Electricity Networks Operations Trust (ABN 70 250 995 390) (operating as Transgrid) 180 Thomas Street Haymarket NSW 2000 T: (02) 9284 3000 Postal address: PO Box A1000 Sydney South NSW 1235
		Marie Jordan / Executive General Manager of Network. Lumea Pty Limited (formerly known as Transgrid Services Pty Limited) ACN 626 136 865 as trustee for the Lumea Trust (formerly known as Transgrid Services Trust) ABN 94 121 353 950 (operating as Lumea) 180 Thomas Street Haymarket NSW 2000 T: (02) 9284 3000 Postal address: PO Box A1000 Sydney South NSW 1235
9(4)(b)	the name, position, address and telephone number of the individual who was responsible for the preparation of the management plan	Adam Hoare / Asset Systems and Compliance Manager / Network 180 Thomas Street, Haymarket NSW 2000 T: (02) 9284 3000
9(4)(c)	the name, position, address and telephone number of the persons who are responsible for carrying out the management plan	Vijay Vetrivel / Manager of Maintenance Engineering – Transmission Line / Delivery Old Wallgrove Road, Eastern Creek NSW 2766 T: (02) 9284 3000

Regulation Reference	Prescribed particular – contact details	Transgrid Information
9(4)(d)	the telephone number of a person who can be contacted in an emergency that requires clearance of a tree from an electric line that the responsible person is required to keep clear of trees	Emergency Contact Number for general public (open 24 hrs and available on Transgrid website): 1800 027 253 https://www.transgrid.com.au/Pages/contact.aspx

As per Part 2 s.10(7) (b) of the Regulation a copy of the accepted and current Electric Line Clearance Management Plan will be available on site at Victorian Network Assets by arrangement and at Transgrid's offices located at:

Suite 3, Level 19
80 Collins Street
Melbourne VIC 3000

An electronic copy of the Plan can be viewed at:

https://Transgrid.com.au/news-views/publications/Pages/default.aspx

The Transgrid's complaint handling policy can be viewed at:

https://www.Transgrid.com.au/being-responsible/complaint-handling-policy

To lodge a complaint please call the toll-free hotline 1800 222 537 or email us at:

community@Transgrid.com.au.

Transgrid can also be contacted at:

https://www.Transgrid.com.au/Pages/contact.aspx

6. Implementation

6.1. Measuring performance of the Plan (Regulation 9(4)(n))

Transgrid measures the performance of the implementation of the Plan through the following types of reporting described in Table 10. Overall, the performance of the electric line clearance management program is monitored through tracking and reporting of financial performance, vegetation fault rates and defect notification. Performance targets will be developed annually and are reported to senior management and board as detailed in Table 10Table 9. Targets are determined based on a combination of regulatory requirements, risk mitigation, contractor's performance and vegetation regrowth.

Transgrid's Easement Maintenance group validates vegetation maintenance work completed by Contractor before recording the work as closed in Ellipse and AIM.

Transgrid's D2018/00674 Victorian Bushfire Mitigation Plan contains specific measures on the performance of the Plan in managing the bushfire risk arising from vegetation management.

The continual improvement of the Plan is performed through:

- The review of Transgrid's procedures identified in the Plan.
- Implementation and auditing of key processes in the AMS that ensure the maintenance strategy development and planning processes are effective. This is covered in Section 6.2.

An Easement Maintenance Working Group that includes the Transmission Line and Underground Cables Asset Manager and their team, and Easement Maintenance Manager and their key managers, to monitor the progress of vegetation management to the Maintenance Plan. Issues or concerns affecting the delivery of vegetation management program are discussed and corrective actions taken to achieve compliance as soon as practical. As mentioned in section 4.5.1, payments are only processed once defects are rectified in a timely manner.

Table 10 Measuring Performance of the Plan

Type	Frequency	Description	Audience
Daily vegetation maintenance reporting	Daily via an online report	The report will provide a daily view to help monitor and track the delivery of vegetation maintenance program for all Transgrid . A sample of measures tracked are: Progress on scheduling maintenance work. On time this month ($) On time year to date ($) Delivery efficiency year to date Financial Performance –actual vs budget Information available at Transgrid's Maintenance Delivery Portal.	Transmission Line and Underground Cables Asset Manager Easement Maintenance Manager

Type	Frequency	Description	Audience
Bushfire internal reporting	May and June of each year. Report is emailed to audience.	The report in April / May (after *Fire Danger Period*) is to provide feedback on the delivery performance of bushfire vegetation maintenance program. The report due in June is to communicate the planning of bushfire vegetation maintenance program from June to March the following year. The report is used to highlight any potential issues in the delivery of the planned program. Information available in D2018/00674 Victorian Bushfire Mitigation Plan.	General Manager of Asset Management General Manager of Maintenance Program
Bushfire Status Report	Beginning of October. Report is emailed to audience.	Provides an update on the delivery status of the vegetation maintenance program in scope of managing bushfire risk.	General Manager of Asset Management General Manager of Maintenance Program
BARC bushfire reporting	Quarterly. Report is presented in BARC meeting.	The report provides assurance to BARC that Transgrid is effectively maintaining the assets in managing bushfire risk throughout the fiscal year. A traffic light rating system is used to illustrate the performance of delivering vegetation maintenance work related to managing bushfire risk.	Board Audit Risk Committee
Vegetation Clearance Reporting	OSIRIS	Report on the progress of vegetation inspection and corrective works. Details of reportable items for this report is available in D2022/01901 Reporting through OSIRIS Guide	ESV
Bushfire Mitigation Index	OSIRIS	Weekly report on the progress of bushfire mitigation activities. Details of reportable items for this report is available in D2022/01901 Reporting through OSIRIS Guide	ESV

6.2. Auditing compliance of the Plan to the Code (Regulation 9(4)(o))

The following processes ensure auditing to ensure compliance to the Plan:

- Control Assurance Review.
- AMS and ENSMS Audit Procedure.

- Contactor auditing as per Transgrid's contract management processes.

6.2.1. Control Assurance Review

The main objective of a D2003/2422 Control Assurance Review procedure is to identify gaps in the design and implementation of the Easement Maintenance Plan, which is critical to the successful implementation of the Plan. This in turn demonstrates whether the requirements of the Asset Management System (AMS) are satisfied.

The D2003/2422 Control Assurance Review specifies the following as a minimum:

- Type of audits – desktop and/or field.
- Frequency of audits
- Monitoring and recording of findings and actions from audits.

A list of the relevant requirements of the AMS related to successful implementation of the Plan are as follows:

- Ensure that the maintenance and inspection activities, as set out within the Maintenance Plan, are scheduled correctly within the maintenance planning systems (Ellipse Standard Jobs, MSTs, and AIM scripts).
- Ensure the inspection and maintenance activities required by Asset Managers and communicated through the Asset Management Plans, Asset Management Instructions, or Internal Work Requests (IWR) are being undertaken to a satisfactory standard.
- Ensure that all activities being undertaken are in accordance with the relevant asset management policies, service instructions, standards, and processes.
- Ensure that underlying processes which initiate or support operations and maintenance practices have provided the required asset related data, such as equipment fitment information, issues, defects raised from these issues, and conditional data obtained from inspections are being correctly recorded within the appropriate corporate information system (e.g.: Asset Inspection Manager and Ellipse).
- Ensure that asset defects are recorded appropriately in Asset Inspection Manager as per procedure.
- Ensure the rectification of defects is effective and occurring in accordance with priorities.
- Ensure that inspectors whom complete asset maintenance for Transgrid have valid competencies.
- Further information can be found in D2003/2422 Control Assurance Review (CAR) document.

6.2.2. AMS and ENSMS Audit Procedure

The processes stated in the Plan are in scope of the AMS and/or Electricity Safety Management System/ Electricity Safety Management Scheme (ENSMS/ESMS). Demonstrating compliance to these processes in the Plan is a focus of the D2021/00073 AMS and ENSMS Audit Plan. This procedure ensures that the AMS and ENSMS/ESMS support the regulatory and license requirements in Victoria. The audit schedule of the Electric Line Clearance Management Plan is detailed in the D2021/00073 AMS and ENSMS Audit Plan, Appendix D.

Target Area Reviews might be performed as separate audits on included in a normally schedule audit. These target areas of concern triggered by the below events. These reviews further demonstrate compliance to the Plan.

- Previous Audit Recommendations – the scope is triggered by the recommendations of previous audits as defined by those audit recommendations. The review should make recommendations for corrective action, improvement, or further investigation, as appropriate.
- Significant Changes – the scope involves a review of the assets, documents, systems, processes, procedures, practices, and controls directly affected by the changes. The review should also identify broader areas which could be impacted by unintended consequences and make recommendations for: corrective action, improvement, or further investigation as appropriate.
- Significant Incidents – the scope involves a review of the assets, documents, systems, processes, procedures, practices, and controls directly affected by the incident. The review should also identify the root cause and any broader impacts not immediately apparent, and make recommendations for: corrective action, improvement, or further investigation as appropriate.
- Significant Issues Closeout – the scope involves a review of the actions undertaken to resolve the identified significant issue and verification that the actions have resolved the issue. The review should also consider whether the actions taken might have broader unintended system impacts and make recommendations for corrective action, improvement, or further investigation as appropriate.

The record of audit outcomes in an action tracking system for monitoring and tracking of completion to prevent re-occurrence is outlined in Table 11. Refer to D2003/2422 Control Assurance Review for more information.

Table 11 Record and monitoring of audit outcomes

Guidance for Categorisation of Corrective Actions	Action Tracking System
Actions shall be created in CAMMS where: A critical deficiency identified on a control and the effectiveness rating is less than rating identified in CAMMS. There is a non-compliance to an Asset Management Plan requirement. A correction of a deficiency is essential to effective operation of ESMS, ENSMS and AMS processes.	CAMMS
Actions that: Address a shortcoming in processes or practices are identified and jointly agreed upon by the Assessment team and the Area. Represent an opportunity for improvement and not directly acted upon during the CAR.	Relevant business group specific Continuous Improvement Register
If a required corrective, action is immediately actioned or completed, for example by direct action occurring during the assessment.	To be noted in the report to allow identification in the scoping of future audits.

6.2.3. Auditing of Contractor

As part of Contractor management, Transgrid ensures the Contractors satisfy Transgrid's expectations and requirements on performance objectives for carrying out any work on Transgrid network and easements. The performance will be reviewed and discussed by Easement Maintenance group and Transmission Lines & Cables Asset Management group during regular work group meetings and will be communicated through to the Contractors. An implementation audit schedule for this plan is identified in each asset-specific appendix . The scope may cover the topics below:

- Environment
- OHS Records
- Monitoring/Measurement
- Training
- Emergency Procedures/Equipment
- Process Control
- Risk Management
- Subcontracting & Purchasing
- Management Responsibilities

The Contractor shall plan and document its required inspections and verifications of work performed by the Contractor and any Sub Contractors to ensure quality of work. Additionally, the Contractor shall submit Field Progress Reports as required, detailing plant on site, personnel on site, work completed, expenditure details and weather conditions including any man hours lost to wet weather. Unannounced site conformance inspections will be undertaken periodically throughout the term of the contract. Non-conformances that are identified during audits and inspections will be notified by issue of Corrective Action Requests (CARs)/Non-Conformance Reports (NCRs). CARs and NCRs will be recorded in CAMMS for monitoring and tracking closure.

Health, safety and environmental performance reports, including incident statistics, is submitted by the Contractor during the performance of the work under the Contract on a monthly basis. The reports are made available on request to TransGrid. The following will also be maintained by the Contractor and made available on request:

- Hours worked by the Contractor and its sub-contractors on a monthly basis;
- Inspection reports, audit reports and any non-conformances identified;
- Incident statistics (including incident frequency rates and environmental incidents);
- Hazard statistics;
- Risk Assessments conducted;
- Incident investigation reports;
- Records and minutes of Health and Safety meetings and tool box meetings;
- Induction and training records;
- Safety equipment records, and;
- Records of any complaints received and action taken

Contractor performance audits (field audit) are completed as per Post Work Audit – Vegetation Contractor and Easement Site HSE Inspection forms to demonstrate compliance to the Plan. The main focus of these audits is to ensure Contractors are completing the work to Transgrid's quality standard and in compliance to the Code. The Easement Maintenance team complete Contractor audits to validate the quality and quantity work identified as completed by the Contractor. The works leaders typically identifies 10% to 20% of the maintenance work delivered by the Contractors to audit on quarterly throughout the year. Results from these audits are then reported to the Contractor to remediate in a timely manner, and for them to report it back to Transgrid once completed. The Contractor audits may be triggered by incidents, non-compliances found during environment and safety audits.

7. Monitoring and review

7.1. Required qualification to implement the Plan (Regulation 9(4) (o))

7.1.1. Safety Qualifications

Transgrid staff and contractors must be trained and achieve the necessary authorisation level under the D2012/15325 Power System Safety Rules (PSSR) and Environment Authorisations in order to attend to energised equipment or work near powerlines. PSSR Manager has checked the compliance of PSSR against the Code of Practice on Electrical Safety for Work On or Near High Voltage Electrical Apparatus (the Blue Book 2022). Clearance Comparison between Blue Book and PSSR is provided in Appendix F. A plan has been developed to close identified gaps in a timely manner.

Specific qualifications required for job roles is listed in Section 7.1.27.1.1.

Transgrid has an integrated online Authorisation System called Pegasus, which performs as the repository tool to store staff and contractor's qualification and competency and ensure that they are available for review and audit and flags any expired or the need of license renewal or training refresher. For outsourced services, these are covered by inclusion of relevant clauses into the engagement contract to ensure the competency of their staff is equivalent to the competency of TransGrid personnel. The contractors are given access to the system to ensure all the workers who are assigned to do the work have the required training and qualification. This gets checked prior to commencing work. The system will also flag expired license or if a refresher training is required.

Information on the safety training and auditing to manage safety qualifications for delivery of the Plan are provided in the D2018/00674 Victorian Bushfire Mitigation Plan.

7.1.2. Technical Qualification

Transgrid will be engaging with Victorian based easement Contractor's familiar with and satisfy ESV compliance requirements. As part of Contractor management, Transgrid ensures the Contractors satisfy Transgrid's expectations and requirements on competencies for carrying out maintenance any work on Transgrid's network and easements. Transgrid requires Contractors to have achieved mandatory qualifications, experience and training. Information on the technical qualifications of competent staff and Contractors to ensure the Plan is implemented correctly, and the auditing to ensure they are competent is provided in the D2018/00674 Victorian Bushfire Mitigation Plan.

Transgrid will be engaging with Victoria based easement and transmission line contractors familiar with and satisfy ESV compliance requirements as stated in this plan. Transgrid ensures that all inspectors have the following qualifications by specifying the requirement in its contracts. Transgrid requires staff and contractors to have the following mandatory qualifications:

- Transmission Line Inspector Qualifications (required for completing all vegetation maintenance activities):
    - UET30512 – Certificate III in ESI Power systems transmission overhead. Transgrid provides the training for this course.
    - Suitably Qualified Arborist Qualifications (required for completing all type of easement inspections to identify Hazard tree as per the Code Schedule 1 clause 9.2, refer to section 4.6.5)

- Certificate II in ESI - Powerline Vegetation Control
- National Certificate Level III in Arboriculture, which includes the “Perform a ground-based tree defect evaluation" unit of competency, or an equivalent qualification and has at least three years of field experience in assessing trees.
- Easement Clearance Worker Qualifications (required for completing all vegetation maintenance activities):
    > Certificate II in ESI - Powerline Vegetation Control

Further details about roles and skills (as defined by VESI) along with core and elective units are provided in Appendix E. It is expected that the contractor will have a current certificate specifying satisfactorily completion of a training course in tree clearing, approved by Energy Safe Victoria as specified in the Electricity Safety (General) Regulations 2019.

The Contractor will be authorised as per the Electricity Safety (General) Regulations 2019.

The monitoring of authorisation of staff and compliance to Electricity Safety (General) Regulations 2019 is managed in Transgrid’s online Authorisation System. The system will contain the following information to ensure staff are qualified, experienced and trained and hold a valid and current qualification to implement the Plan. These include:

- Transgrid Vegetation Skills and Training Matrix modelled on VESI matrix (to ensure competency personnel undertaking tasks related to electric line clearance).
- Skills required to perform vegetation management safety at Transgrid.
- Staff details and their qualifications. It is the responsibility of the Contractor to maintain the currency of staff details, their qualifications and use of Registered Training Organisation (RTO). Pegasus system will be the repository tool that contains all the staff’s competency detail.
- Processes relevant to the management of training records (initial and refresher).
- Induction and authorisation processes for all new ELC personnel.
- Authorisation details of staff, including Contractor staff, is maintained in our Authorisation System.
- It is the responsibility of the Contractor to monitor the expiry date of their skills, which will trigger notifications to ensure the skills are updated before working for Transgrid.
- Identification of skills training provided via a RTO or internally by Transgrid.
- ELCMP induction.

7.1.3. Non-conformities to Authorisation Requirements

To ensure that competent staff are being allocated to site audits will be conducted as per Section 6.2, more specifically under Easements and Access Tracks Performance and Quality Audit Process, to identify staff of Contractor that are on site without the required training or qualification. Non-compliant staff will be expelled from site and disciplinary action undertaken. Transgrid’s response to such an event and the consequence to the Contractor will be remedied through the contractor performance management processes and discussed by the responsible team leader at contractor review meetings. Corrective actions will be managed through CAMMS.

The Contractor is required to send updated training matrix of staff on a periodic basis to ensure they are compliant to VESI requirements.

7.2. Dispute Resolution Procedure (Regulation 9(4)(r))

Transgrid ensures that landowners' details and any access challenges and conditions are recorded against the property in Transgrid Spatial System (TSS). Landowners includes public authorities. This information is maintained under Transgrid's privacy policy. The intention is to minimise the occurrence of disputes by ensuring Transgrid and our Contractors satisfy and overcome the landowners' access conditions and challenges. Refer to Section 4.4.1 for information on consultative process for landowner.

The easement maintenance scenarios that require cooperation with landowners are:

- Inspection and/or pruning of vegetation on easement.
- Inspection and/or pruning of *Hazard Trees* on/off easement.
- Urgent removal trees when the tree either has fallen or become damaged and is to be removed to keep the Minimum Clearance Space for a span of electric line as specified in the Regulations and as assessed by a suitably qualified arborist.

The letter to be issued to in the above scenarios is attached in Appendix D.

For the first scenario, a dispute is likely to occur if the landowner does not provide Transgrid access to Transgrid's easement to inspect and/or maintain the easement. In such instances, the field officer (Contractor representing Transgrid) aims to resolve the dispute without escalation, by communicating Transgrid's responsibility and authority to perform such work under the *Electricity Safety Act 1998*. If landowner consent is still not received, the dispute is escalated to the Contractor's manager to involve Transgrid's Easement Maintenance Manager. The Easement Maintenance Manager will issue the letter prior to entering the land without landowner permission to complete the required easement maintenance work before a safety risk is realised. The Division 3 of the Regulations outlines requirements for notification, consultation and dispute resolution regarding Electric line clearance works.

An outline of the content in the letter sent to targeted landowners requesting consent is listed below. The landowners of interest are owners or occupiers of the property when the tree is within the boundary of a private property, or if the tree is on land that is contiguous to private property and the use of that property may be affected during the cutting or removal.

Transgrid communicates our obligation under the Victorian Electricity Safety Act 1998 to ensure the transmission line does not cause a safety risk to the landowner and general public. Consent, and any conditions, is received via email (to community@Transgrid.com.au) or phone call (1800 222 537), which is then communicated to the Easements Manager. The Easements Manager then communicates the consent to the Contractor to complete work.

Inspection of vegetation or hazard trees on/off easement.

- The letter will state when inspections start and duration of the inspections, the next steps in remediating any issues found and that Transgrid bears the cost of this work.

Pruning of vegetation or hazard trees on/off easement.

1. Where vegetation is on easement:

> The letter will state that Transgrid will be undertaking the vegetation or tree(s) pruning works in accordance with our easement terms, and states that it is at no cost to the landowner. Images of the vegetation are attached to the letter.

2. Where vegetation or hazard tree(s) are off easement:

> The letter will state that Transgrid will contact the landowner to obtain consent prior to pruning of vegetation or tree(s) and at no cost to the owner. Images of the vegetation or hazard tree(s) are attached to the letter. The next letter is issued when the landowner refuses to provide consent.

3. Details of whether the vegetation or tree to be cut or removed is:

> On private or contiguous or public land.

> A tree of cultural or environmental significance.

> Listed in a planning scheme to be of ecological, historical or aesthetic significance.

4. Details of the intended cutting or removal of trees.
5. Details of the impact that the intended cutting or removal may have on the landowner's use of their land during the cutting or removal. This only applies to landowners of private land.

Electricity Safety (Electric Line Clearance) Regulations of 2020 Notice.

- A formal notice under the *Regulations* is sent to the landowner when they cannot be contacted or refuses to provide consent for pruning of a hazard tree(s). In accordance with the Act, Transgrid is allowed to cut the tree(s) without landowner permission as written notice is given to the landowner. Transgrid will provide a set timeframe for Transgrid to complete the required works.
- Each notice will include requirements, such as safety information.

Details of the consultation procedure Transgrid will follow.

1. Transgrid contact details, including the contact details for all enquiries regarding vegetation and the intended cutting or removal of trees.
2. States the number of days on which, or a period during which, Transgrid intends that the intended inspection, and/or cutting or removal will commence. The first day of which is:

- After 14 days from the date of the notice; and
- Less than 60 days from the date of the notice.

3. If no resolution is obtained, then a dispute/complaint can be lodged with the Energy and Water Ombudsman (Victoria) provided the complaint does not involve electrical safety or a breach of the Code of Practice. Complaints in these latter categories should be referred to Energy Safe Victoria.
4. Transgrid advises the landowner to refer the matter to Energy and Water Ombudsman Victoria Advice for any dispute and provides the details on how to obtain access to Transgrid Complaints and Enquiries Management Policy.
5. The notification requirements to landowner that is a Council (when the tree is on land that is managed by a Council) is as follows:
6. A written notice is to be published unless the cutting or removal of vegetation is urgent (refer to Section 4.4.2).

7. The notice is to be published in a newspaper circulating generally in the locality of the land in which the tree is to be cut or removed. The notice will also be published on Transgrid's external website.

- The notice must:

> Describe the cutting or removal that Transgrid intends to undertake.

> States the number of days on which, or a period during which, Transgrid intends that the intended inspection, and/or cutting or removal will commence. The first day of which is:

  - After 14 days from the date of the notice; and
  - Less than 60 days from the date of the notice.
  - A summary of Transgrid's dispute process is outlined in the Transgrid Complaints Handling Policy, which is available on Transgrid's website. Electric Line Clearance Management.

8. Change from previous revision

Table 12 Change from previous version

Revision No.	Approved By	Comment
1	Energy Safe Victoria	As per ESV Letter Ref: CM-9509, Approval Of Electric Line Clearance Management Plan This public version is identical to the full version with exception of removal of sensitive configuration information. As reviewed and approved by ESV 31st of March 2021
2	Executive General Manager of Network	• As per ESV Letter Ref: CM-11390, 11515, ELCMP Evaluation CM-12236 • Added a description on the current process of recording the inspection outcomes on each span as part of the asset inspection process and creating issues and defects with the appropriate defect coding in the relevant systems in section 4.6.4.2 • Changes in Vegetation Clearance section 4.6.2.2 • Previous clearance on the centreline of the structure has been corrected to start from the conductor resulting in the reduction of minimum clearance space but no actual impact on the actual amount of area of clearance. Added information for Line X1 and 60 in 4.6.3 to 4.6.5, Appendix A, Appendix C Other editorial changes: • Re-numbered sections, change in document template and format, fixed cross references. • Additional information on Berrybank Line 2 (BB2), aerial images, general SLD and location, • Update the current contact detail in section 5 Accountability

Revision No.	Approved By	Comment
		• Version has been reviewed by ESV per Letter Ref 12236-17 Dated 13 August 2024.

9. References

Table 13 Document References

Referenced / Incorporated	Document Number (if applicable)	Document Name	Document Revision
Referenced	N/A	Electricity Safety Act 1998 (Victoria)	01-Jan-21
Referenced	N/A	Electricity Safety (Electric Line Clearance) Regulations 2020	S.R. No. 50/2020
Referenced	N/A	Victorian Blue Book 2022	2022
Referenced	N/A	Transgrid's Environmental Handbook	2021
Referenced	D2018/00673	Electricity Safety Management System (ESMS)	3
Referenced	D2023/01113	Environmental Assessment Framework - Victoria	0
Referenced	D2012/02831	Document and Records Management	5
Referenced	D2012/15325	Power System Safety Rules	5.4
Referenced	D2018/00674	Victorian Bushfire Mitigation Plan	4
Referenced	D2021/00073	AMS and ENSMS Audit Plan	3
Referenced	D2016/06839	Transmission Lines and Easements Condition Data Collection Instruction	3
Referenced	D2017/01717	Corrective Maintenance Process	1
Referenced	D2016/15009	Maintenance Program – Variation Process	1
Referenced	D2009/09991	Use of Pesticides	7
Referenced	D2020/00269	Non-Prescribed Maintenance Plan	4
Referenced	D2003/2398	Easement and Access Tracks Maintenance Plan	17
Referenced	D2003/2422	Control Assurance Review (CAR)	11

10. Attachments

Appendix A Easement information in TSS

Appendix B TSS Spatial Datasets

Appendix C Asset Information

Appendix D Easement Works Notification Form

Appendix E Transgrid Vegetation Worker Skills and Training Matrix

Appendix F Clearance Comparison between Blue Book 2022 and PSSR

Appendix A Easement information in TSS

A.1 Berrybank Transmission Lines

BBTS and BBWF Network Assets are located approximately 50 km southwest of Ballarat, and 10 km north of Berrybank, Victoria. The connecting transmission line (approximately 7.5 km in length) runs south east from BBTS to the BBWF, following the alignment of Padgetts Lane. Land use along the alignment is predominantly private property, used primarily for agriculture, with cropping, sheep and cattle grazing observed.

The topography of the site is generally flat with gently undulating countryside. A 5m wide access track is provided to BBTS from Willowvale Road, Mount Bute.

In broad terms, the assets that are within the scope of this plan are:

- Substation equipment.
- Property under the control of Transgrid.
- Secondary systems, including metering systems.
- Transmission line and associated fittings and fixtures.
- Easement.

For the operation of BBTS, Transgrid interfaces with another major electricity company (MEC) AusNet Services. For the operation of BBWF, Transgrid interfaces with the windfarm generator Union Fenosa. Appendix C contains more information on the operational interface between these connected parties.

BBTS, BBWF and Line BB1/BB2 are on High Bushfire Prone land based on the spatial data provided by CFA to Transgrid's Spatial Information and Survey business group.

A.1.1 Berrybank Terminal Station (BBTS)

The Berrybank Terminal Station is connected to the existing 220 kV transmission network, specifically at the transmission line that runs between Terang and Ballarat Terminal Stations. BBTS is located at Mount Bute, approximately 1.5 km off Lismore-Scarsdale Road or approximately 1.4 km off Willowvale Rd.

A.1.2 220kV Line BB1/BB2

The 220 kV double circuit transmission line connects the Berrybank Windfarm Substation to the Berrybank Terminal Station to enable electricity to flow from the Berrybank Wind Farm to the Victorian transmission network.

The line is approximately 7.5 km long on a 50 m easement. The structures used are of double circuit single steel pole. The line crosses over Willowvale Road and Lismore Road, Wallindue Road and Padgetts Lane.

The approximate location of the BBWF and BBTS-BBWF is shown in the table below.

Line BB1/BB2: The easting (m) and northing (m) of the first and last structure is provided in the below table. Most of the transmission line is in parallel with Padgetts Lane, in the road corridor, which is taken into careful consideration to eliminate, if not possible to reduce to AFAP, the bushfire risk during the design of the line.

Table 14 Berrybank Structure Easting and Northing

Line	Structure Number	Easting (m)	Northing (m)
BB1	1	715779.9	5803958.9
BB1	24	720732.2	5799013.1
BB2	2A	715720.5	5803771.8
BB2	24A	720670.6	5799011.1

A.1.3 Berrybank Substation (BBWF)

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

The neighbours, in order of increasing distance from the BBWF are as follows:

- BBW is located off Padgetts Lane.
- The town Lismore, which is approximately 20 km southwest of BBW.

A.2 Line X1/X9 Red Cliffs to Buronga 220 kV (Red Cliffs to border)

The transmission line X1/X9 is a new 220 kV transmission line that connects Buronga Substation in NSW with Red Cliffs Terminal Station in Victoria, constructed as part of Project Energy Connect.

The line section that sits in Victoria is approximately 1.5 km long (out of 23.9 km length of full line). The structures use dual circuit steel poles holding both the X1 and X9 line on each structure. The line crosses over Murray river, across Kings Billabong Park, and terminates at Red Cliffs Terminal Station.

The approximate location of the Line X1/X9 and its coordinate is shown in the picture and table below.

Figure 6 Line X1/X9

Table 15 Line X1/X9 Structure Easting and Northing

Structure Number	Easting (m)	Northing (m)
Ref Cliffs Gantry (SWT3170000) AusNet owned	-323094.146	1183281.295
1 (SWT3170001)	-323014.585	1183342.297
4 (SWT3170004)	-322624.535	1184054.532

A.3 Line 060 Jindera to Wodonga 330 kV (Span 322-323)

Jindera to Wodonga line 060 is a 330 kV single circuit steel tower line built in 1980. Transgrid scope and portion is 22 km long with approximately 600 m in Victoria. The line ownership and operational control changes mid line, where the remainder of the line to Wodonga is owned and operated by AusNet. The first structure is owned by Transgrid, however the ownership boundary is on the second tower from the border that is owned by AusNet.

The approximate location of the Line 060 and its coordinate is shown in the picture and table below.

Figure 7 Line 060 approximate Location

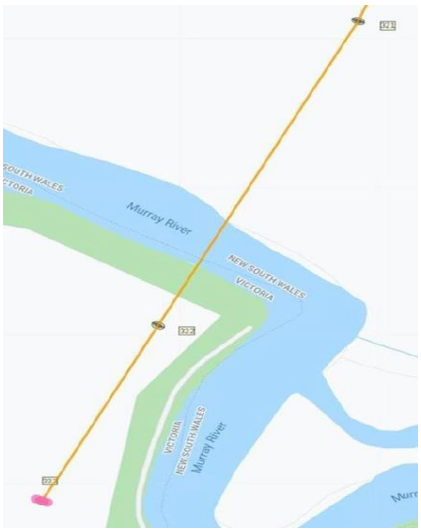


Table 16 Line 060 Structure Easting and Northing

Structure Number	Easting (m)	Northing (m)
321 (SWT1174321) NSW Structure	103075.593	1005650.473
322 (SWT1174320) VIC Structure, Transgrid owned	102836.145	1005140.088
323 (SWT1174323) AusNet owned. AusNet Str 401	102697.295	1004844.137

Appendix B TSS Spatial Datasets

Table 17 TSS Spatial Datasets

Type of Dataset	Source	Source Type	Implementation status in TSS
Native vegetation	Native vegetation https://discover.data.vic.gov.au/dataset/native-vegetation-modelled-2005-ecological-vegetation-classes-with-bioregional-conservation-sta Native Vegetation regulation https://discover.data.vic.gov.au/dataset/native-vegetation-regulation-location-2017 Tree Density https://discover.data.vic.gov.au/dataset/vicmap-vegetation-tree-density-dense	Shapefile	Available via SOM/GSA
Council planning scheme overlay for historical, cultural, environmental or aesthetic significance	https://discover.data.vic.gov.au/dataset/planning-history-scheme-overlay-vicmap-planning	Shapefile	Available via SOM/GSA
Heritage register National / Commonwealth / World Heritage is already available	https://discover.data.vic.gov.au/dataset/victorian-heritage-register	WMS feed	Available via SOM/GSA
Victorian Aboriginal heritage register	https://achris.vic.gov.au/#/dashboard Alternatively, use publicly available sensitivities at: https://achris.vic.gov.au/#/onlinemap	Online Data	Application was denied. Data not publicly available in appropriate format.
Threatened flora & fauna list	Flora data : https://discover.data.vic.gov.au/dataset/victorian-biodiversity-atlas-flora-records-unrestricted-for-sites-with-moderate-to-low-spatial- https://discover.data.vic.gov.au/dataset/victorian-biodiversity-atlas-flora-records-unrestricted-for-sites-with-high-spatial-accuracy	Shapefile	Initiated
	Fauna data: https://discover.data.vic.gov.au/dataset/victorian-biodiversity-atlas-fauna-records-unrestricted-for-sites-with-moderate-to-low-spatial- https://discover.data.vic.gov.au/dataset/victorian-biodiversity-atlas-fauna-records-unrestricted-for-sites-with-high-spatial-accuracy	Shapefile	Available via SOM/GSA
Flora and fauna as listed as threatened	Flora and Fauna Atlas data	Unknown	Available via SOM/GSA

Type of Dataset	Source	Source Type	Implementation status in TSS
with a status of ‘vulnerable’, ‘endangered’ or ‘critically endangered’.			
Threatened invertebrate fauna list	Fauna Atlas	Unknown	Available via SOM/GSA
Threatened vertebrate fauna list.	Fauna Atlas	Unknown	Available via SOM/GSA

Appendix C Asset Information

C.1 Plan and Profile

C.1.1 Operational Boundary Points

This information is not available in the public version of this plan.

C.2.1 Berrybank

The specific operational interface points at BBTS and BBW are shown in Figure 8 and Figure 9, respectively.

Figure 8 Operational Boundary Points between Transgrid, AusNet Services (220 kV lines)

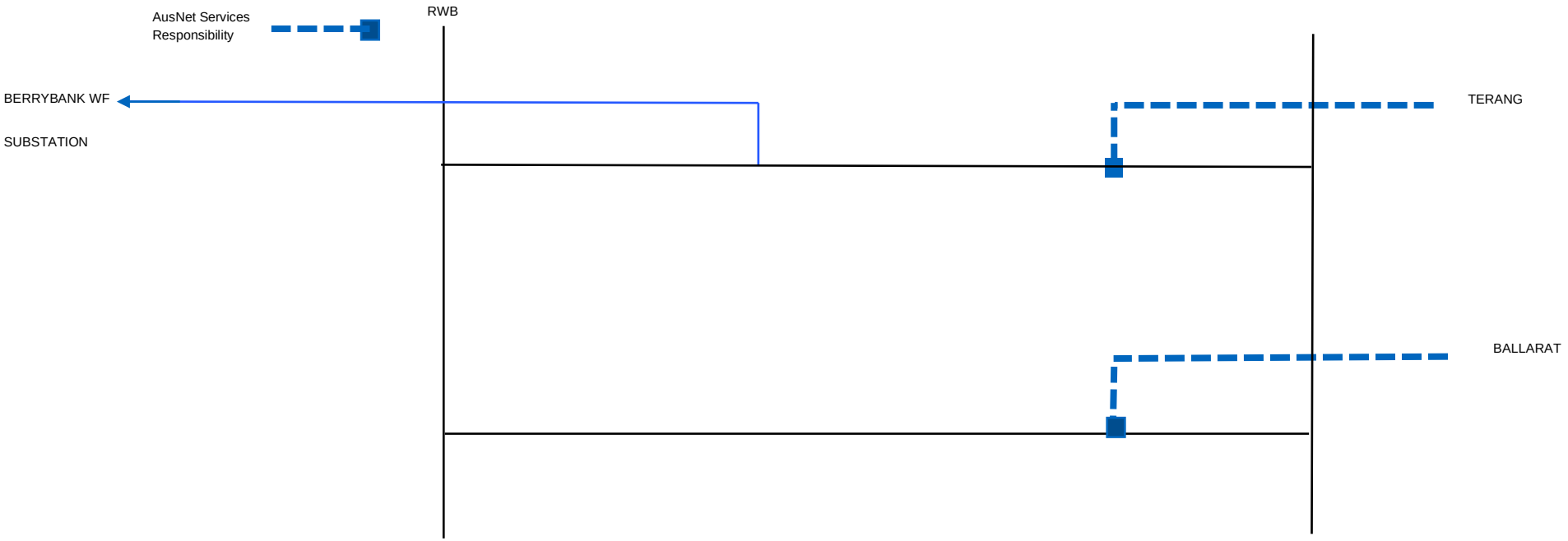
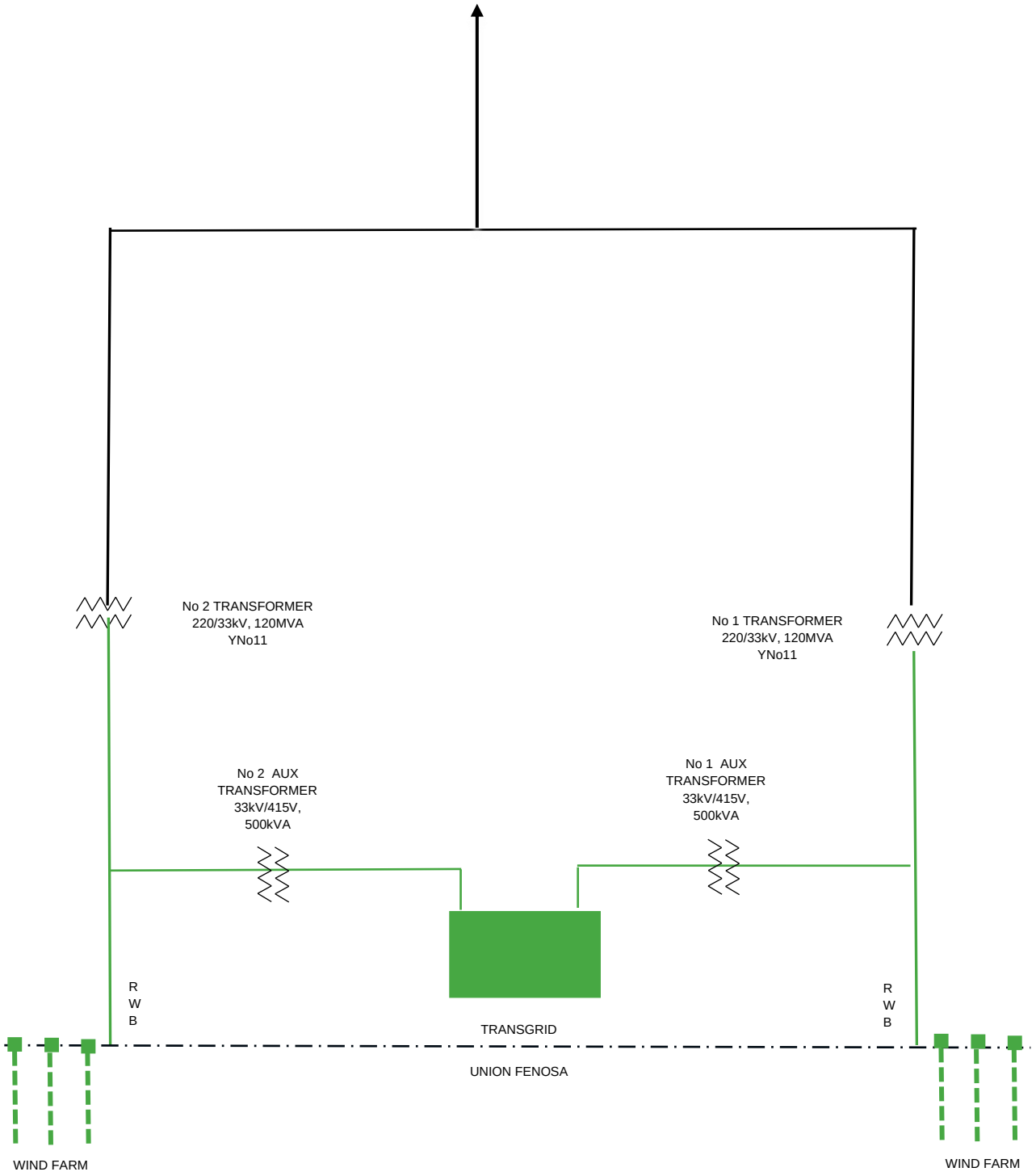
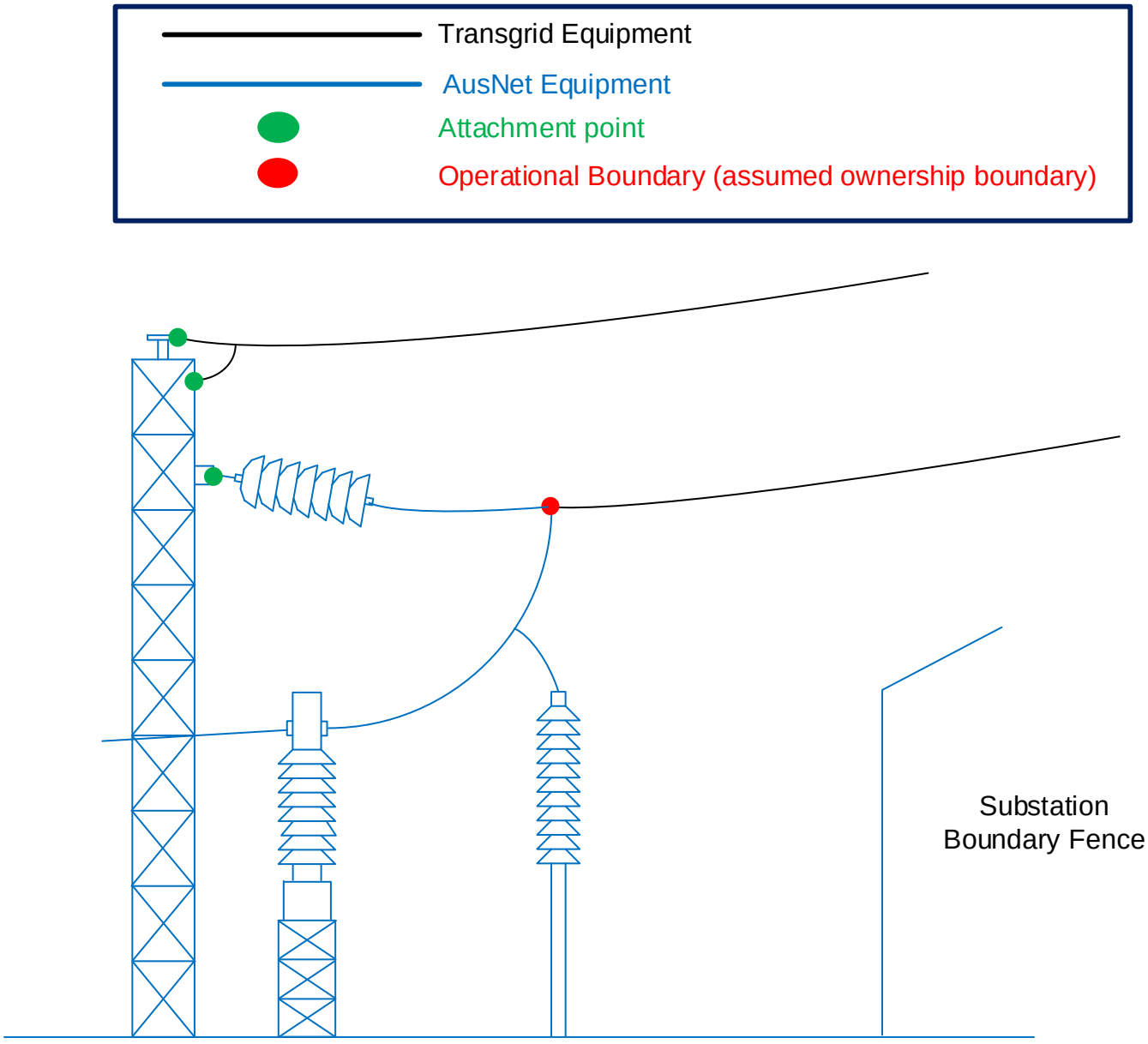


Figure 9 BBW Operational Boundary Points between Transgrid and Union Fenosa (33kV) – As Built Date 21 July 22



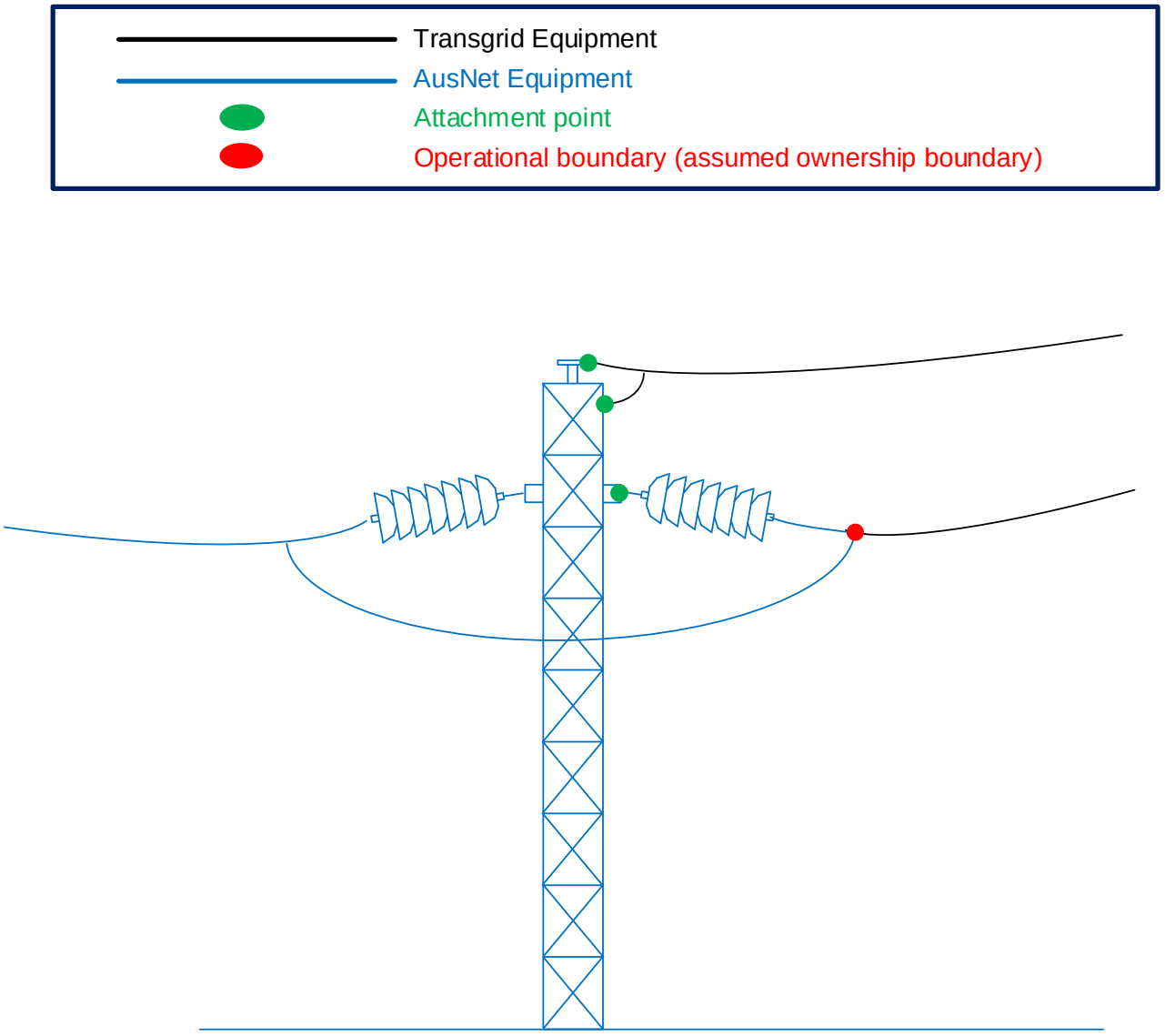
C.2.2 Operational Boundary for Line X1/X9

Figure 10: Line X1/X9 operational boundary



C.2.3 Operational Boundary for Line 060

Figure 11 Line 060 operational boundary



C.2 Maintenance Task Frequency

The maintenance tasks and their frequency for Line BB1/BB2 is specified in the D2020/00269 Maintenance Plan – Non-Prescribed Assets.

Meanwhile the task and frequency for Line X1/X9 and 060 is specified in the D2003/2398 Maintenance Plan – Easement and Access Tracks.

An extract of the maintenance requirement for the easement is provided in the table below.

Table 18 Easement Maintenance Requirement

Customer	Ellipse Part No. Line Number	Structure Type	Section	Easement Inspection	Scheduled Easement Condition Based Maintenance
Berrybank – Global Power Generation	SWT3379, Line BB1/BB2	DC SP	Berrybank 220 kV connection	Yearly (Ground)	3 years
Prescribed	SWT3170, Line X1/X9	SC ST	Red Cliffs Buronga 220 kV connection	Yearly (LiDAR)	6 years
Prescribed	SWT1174, Line 060	SC ST	Jindera Wodonga 330 kV connection	Yearly (LiDAR)	6 years

C.3 Key Documents

Table 19 Key Documents

Document	Description
D2003/2398 Maintenance Plan – Easement and Access Tracks	Transgrid standard easement inspection and maintenance activities that details scope and frequency applicable to all assets in Transgrid's network.
D2020/00269 Maintenance Plan – Non-prescribed Assets	Non-standard easement inspection and maintenance activities, scope and frequency, if any, applicable to BBTS-BBWF.
D2016/06839 Transmission Line and Easement Condition Data Collection	Defines a systematic approach to identify and record easement data during inspection and maintenance activities for easements.
D2014/18781 AMS and ENSMS Audit Procedure	Describes the procedure to audit key artefacts in the AMS and ESMS that demonstrate our compliance to Vic regulations.
D2003/2422 Control Assurance Review (CAR)	Describes the process to be used by Asset Management in conjunction with the Works Delivery group to plan, schedule, and carry out targeted reviews (CAR) related to the operations and maintenance component of the asset lifecycle.
Environment Effects Statement (EES) or other environmental approvals and permits	Not required for Berrybank, Line X1/X9 and 060.

C.4 Implementation audit

Table 20 Implementation Audit

Scope	Audit Type – Desktop/Field	Completion Due Date		
		Berrybank	Line X1/X9	Line 060
Cutting or removing habitat for threatened flora and fauna with a status of 'vulnerable,' 'endangered' or 'critically endangered'. Vegetation listed in a planning scheme to be of ecological, historical or aesthetic significance. Heritage Register. Threatened Invertebrate Fauna List Threatened Vertebrate Fauna List	Desktop	Energisation	Existing. The due diligence were completed as part of the X9's construction planning and new deed obtained with Vic Parks	Existing
Victorian aboriginal heritage register	Desktop	Practical Completion	Existing	Existing
Vegetation easement training and authorisation in the Authorisation System, Pegasus (refer to Section 7.1.2).	Desktop	Energisation	Existing	Existing
Implementation of the Plan and the Maintenance Plans	Desktop and Field	2021 (completed)	TBA	TBA
Vegetation Clearance as part of Bushfire Mitigation Management Audit	Desktop and Field	2021 (completed)	TBA	TBA

Appendix D Easement Works Notification Form

See next page.

ABN 70 250 995 390
180 Thomas Street, Sydney
PO Box A1000 Sydney South
NSW 1235 Australia
T (02) 9284 3000
F (02) 9284 3456

Customer Name:	
Address:	
Contact No:	
Line/Location:	
Anticipated Work Date:	
Last Inspection Date (Urgent Cutting):	

Dear Property owner,

Re: Vegetation Maintenance Work

Transgrid manages and operates the high voltage transmission network assets in Victoria, NSW and the ACT. Protecting the safety of the public and our staff is our highest priority in providing a reliable and efficient transmission service for the communities we serve.

Under the *Electricity Safety Act 1998 and Electricity Safety (Electric Line Clearance) Regulations 2020 (Victoria),* Transgrid has the responsibility and authority to maintain vegetation on and off easement to protect the electricity infrastructure.

Recent inspections of the transmission line easement on your property has identified vegetation that requires management to meet the regulatory requirements. Vegetation, predominantly trees and tall shrubs with the potential to intrude into minimum vegetation clearance must be managed clear of electricity assets to prevent bushfires or other risks.

Vegetation works will be undertaken between **Date** and **Date**, by an authorised Transgrid contractor, at no charge to the landowner/occupier. All Transgrid employees and their contractors are issued with identification as authorised representatives.

☐ **Pruning Works**

Pruning works will be carried out in accordance with the regulatory requirements and to Australian Standard AS 4373-2007 'Pruning of Amenity Trees' as far as practicable.

No action is necessary by you unless you are concerned about the vegetation being pruned. If you require consultation, please contact Transgrid on the number provided below or send us an email.

☐ **Vegetation Removal**

Whilst pruning is the preferred option, in some cases, it may not be possible to achieve the required clearances without compromising the vegetation's shape, character and health. In these instances, a

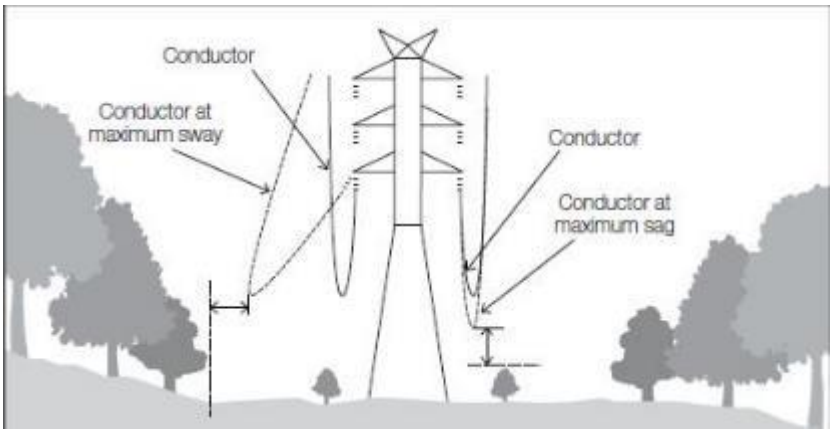
complete removal is the preferred management practice. No mature vegetation will be removed without prior consultation with you. *Where vegetation exists in a hazardous state and poses a threat to electrical assets, Transgrid may undertake immediate preventative works without prior notice*

Please contact Transgrid on the number provided below or send us an email.

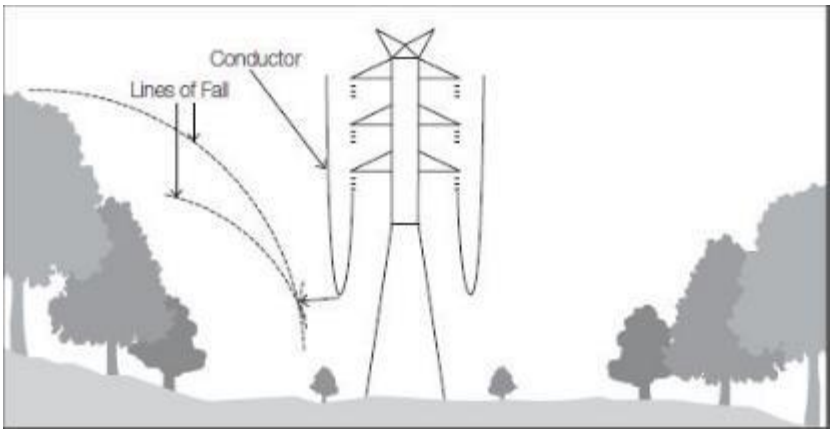
Access

Transgrid requires access to your property to undertake the proposed works to meet Clause 30 of the Code requirements. The diagrams below illustrate how trees may be pruned or removed. in order to protect electricity infrastructure. Please contact Transgrid on the number provided below or send us an email.

End View of the Transmission Line



Trees Adjacent to the Transmission Line



Vegetation of Significance

Transgrid consults with landowners and local, State and federal Government agencies to identify vegetation of significance located within the area of its network assets.

If vegetation is off cultural, historical or environmental significance, please contact Transgrid on the number provided below or send us an email explaining the impact of proposed cutting or removal of vegetation.

Debris Management

Vegetation (branches) that have been pruned or removed will be cleared away as soon as practicable. Where safe to do so, larger limbs or logwood will be cut into manageable lengths and remain onsite (non-urban areas only). All stumps will be cut at ground level where practicable. If any chemical treatment (herbicide application) is undertaken, you will notified of any potential impact.

☐	**Urgent Cutting- due to Emergency/Fault/Storm**

Where vegetation exists in a hazardous state and poses a threat to electrical assets, because of an Emergency, Fault or Storm event, Transgrid may have to undertake urgent preventative works without prior notice.

It may be the responsibility of the owner of the vegetation (where it existed) to dispose of it. Where possible you will be advised of the locations where you are responsible for the disposal of vegetation that Transgrid has actioned.

TRAINING OF EMPLOYEES

All personnel involved in vegetation management works have been suitably trained in relation to the task they are performing. Transgrid utilises authorised and trained contractors to carry out these works.

Easement Planting Restrictions

Transgrid strongly encourages only planting of low growing vegetation on the easement to reduce the need for ongoing inspections and maintenance. Restrictions may be placed regarding the planting of vegetation on within the transmission easements on your land.

For any advice regarding the planting of vegetation on or adjacent to transmission easements, or any other questions or concerns regarding any matter stated above, please contact our Community Information Line on 1800 222 537 or via email at community@Transgrid.com.au.

Thank you in advance for your cooperation.

Yours faithfully

Transgrid Community Relations

Appendix E Transgrid Vegetation Worker Skills and Training Matrix

Table 21 Vegetation Worker Skills and Training Matrix

Frequency	Qualification/License Requirements		Transgrid Worker Roles: Program Delivery Manager Works Leader Easement Officer			Contractor Worker Roles: Cutter working from EWP Ground Crew Specialised Plant Operator Tree Cutter							
	Qualifications	Qualification / Competency Standard Unit (CSU) number	Arborist (not required)	Assessor Trainee (not required)	Assessor	Arborist	Assessor	Cutter working from EWP	Cutter working from EWP Trainee (not required)	Ground Crew	Specialised Plant Operator	Specialised Plant Operator Trainee (not required)	Tree Climber
	Certificate II in ESI - Powerline Vegetation Control	UET20312			M		M	M		C	M		M
	National Certificate III in Arboriculture (must include "Perform a ground-based tree defect evaluation" or an equivalent qualification, and have minimum 3 years of field experience)		M		C	M							
	Licence												
	High Risk Work Licence - Boom-type Elevating Work Platform (WP)							M	C				
	Core Competency Standard Units												
	Apply Occupational Health Safety regulations, codes and practices in the workplace	UEENEEE101A		C	M	M	M	M	C	C	M	C	M
	Comply with sustainability, environmental and incidental response policies and procedures	UETTDREL13A		C	M	M	M	M	C	C	M	C	M
	Working safely near live electrical apparatus as a non-electrical worker	UETTDREL14A		C	M		M	M	C	C	M	C	M
	Operate and maintain chainsaws	AHCARB205A		C	M		M	M	C	C	M	C	M
	Plan the removal of vegetation up to vegetation exclusion zone near live electrical apparatus	UETTDRVC23A		C	M	M	M	M	C	C	M	C	M
	Monitor safety compliance of vegetation control work in an ESI environment	UETTDRVC27A		C	M		M	M	C	C	M	C	M
	Elective Competency Standard Units												
	Use climbing techniques to cut vegetation above ground near live electrical apparatus	UETTDRVC21A											M
	Assess vegetation and recommend control measures in an ESI environment	UETTDRVC24A		C	M		M						
	Use elevated platform to cut vegetation above ground level near live electrical apparatus	UETTDRVC25A						M	C				
	Use specialised plant to cut vegetation above ground level near live electrical apparatus	UETTDRVC32A									M	C	
	Apply pruning techniques to vegetation control near live electrical apparatus	UETTDRVC33A						M	C		M	C	M

Frequency	Qualification/License Requirements		Transgrid Worker Roles: Program Delivery Manager Works Leader Easement Officer			Contractor Worker Roles: Cutter working from EWP Ground Crew Specialised Plant Operator Tree Cutter							
	Qualifications	Qualification / Competency Standard Unit (CSU) number	Arborist (not required)	Assessor Trainee (not required)	Assessor	Arborist	Assessor	Cutter working from EWP	Cutter working from EWP Trainee (not required)	Ground Crew	Specialised Plant Operator	Specialised Plant Operator Trainee (not required)	Tree Climber
	Undertake release and rescue from a tree near live electrical apparatus	UETTDRVC34A											M
	Undertake standard climbing techniques	AHCARB204A											M
	Recognise plants	AHCPCM201A		C	M	M	M	C	C		C	C	C
	Licence to operate a boom-type elevating work platform (boom length 11 metres or more)	TLILIC2005						M	C				
	Initial training												
Initial training	Apply ESI safety rules, codes and procedures for work on or near electrical apparatus	UETTDRRF01B			M	M	M	M		M	M		M
	Prepare to work safely in the construction industry	CPCCWHS1001		M	M		M	M	M	M	M	M	M
Frequency	Training2												
1 Year	Provide cardiopulmonary resuscitation	HLTAID001		M	M	M	M	M	M	M	M	M	M
1 Year	Perform EWP controlled descent escape	UETTDRRF08B						M	C				
1 Year	Perform EWP rescue	UETTDRRF03B						M	C				
1 Year	Provide first aid in an ESI environment	UETTDRRF10B		M	M		M	M	M	M	M	M	M
1 Year	Safe Approach Distances - Vegetation Work			M	M	M	M	M	M	C	M	M	M
1 Year	Undertake release and rescue from a tree near live electrical apparatus	UETTDRVC34A											M
3 Yearly	Manual Handling			M	M	M	M	M	M	M	M	M	M
3 Yearly	Control traffic with stop-slow bat	RIIWHS205D		C	C		C	M	M	M	M	M	M
3 Yearly	Implement traffic management plan	RIIWHS302D		C	C		C	M	M	M	M	M	M
3 Yearly	VESI Environmental Framework/ Transgrid Environmental Rules E1-E4 for TG / E1-E3 for Contractors			M	M	M	M	M	M	M	M	M	M
3 Yearly	VESI Safety Framework/ Transgrid Induction eLearning WHSE and Your Guide to Staying Alive			M	M	M	M	M	M	M	M	M	M

Legend
M - Mandatory - required by VESI
C - Conditional - a person may be required to have this Qualification, Licence, Competency Unit, or training for the works being performed.

Appendix F Clearance Comparison between Blue Book 2022 and PSSR

All clearances are in m. All Transgrid personnel must be either Authorised by PSSR or instructed by Authorised person. Below is the comparison of the Safe Approach Distance (SAD) from Victorian Blue Book 2022 section 6.2 to 6.4 against Transgrid's PSSR, which shows to be the same for most operating AC Voltage or slightly greater, or conservative at different scenario as highlighted in red.

Table 22 Clearance Comparison – Safe Approach Distance - Instructed or Authorised Persons

Nominal phase to phase AC voltage (kV)	Blue Book Section 6.2 Table 1 (m)	PSSR (m)
6.6	0.7	N/A
11	0.7	0.7
22	0.7	0.7
33	0.7	0.7
50	0.75	N/A
66	0.9	1
110	1	N/A
132	1.2	1.2
220	1.7	1.8
275	2.3	2.3
330	2.7	3
400	3.3	N/A
500	3.6	3.9

Table 23 Clearance Comparison – Safe Approach Distance - for vehicles under instructed or authorised persons.

Nominal phase to phase AC Voltage (kV)	Blue Book Section 6.3 Table 3 (m)	PSSR (m)
Low voltage	0.6	N/A
HV up to and including 33	0.7	0.7
50	0.75	N/A
66	1	1
110	1	N/A
132	1.2	1.2
220	1.8	1.8
275	2.3	2.3
330	3	3
400	3.3	N/A
500	3.9	3.9

Transgrid does not utilise insulated plant or treat an insulated mobile plant as uninsulated. All mobile plant would require a Risk Assessment which then determines whether a mechanical restrictions or safety observer is required. If none of the two is available, an outage will be planned to allow for safe work. Refer to the table on the next page for the list of Safe Approach Distance for a mobile plant (whether insulated or not insulated and must be utilising either restrictive device or safety observer as per a RA).

Table 24 Clearance Comparison – Safe Approach Distance – Uninsulated Mobile Plant operated with a safety observer or restrictive devices.

Nominal phase to phase AC voltage (kV)	Blue Book Section 6.4 Table 4 (m)	PSSR (m)
Low Voltage	1	N/A
HV up to and including 33	1.2	1.2
50	1.3	N/A
66	1.4	1.4
110	1.8	N/A
132	1.8	1.8
220	2.4	2.4
275	3	3
330	3.7	3.7
400	4	N/A
500	4.6	4.6

Transgrid

People. Power. Possibilities.

NSW Electricity Networks Operations Holdings Pty Limited (ACN 609 169 959),
as trustee for NSW Electricity Networks Operations Trust (ABN 70 250 995 390).
Registered business name is TransGrid (ABN 70 250 995 390).