



TransGrid

ENSMS – Annual Performance Report

2017 - 2018

31 August 2018

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1. Annual Compliance Reporting

This report provides general information about the performance of TransGrid's Electricity Network Safety Management System (ENSMS) as implemented in accordance with the Electricity Supply (Safety and Network Management) (ESSNM) Regulation 2014 and Australian Standard AS 5577¹. This report has been produced in accordance with IPART's Electricity Networks Reporting Manual (Safety management systems reporting) April 2018.

In the 2017 – 2018 financial year, TransGrid continued to maintain its ENSMS and supporting Management Systems to meet the requirements of the ESSNM Regulation. TransGrid's ENSMS defines the interface and integration of the various corporate frameworks and management systems that implement risk controls to ensure that the ENSMS objectives are met. TransGrid is committed to delivering the following objectives through its ENSMS:

- > the safety of members of the public
- > the safety of person(s) working on the network
- > the protection of property (whether or not belonging to a network operator)
- > the management of safety risks arising from the protection of the environment (for example, preventing bushfires that may be ignited by network assets)
- > the management of safety risks arising from the loss of electricity supply.

TransGrid's ENSMS is supported by the following Management Systems:

- > a Health and Safety Management System certified to AS/NZS 4801
- > an Asset Management System certified to ISO 55001
- > an Environmental Management System certified to ISO 14001.

During the 2017 – 2018 financial year, TransGrid did not record any incidents (safety, environmental or reliability) that met the IPART definition of a 'Major Incident'.

1.1 Safety and reliability of the network operator's network

1.1.1 Programs and activities undertaken to maintain or improve the safety and reliability of the network operator's network

During the 2017 – 2018 financial year, TransGrid continued focus on the worker safety programs initiated in the 2016 – 2017 financial year. In addition to the continual improvement opportunities on existing initiatives, TransGrid implemented further improvement to the Health and Safety Management Systems. These initiatives are targeted to enhance safety culture and continually improve TransGrid's control of the key hazardous events nominated in TransGrid's ENSMS.

System

TransGrid progressed to the next phase of the following existing initiatives:

- > Mobile Plant Framework:
 - Continued deployment and use of the Mobile Plant Framework (MPF) Application to provide live status of plant maintenance and worker competency
 - Creation of reports to identify plant usage and allocation throughout TransGrid.
- > Work and Safety Package (WASP):

¹ AS 5577 – Electricity Network Safety Management Systems

- Updates to the risk and controls based on incident findings and reviews
- Ad hoc report functionality introduced to obtain real-time feedback and request for system updates.
- > Fatigue Self-Assessment tool:
 - Introduction of a fatigue self-assessment tool to be completed in an application (APP). This allows real-time reporting of fatigue issues to the nominated leaders.

These programs are part of the safety process that covers the planning, performing and monitoring of operations where TransGrid is the manager or controller of the worksite.

Leadership

- > Targeted Leadership Training for Frontline Leaders (new initiative):
 - This program is designed to provide our asset-facing crew leaders the appropriate tools to manage a team of workers and to recognise and address issues on site.

Organisational Behaviour

TransGrid progressed to the next phase of the following existing initiatives:

- > Heads Up Safety Conversation Program:
 - The continuation of this program targeted ten conversations with leaders throughout the organisation per month.
- > Safety Day:
 - TransGrid engaged in an organisation-wide Safety Day with the theme of personal responsibility for safety and working in a collaborative manner to achieve safe outcomes. The theme for the 2018 Safety Day evolved from the 2017 Safety Day which addressed organisational issues in the key areas of systems, leadership, organisational behaviour, resourcing and knowledge transfer.

Resourcing

- > Capabilities Framework:
 - Further refinements to the Capabilities Framework for this existing initiative.

Knowledge Transfer

- > Safety Communication Improvements:
 - Introduction of video as a medium to improve safety communication and knowledge transfer (new initiative).
- > Safety in Design:
 - Renewed focus on Safety in Design meetings and inclusion of all relevant stakeholders.
- > Contractor Safety Forum:
 - TransGrid hosted a contractor safety forum with all of its major contractors to share safety knowledge and process improvements across our sector (new initiative).

HSE Requirements

- > TransGrid simplified the presentation of information in the Health Safety and Environment section of TransGrid's internal web portal to assist staff to locate specific guidelines and instructions.

TransGrid also commenced the following programs relating to public safety and cyber security:

- > Installation of Closed Circuit Television (CCTV) cameras:
 - The program of installation of CCTV cameras at TransGrid sites that do not have this function has commenced. Coupled with other detection systems, CCTV allows TransGrid to identify and better respond to unauthorised access incidents leading to greater public safety outcomes.

Biosecurity guidelines

TransGrid responded to changes to Biosecurity legislation and industry wide issues regarding the safety of land traversed to maintain assets. To reduce the risk of introducing or spreading pathogens onto properties while driving for maintenance activities, TransGrid developed a Biosecurity guidance (“Biosecurity in a Box”) kit for field workers. This has been supplied to all TransGrid vehicles used by field workers to enter and traverse properties on a regular basis.

TransGrid communication material was updated with a “Come Clean Go Clean” statement and a description of TransGrid’s approach to managing and complying with property owner’s Biosecurity requirements. TransGrid contractors as well as other agencies and suppliers have contacted TransGrid to request this information so that they can implement a similar approach in their own organisations.

Network reliability

Network reliability is managed across the asset lifecycle to deliver value to the consumer and to manage safety risks arising from the loss of electricity supply. TransGrid continued to deliver a high level of network reliability, with no major reliability incidents and only one reliability incident (as defined by the IPART reporting guidelines) recorded in 2017 – 2018.

As a new initiative in 2017 – 2018, TransGrid has been enhancing its asset risk assessment process through the development of an Asset Analytics Tool. This tool combines what are currently separate inputs to determine the risk of asset failure for critical assets across the network. This work supports the demonstration that TransGrid’s forward capital program will meet the ENSMS objectives.

TransGrid made further revisions and enhancements to its Prescribed Network Capital Investment Process to ensure the most efficient use of capital funds to manage risks on the network and ensure the greatest benefit for consumers. This is an important control to make sure that investment is allocated consistent with the objectives of the ENSMS.

TransGrid commenced a program of work seeking to increase organisational cyber security maturity, targeting aspects of TransGrid’s operational technology environment. Increasing TransGrid’s capability and security posture in this field provides greater certainty and reliability to our digital operations against an increasing threat profile.

Audit of the ENSMS

An IPART-initiated audit of the planning phases of TransGrid’s ENSMS was undertaken in 2017 – 2018 by an independent third party auditor. Table 1 lists non-material non-compliances identified with the audit criteria. The audit findings related to a common theme of Formal Safety Assessment (FSA) communications and stakeholder engagement. TransGrid promptly and proactively addressed each of the non-compliances identified by the audit findings. By the end of the 2017 – 2018 financial year, the auditor assessed that there were no outstanding non-compliances from the audit. TransGrid has notified IPART of this assessment by the auditor.

Table 1: Non-compliances relating to the safety and reliability of the electricity network

Identified non-compliances (Non Material Non-compliant audit criteria)	Actions against non- compliances	Progress of actions
1. TransGrid’s ENSMS supports the objectives and addresses the fundamental requirements of a compliant ENSMS.	> The FSA Communication Plan defines the relevant external stakeholders in Develop stage of all the FSAs were updated. The stakeholders that need to be	All actions were closed by the end of the 2017 – 2018 financial year.

Identified non-compliances (Non Material Non-compliant audit criteria)	Actions against non- compliances	Progress of actions
<p>2. The context of TransGrid's ENSMS has been established as it relates to the planning and preparation aspects of the audit.</p> <p>3. TransGrid's Formal Safety Assessment (FSA) has identified electricity network hazards that could cause an electricity related incident.</p> <p>4. The Formal Safety Assessment has analysed risks associated with all identified electricity network hazards that could cause an electricity related incident.</p> <p>5. Risk control measures and treatments have been identified and evaluated in accordance with the methodologies developed in the planning phase of the ENSMS.</p>	<p>consulted or informed were updated based on the audit feedback.</p> <ul style="list-style-type: none"> > The internal stakeholder communication plan was updated to include a diverse range of internal stakeholders (functional staff and operational staff) in the Develop stage. > The Network Reliability Safety FSA was updated to state the external stakeholders engaged. External stakeholders' feedback was incorporated into the Network Reliability Safety FSA. > The FSAs were updated to: <ul style="list-style-type: none"> (a) Provide information on which internal and external stakeholders were engaged in the Develop stage to confirm the completeness checks. (b) Identify which internal stakeholders are from operations and which are management. (c) Summarise the feedback provided by the stakeholders. > All FSAs (excluding the Worker Health and Safety FSA) were updated with feedback from the implementation of internal stakeholder communication plan for the Develop stage. 	

1.2 Advice to the public about hazards associated with electricity in relation to the network operator's network

1.2.1 Programs and activities undertaken to promote the public knowledge and understanding of electrical network safety hazards

TransGrid continued to deliver public electricity safety awareness programs in 2017 – 2018 in addition to its business as usual project engagement activities. These programs provide safety advice to the public promoting knowledge and understanding of electrical network safety hazards through community engagement, advertising and media relations. These programs are targeted to a broad public spectrum ranging from school children to communities in regional areas on the basis of the key hazardous events identified in TransGrid's ENSMS. During 2017 – 2018, TransGrid also prepared for an industry safety forum 'Emerging Safety Risks in a Changing Energy Market' scheduled for November 2018.

Advertising

In June 2018 TransGrid conducted a month-long print media advertising campaign focussed on public electrical safety awareness in the Australian Capital Territory (ACT). Advertisements appeared weekly in The Canberra Times and Canberra Weekly, with a combined total readership of more than 278,000 per week. These advertisements raised awareness of safety in relation to TransGrid infrastructure in the ACT, specifically regarding ACT-based 15-25 year-olds entering substation sites along with general electricity safety messages. Targeted advertising around aerial patrols (refer to Media Relations below) took place on social media and selected local print media in New England, Riverina, Goulburn, Central West and Canberra, with a combined readership of target publications in excess of 262,000.

Media Relations

In July/August 2017 and April/June 2018 TransGrid conducted regional media campaigns to support the organisation's annual program of aerial patrols inspecting transmission lines and structures for bushfire risks or asset damage. During this campaign a media release was distributed to print and broadcast media in affected regions (Riverina, Murray, Hunter Valley, Mid North Coast, New England, Northern Rivers, Southern Highlands, Illawarra, Central West, Hawkesbury, suburban Sydney and Canberra) outlining the need for bushfire risk assessment and reminding community members to maintain safe practices around transmission towers and substations. The media activity across both patrol campaigns reached a combined audience of more than 448,000 people.

1.3 Management of bushfire risk relating to electricity lines and other assets of the network operator's network that are capable of initiating bush fire

1.3.1 Programs and activities undertaken to maintain or improve the management of bushfire risk associated with the network operator's network

Asset Management Council Excellence in Safety Award

In April 2018 TransGrid was awarded an Excellence Award at the Asset Management Council's 2018 AMPEAK conference. TransGrid was nationally recognised for its innovative and industry leading work in bushfire risk management over the previous 18 months. The improvement of TransGrid's bushfire risk management was largely obtained by engaging stakeholders across the business.

The risk management process involves:

- > identifying the key hazards related to bushfire, such as asset failure and hot works
- > quantifying the probability of failure using degradation models, asset condition data collected in the Asset Inspection Manager (AIM) and statistical analysis
- > evaluating the risk and prioritising assets by risk value

- > developing risk mitigations (such as the maintenance plans) and evaluating their effectiveness.

TransGrid has also initiated the following new programs to promote the safe management of bushfire risk associated with the electricity network:

- > LiDAR response notification program
- > Property owner database update program
- > Spatial systems access track verification program.

A description of these new programs are provided below.

LiDAR response notification program

TransGrid implemented a property owner notification process to establish awareness of the bushfire risk of the vegetation violations on their property. An improved communication channel was opened for property owners to confirm their details and requirements for access to their properties to arrange for the removal of the vegetation.

This has resulted in a significant increase in the quantity and quality of information available to the vegetation maintenance teams. The continuing benefit of the notification process is a reduction in occurrences of negative interactions with property owners leading to more effective vegetation removal and reduced bushfire risk.

Property owner database update program

TransGrid is required to contact property owners when entering their land to access electrical assets and easements. The ability to contact property owners is important, especially during bushfire preparation programs where time is of the essence.

A program has been initiated to review the transmission lines in their current maintenance cycle and obtain and insert more accurate property owner information into the database resulting in a reduction in the effort required to locate property owners prior to entering their land.

In an extension to the data integrity aspect of the program, TransGrid also developed new material for property owners with up-to-date information on maintenance activities and TransGrid's rights and responsibilities. All of the new material now includes a reminder for property owners to contact TransGrid to ensure their contact information is correct.

Spatial systems access track verification program

Several thousand access tracks exist to facilitate the ongoing maintenance and repair of TransGrid's electrical assets and easements. The majority of these tracks are remote and can only be accessed by a vehicle with four wheel drive (4WD) capability. It was identified that a better understanding of the location and condition of access tracks would improve the safety risk assessment process, particularly when multiple possible access tracks are available or misleading tracks (that is, tracks that appear to be access tracks) are present.

TransGrid has initiated an access track verification program to capture verification of access track conditions and locations in the corporate spatial systems and to publish the files to handheld devices. A portion of all access tracks have been successfully verified and work continues to gather local knowledge and increase the amount of verified tracks in the TransGrid spatial information systems.

Audit of the ENSMS

An IPART-initiated audit of the implementation of TransGrid's Bushfire FSA and procedure to prepare IPART's Annual Bushfire Risk Management Report was undertaken in 2017 – 2018. The audit was undertaken by an independent third party auditor. No non-compliances were identified in the audit, as indicated in Table 2.

Table 2: Non-compliances relating to the management of bushfire risk associated with the electricity network

Non-compliant audit criteria	Actions against non-compliances	Progress of actions
0	Not Applicable	Not Applicable

1.3.2 Bushfire risk management report

The TransGrid 2016 – 2017 financial year Bushfire Risk Management report is publically available on the TransGrid website: <http://www.transgrid.com.au>. The report covers the annual period from 1 October 2016 to 30 September 2017.

2. Contextual Information

2.1 Deviation from standards

TransGrid maintains various management systems and follows the business processes and procedures established within its systems for all its organisational functions. Adherence to these systems are ensured by a three line of defence approach incorporating:

1. Compliance Risk Owners – Business Units, Groups and teams
2. Independent review and challenge – Management System reviews and Corporate Risk oversight
3. Independent assurance – Corporate internal and external third party audit.

Any identified deviation is raised and escalated appropriately within the management structure for appropriate action.

TransGrid maintain and use substation, transmission line and cable Standard Design Manuals and Standard Construction Manuals, each of which references internal standards, Australian standards, international standards such as IEEE and IEC, national or international codes, and industry guidelines to plan, build, commission, operate, maintain and decommission its transmission network assets.

TransGrid also follows Safety in Design and HAZCON process for all work in compliance with the *Work Health and Safety Act 2011*.

TransGrid's deviation from standards, codes and guidelines are detailed in Table 3.

Table 3: Deviations from standards

Deviation description	Justification
<p>TransGrid design clearances to ground/roads/undercrossings for new above ground transmission lines exceed those outlined in AS7000:2016.</p> <p>These design clearances will be the standard for all future designs.</p>	<p>Additional clearance over AS7000:2016 is specified to allow for design and construction tolerances and to provide some protection against future development and/or uncontrolled activities.</p> <p>This has the overall effect of increasing the level of safety as compared to established standards while ensuring that our future lines meet or exceed the minimum statutory clearances.</p>
<p>Secondary system internal design standards were revised from dispersed Protection and Control technology to consolidated Protection and Control technology.</p>	<p>This technology driven change improved reliability and network performance. It involved revising a large catalogue of standards designs and software template. The new standards are aligned with external standards and codes. This deviation does not change the safety level associated with the previous established internal design standards.</p>

2.2 Significant community infrastructure

TransGrid operates and manages the high voltage electricity transmission network in New South Wales (NSW) and the ACT and supplies electricity to four distribution network service providers (DNSPs). TransGrid's network supplies electricity to more than 3 million homes, businesses and communities in NSW and ACT. TransGrid transports electricity from generation sources such as wind, solar, hydro, gas and coal power plants to large directly connected industrial customers and the four DNSPs that deliver it to homes and businesses. Comprising over 100 substations, approximately 13,000 km of high voltage transmission lines and cables, and five interconnections to Queensland and Victoria, TransGrid underpins economic growth and facilitates energy trading between Australia's largest states.

TransGrid considered the guidance and examples provided in the IPART Electricity Network Reporting Manual (Safety management systems) Appendix A Section A.3.2 and notes that it does not classify individual loads as significant community infrastructure in the manner described. Given the scale of TransGrid's operations, and the potential impacts, all assets are considered critical infrastructure.

TransGrid's business practices and its management systems work to assess the criticality and mitigate the risk from its network assets and to ensure that the risk to health and safety, network reliability and bushfire are managed to As Low as Reasonably Practicable (ALARP).

3. Formal safety assessment reviews and residual risks

3.1 Classification of risk levels

TransGrid's Enterprise Risk Management Framework (ERM) sets out the process and criteria for undertaking risk assessments across the organisation. The ERM Framework defines an acceptable threshold level along with reporting requirements to senior management and stipulates:

- > TransGrid has a risk tolerance set at 'Medium' in its Risk Management Framework.
- > Extreme and High risks are only acceptable where mitigation plans are in place and ALARP can be demonstrated.
- > It is expected that for residual risks, where ratings level are assessed as 'High' or 'Extreme', that the treatments are escalated to the Chief Executive Officer (CEO) for approval.
- > Inherent risks rated 'High' or 'Extreme' must have their associated treatments approved by the Executive Manager of the Business Unit.

3.2 Risks within the scope of the ENSMS

TransGrid's ERM Framework follows the AS/NZS ISO 31000:2009 Risk Management – Principles and Guideline and provides an integrated and structured approach to managing risks within the risk appetite established by the TransGrid Board. The ERM Framework provides guidance on the roles and responsibilities expected of the Board, management and staff when escalating, managing and treating risks as they arise. Risk priorities are cascaded down from the strategic level, to the business unit levels and project levels.

The following strategic risks are addressed in TransGrid's ENSMS:

- > Bushfire risk
- > Environment and property damage risk
- > Network reliability safety risk
- > Safety risk (both public and workers).

3.3 Reviews of formal safety assessments

TransGrid's FSAs are summarised below:

- > **Bushfire:** Considers network related bushfire risks. This includes the management of safety risks associated with bushfires in proximity to TransGrid's assets, as well as bushfires that may be ignited by TransGrid's activities and/or assets.
- > **Environment and Property:** Considers the risk of damage to the environment and property during the whole lifecycle of TransGrid's activities associated with the network.
- > **Public Safety:** Considers safety risks to the general public resulting from TransGrid's assets, including people working near TransGrid's network assets. This includes public safety aspects arising from the protection of the environment (excluding bushfire risk, which is addressed in a separate FSA).
- > **Network Reliability Safety:** Considers safety risks arising from the loss of electricity supply, including network planning, continuity of electricity supply and physical security of assets.
- > **Worker Health and Safety:** Considers safety risks to employees and contractors working on or near TransGrid's network. This includes worker health and safety aspects arising from the protection of the environment (excluding bushfire risk which is addressed in a separate FSA).

The FSAs and associated safety risks are reviewed and updated on an annual basis, or as required in response to a serious network related safety incident. The Bushfire FSA will be reviewed in the fourth quarter of the 2018 calendar year. Refer to Table 1 for details of the review outcomes for the other FSAs.

4. Safety risk management actions

TransGrid monitors all hazards, near miss incidents and actions from its management reviews associated with its risk management systems.

The data presented in Table 4 is derived from the risk management systems for the 2017 – 2018 reporting period as a summary of all relevant management system actions associated with the ENSMS. The data is derived from the monitoring of a range of actions resulting from incident investigations, management and external audits, and near misses.

Table 4: Risk management actions – open, completed and raised

Criteria	Number
Number of risk management actions within the ENSMS scope that were raised in the reporting year	Bushfire Risk Management = 3
	Covering multiple FSAs = 24
	Environment and Property = 34
	Network Reliability Safety = 7
	Public Safety = 8
	Worker Health and Safety = 182
Number of open safety risk management actions within the ENSMS scope from any reporting year	Bushfire Risk Management = 0
	Covering multiple FSAs = 7
	Environment and Property = 2
	Network Reliability Safety = 3
	Public Safety = 2
	Worker Health and Safety = 11
Percentage of safety risk management actions within the ENSMS scope completed by the due date within the reporting year	Bushfire Risk Management = 100%
	Covering multiple FSAs = 71%
	Environment and Property = 94%
	Network Reliability Safety = 57%
	Public Safety = 75%
	Worker Health and Safety = 94%

5. Compliance with directions

TransGrid received one Notice of Direction from IPART in 2017 – 2018 to undertake an audit of the planning phases of its ENSMS. The audit was undertaken by an independent third party auditor in the first half of the 2018 calendar year.

Table 5: Data on directions issued by IPART

Total number of directions issued by IPART	Total number of directions outstanding	Number of outstanding directions not complied with by the due date
1	0	0

5.1 Outstanding directions not complied with

There were no outstanding directions as at 30 June 2018.

6. Statistical Reporting

6.1 Network asset failures

Table 6 lists the quantity of TransGrid-owned assets and asset failure statistics.

TransGrid does not maintain a target functional failure rate metric for its network assets in its business practice and therefore is unable to report such a statistic in Table 6. TransGrid manages its assets to monitor and control the risk of failure (a function of both the failure rate and the consequence of failure) to an acceptable level rather than defining a target for functional failure rates.

A conditional failure is interpreted as those network assets which were replaced in 2017 – 2018 as part of TransGrid's replacement capital program.

TransGrid interprets the network asset functional failures to be the count of incidents when the particular network asset types were unable to meet the expected or specified performance standard in the 2017 – 2018 period, thereby causing an outage and/or incident. No asset functional failures were defined as 'Assisted', that is, due to the interaction of external objects or influences on the network structure/equipment that were beyond the control of TransGrid.

Table 6: Network asset failures

Asset type	Asset population or length	Target functional failure rate	Conditional failures past due in the reporting year	Functional failures			
				Unassisted		Assisted	
				No fire	Fire	No fire	Fire
Pole/tower	37,407	Not Applicable	381	0	0	0	0
Conductor – Transmission / sub-transmission	11,395 km	Not Applicable	0	2	1	0	0
Primary plant – power transformers	224	Not Applicable	2	6	0	0	0
Primary plant – reactive plant	167	Not Applicable	4	16	0	0	0
Primary plant - switchgear	13,273	Not Applicable	238	25	0	0	0
Secondary plant – protection equipment	3,354	Not Applicable	163	14	0	0	0
Secondary plant - SCADA	2,004	Not Applicable	10	2	0	0	0

Asset type	Asset population or length	Target functional failure rate	Conditional failures past due in the reporting year	Functional failures			
				Unassisted		Assisted	
				No fire	Fire	No fire	Fire
Secondary plant – substation batteries	217 ¹	Not Applicable	10	4		0	0

¹ The count of battery systems, comprising batteries and chargers.

6.2 Encroachment on network assets

TransGrid has reviewed all the recorded work orders associated with vegetation encroachments raised during the 2017 – 2018 reporting period to determine the number of times when the surrounding vegetation encroached its network assets. The results are presented in Table 7.

Table 7: Vegetation

Criteria	Inside bushfire prone areas	Outside bushfire prone areas
Category 1 defects	11	2
Category 2 defects overdue	32	14
Category 3 defects overdue	0	1
Category 4 defects overdue	0	0
Total vegetation encroachments as a result of third parties	Not Applicable	Not Applicable

TransGrid uses routine LiDAR inspections for the purposes of vegetation management, in conjunction with aerial and ground based inspections. TransGrid has previously carried out a low span inspection program via Aerial Laser Survey to identify such violations. The identified violations were assessed to prioritise corrective investment where applicable.

TransGrid conducts routine aerial and ground based inspections which serve multiple purposes, including identifying encroachments. TransGrid notes that it does not presently conduct any routine annual inspection of overhead spans specifically to identify ground clearance issues. Hence, there is no planned inspection and defect data to report in Table 8 for the 2017 – 2018 reporting period.

Table 8: Ground clearance

Criteria	Inside bushfire prone areas	Outside bushfire prone areas
Number of OH spans for which inspections were planned	0	0
Number of OH spans for which inspections became overdue	0	0
Number of OH spans for which LIDAR inspections became overdue	0	0

Criteria	Inside bushfire prone areas	Outside bushfire prone areas
Number of defects identified	0	0
Number of defect rectifications that became overdue	0	0
Total ground clearance encroachments as a result of third parties	0	0

TransGrid maintains an easement encroachment register for the purpose of recording issues related to clearance to third party structures. These encroachments are recorded as field staff identify a potential issue through inspection. Table 9 lists a total of 26 encroachment issues associated with clearance to third party structures identified in 2017 – 2018. Each encroachment is assessed for risk and appropriate action taken with the landowner.

Table 9: Clearance to structures

Criteria	Inside bushfire prone areas	Outside bushfire prone areas
Category 1 defects	0	0
Category 2 defects overdue	0	0
Category 3 & 4 defects overdue	0	1
Total structure clearance encroachments as a result of third parties	19	7

6.3 Unauthorised access to the network

TransGrid's security policy is based around the principles of deter, delay, detect and respond. A number of physical controls (such as security fences, restricted locks and keys, and anti-climbing devices) and other controls (such as signage, lighting and awareness) are in place to manage the risk of unauthorised entry.

Given the reliance on effective electronic monitoring and response, TransGrid does not conduct specific routine security inspections on substation and communication sites to identify unauthorised access to its network by its workers, contractors and members of the public.

TransGrid conducts routine patrols of its underground electricity cables to identify activities that might threaten the cable, identify encroachments and monitor the condition of above ground structures (such as bridges and tunnel access shafts).

TransGrid also conducts inspections on selected overhead transmission line structures to provide a high degree of assurance that the easements and transmission lines do not pose a public safety risk. The individual structures selected and the associated inspection frequencies are chosen on the basis of risk. These inspections are in addition to the typical routine inspections.

Table 10 lists 7 unauthorised access incidents to TransGrid network assets in 2017 – 2018.

Table 10: Unauthorised access to the network

Criteria	Network Operator	Accredited Service Providers	General Public
Major substations and switching stations	0	1 ¹	2
Distribution substations, regulators, switches and associated equipment	Not Applicable	Not Applicable	Not Applicable
Electricity mains outside major substations	0	2 ¹	2
Communications equipment outside major substations	0	0	0

¹ Note that TransGrid does not use an Accredited Service Providers regime for work on its network. The numbers in this column represent incidents from third party workers who are not employed by TransGrid but are also not members of the general public.

6.4 Customer Safety Reporting

This reporting is not applicable to TransGrid.

Table 11: Customer safety reporting

Criteria	Number
Number of customer shocks from installations caused by the ENO's electricity network	Not Applicable

6.5 ENO comments

TransGrid has no further comments for the 2017 – 2018 reporting period.