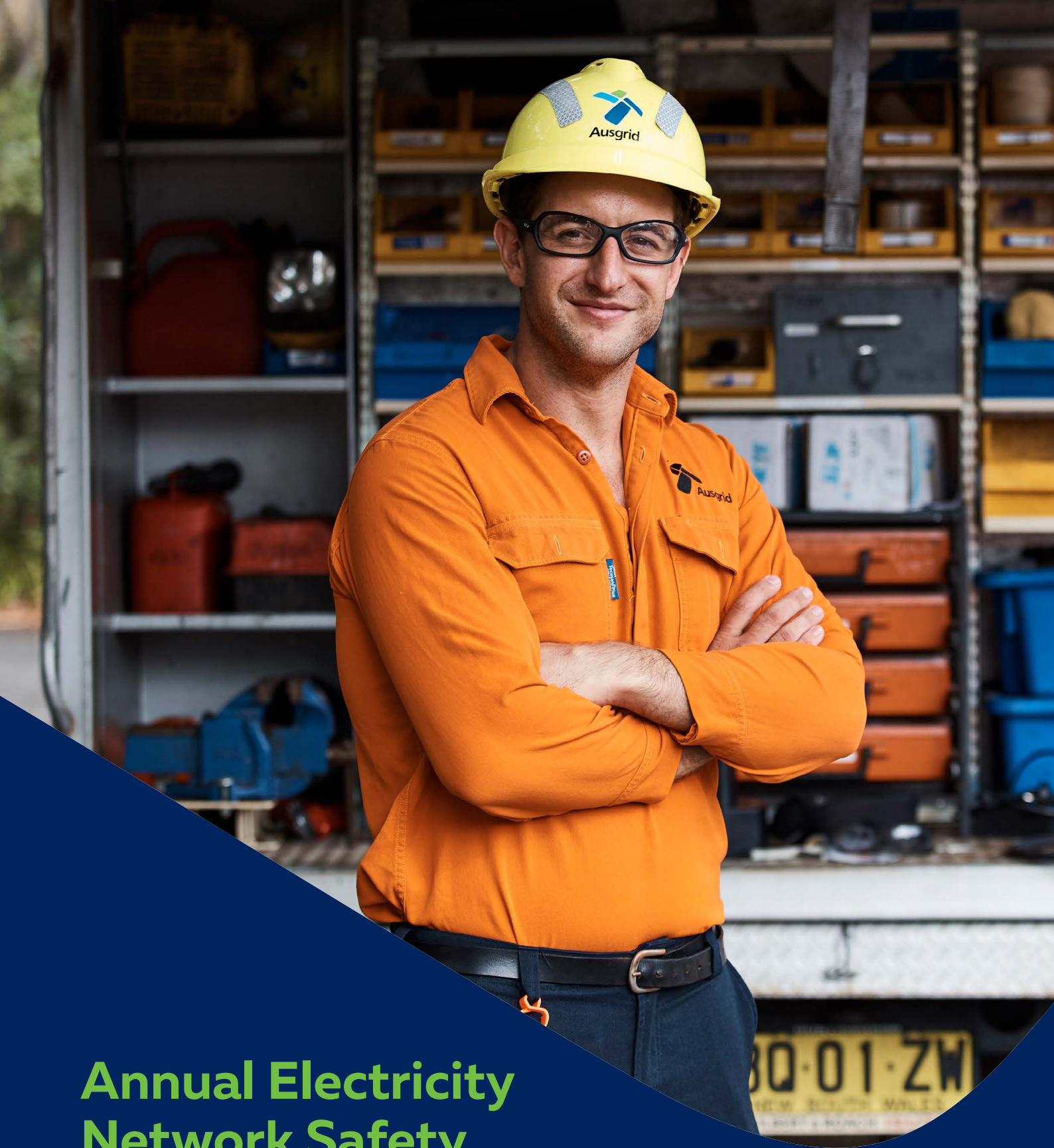
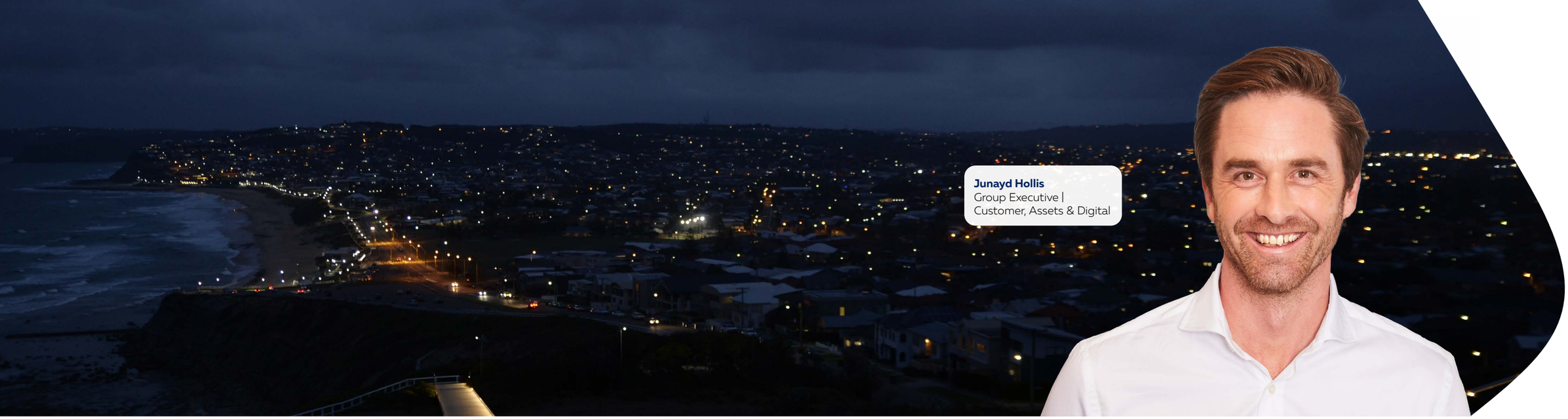


Annual Electricity Network Safety Management System Performance Report

31 October 2024

Ausgrid

Contents



Annual Performance Reporting – ENSMS

Acknowledgment of Country

Ausgrid acknowledges the Traditional Custodians of the lands where we work and live, and we pay our respects to the elders past, present and emerging. We recognise the unique cultural and spiritual relationship, and celebrate the contributions of First Nations peoples, to Australia.

Introduction

The purpose of the 2024 Annual Performance Report for the Ausgrid Electricity Network Safety Management System (ENSMS) is to provide the Independent Pricing and Regulatory Tribunal (IPART), the public, and our customers with an overview of how we have met our ENSMS objectives. This report fulfills the requirements outlined in the IPART Electricity Networks Reporting Manual (September 2022).

The information regarding the performance of Ausgrid's ENSMS has been prepared in accordance with the Electricity Supply (Safety and Network Management) Regulation 2014 (ESSNM). It is intended to assist stakeholders, including our customers and the public, to assess Ausgrid's performance against its ENSMS.

The report is divided into two sections: Part A covers our safety performance from 1 July 2023 to 30 June 2024, while Part B focuses on bushfire preparedness activities conducted between 1 October 2023 and 30 September 2024. These sections have distinct timeframes to align with financial and fire season considerations, respectively.

Context

Ausgrid manages and operates a network of substations, powerlines, underground cables and power poles spanning 22,275 square kilometres across Greater Sydney, the Central Coast and the Hunter Valley. Each day, we build, operate and maintain this distribution network to provide a safe and reliable energy supply to serve 1.8 million households, small and large business customers, and those who rely on and benefit from their energy supply.

Background

Ausgrid's electricity infrastructure plays a vital role in our daily lives, so ensuring its safety is extremely important. This responsibility lies at the core of what Ausgrid does.

Electricity networks come with potential safety risks that must be managed carefully. Ausgrid is committed to conducting its business in a manner that minimises, so far as is reasonably practicable, the risk its assets, operations and activities pose to the health and safety of employees, contractors, visitors, customers and the community. Managing safety risk is achieved through an integration of the Asset Management System (AMS), Health and Safety Management System (HSMS), Environment Management System (EMS), Electricity Network Safety Management System (ENSMS), processes and work practices, as well as public engagement and awareness programs. Ausgrid strives to be an industry leader by embedding a learning culture and adapting to changing operating environments and emerging risks.

We are committed to transparency and promptly report all relevant incidents to our industry regulator, IPART. The collection of incident data throughout the year provides us with a comprehensive overview of our safety performance. The performance indicators outlined in this report include proactive measures, which provide an indication of future performance, and reactive measures, which reflect past performance, both of which reflect the safety of our electricity network. These metrics are in line with the expectations set by IPART.

Safety is our priority, and we are committed to keeping our electricity network secure for everyone in the community.

Yours sincerely,

Junayd Hollis
Group Executive | Customer, Assets & Digital

Your input matters

We have developed this report to be easily accessible and comprehensible for our stakeholders and community members. If you have suggestions on how we can further improve the report, we encourage you to share your feedback by submitting an enquiry through the 'Enquires and Complaints' option at ausgrid.com.au/Contact-Us. Additionally, report any electrical emergencies promptly by calling 13 13 88.

A. Annual Performance Reporting – ENSMS

Part A is Ausgrid's response to the reporting requirements in Appendix A - Annual performance reporting framework of the IPART Electricity Networks Reporting Manual - Safety management system performance measurement. This section includes the current reporting period performance measurement data for the period 1 July 2023 to 30 June 2024 (current reporting period). We have provided data for the previous periods aligned with financial years where it has been possible to do so (some measures have been impractical to shift to financial year reporting in historical periods and have been noted through the report).

Part A reports against a framework of safety performance indicators defined within the IPART Electricity Networks Reporting Manual as per Figure 1.

The information regarding the performance of Ausgrid's ENSMS has been prepared in accordance with the Electricity Supply (Safety and Network Management) Regulation 2014 (ESSNM). It is intended to assist stakeholders, including our customers and the public, to assess Ausgrid's performance against its ENSMS.

Part A is structured around the four 'Tiers' defined in Figure 1 as follows:

- Section 1 describes Tier 1 indicators (Major incidents)
- Section 2 describes Tier 2 indicators (Minor incidents)
- Section 3 describes Tier 3 indicators (Control failure near misses)
- Section 4 describes Tier 4 indicators (Control implementation)

Note: Please refer to the glossary section for definitions and explanations of key terms, acronyms, and specialised vocabulary used within the report.

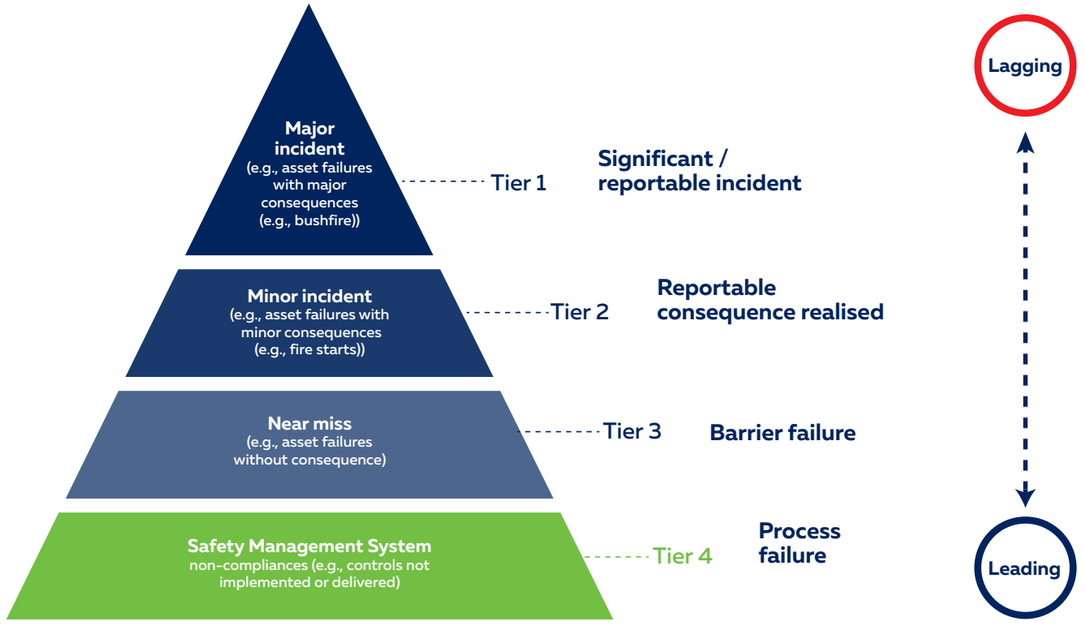
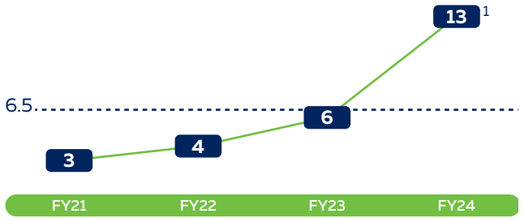


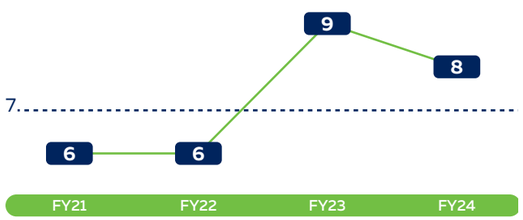
Figure 1 IPART's safety performance monitoring framework

Part A – Summary

The below summary charts indicate Ausgrid's performance metrics over a four-year average.

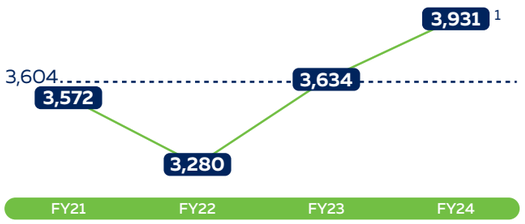


Tier 1 – Major incidents

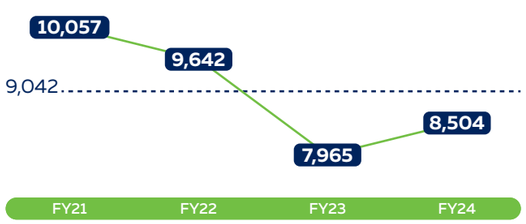


Tier 2 – Incidents

1 Further explanation of this recent trend is detailed on the following page.

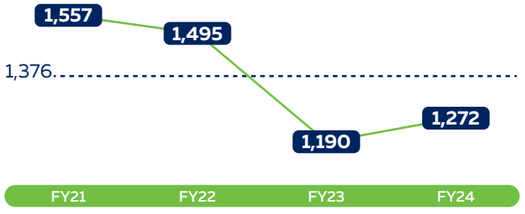


Tier 3 – Unassisted asset failures

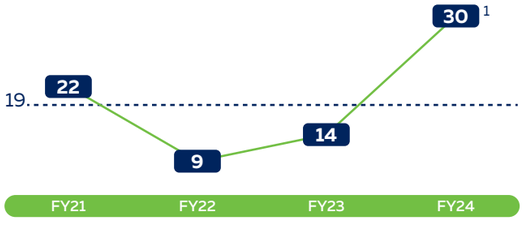


Tier 3 – Assisted asset failures

1 Further explanation of this recent trend is detailed on the following page.

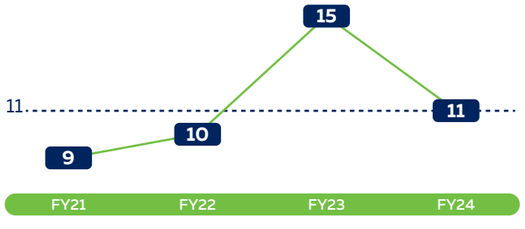


Vegetation contact with conductors



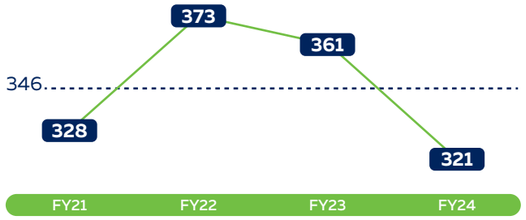
Public electric shock and arc flash incidents originating from network assets

1 Further explanation of this recent trend is detailed on the following page.

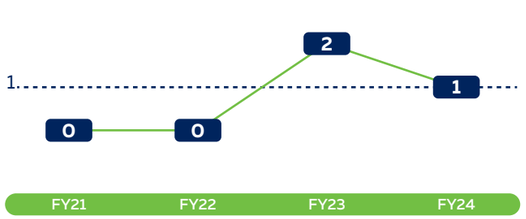


Worker electric shock and arc flash incidents originating from network assets

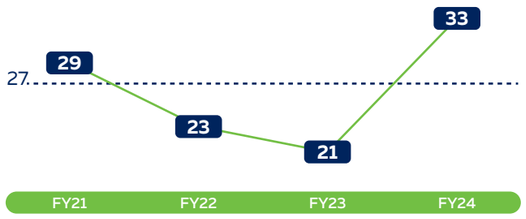
Indicator Summary ---------- **average** ——— **annual total**



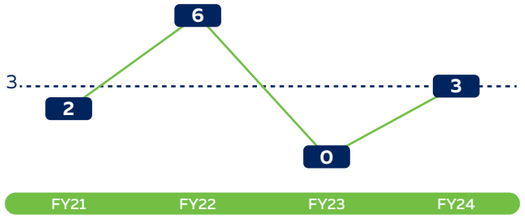
Public vehicle contact with energised overhead network asset



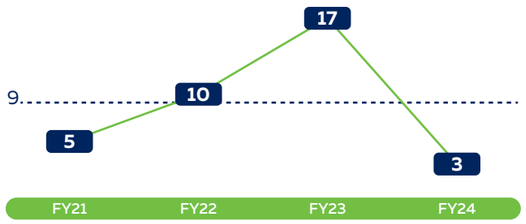
Network vehicle contact with energised overhead network asset



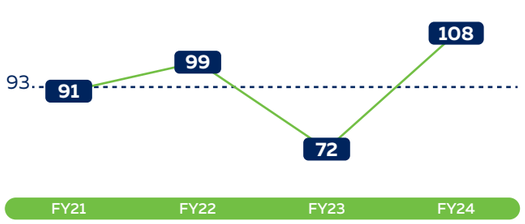
Public within safe approach distance of the network



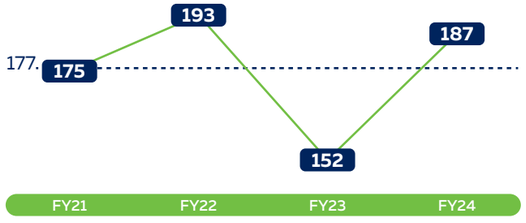
Authorised worker within safe approach distance



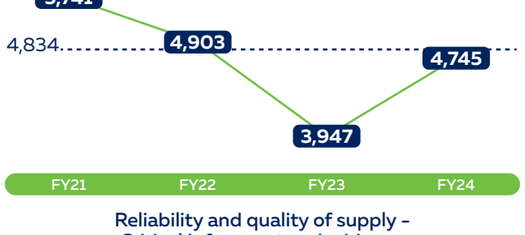
Unauthorised network access



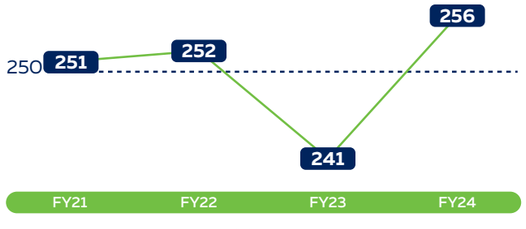
Contact with energised underground network asset



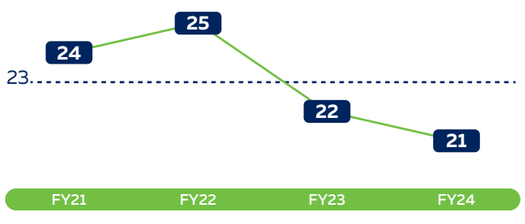
Reliability and quality of supply events



Reliability and quality of supply – Critical Infrastructure Incidents

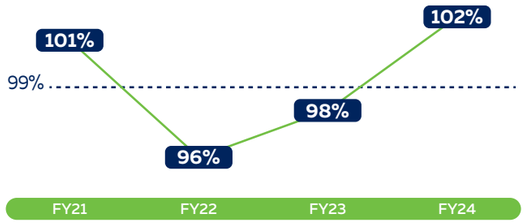


Network-initiated third party property damage events

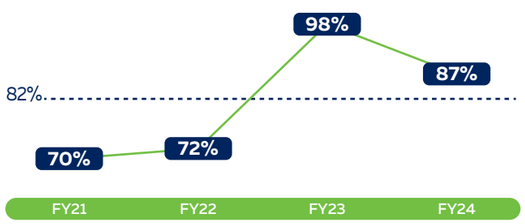


Network-initiated network property damage events

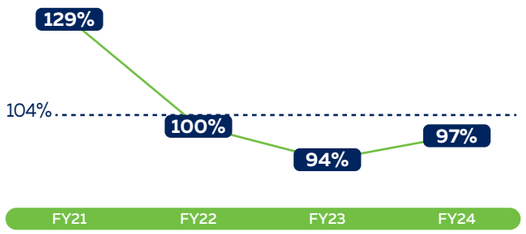
Indicator Summary ---------- **average** ——— **annual total**



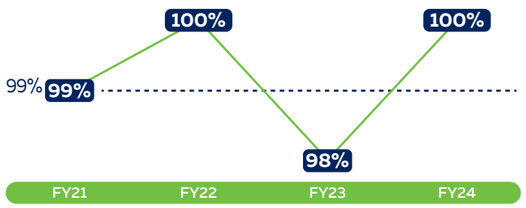
Achieved asset inspection tasks



Achieved asset corrective action tasks



Ground based vegetation inspections – Bushfire prone land



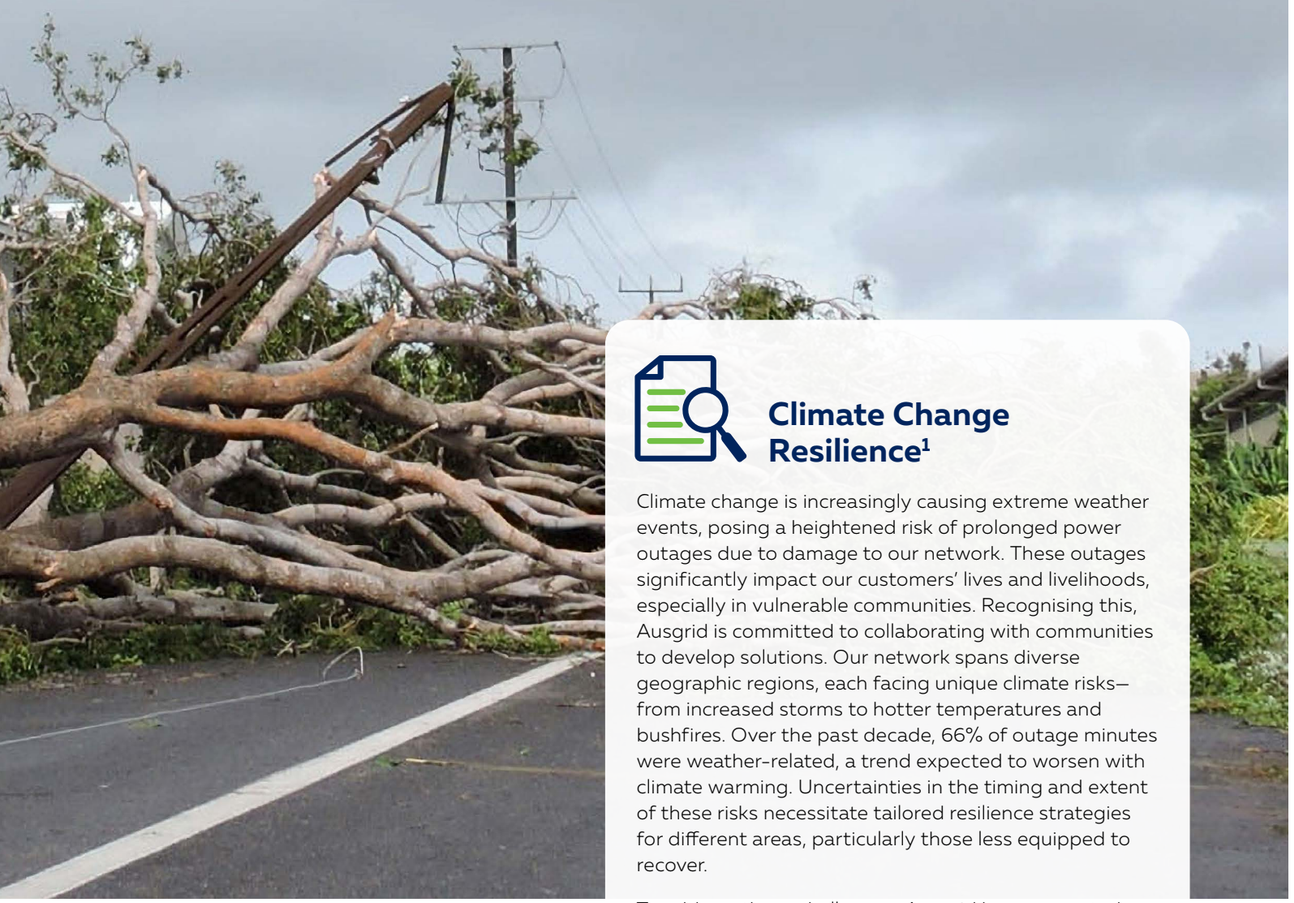
Ground based vegetation inspections – Non-bushfire prone land

Indicator Summary ---------- **average** ——— **annual total**

In FY24, our performance measures indicate a generally positive trend compared to the four-year average, with reductions in incident rates for assisted asset failures, vegetation contact with conductors, unauthorised network access, and network-initiated property damage events. We have also observed improvements in reliability and quality of supply.

Of the 13 Major incidents reported this period, 11 were classified as major reliability and power quality incidents, attributed to extreme weather events or underground asset failure. The upward trend in unassisted asset failures, driven by communication device failures accounting for 88%, posed no immediate safety impact. Additionally, an increase in public incidents, 75% of which was due to incidents involving public workers rather than the general public. This trend requires ongoing monitoring with a continued focus to educate the public on working safely around the electricity network.

Overall, our progress in key safety and reliability metrics demonstrates our commitment to maintaining network safety.

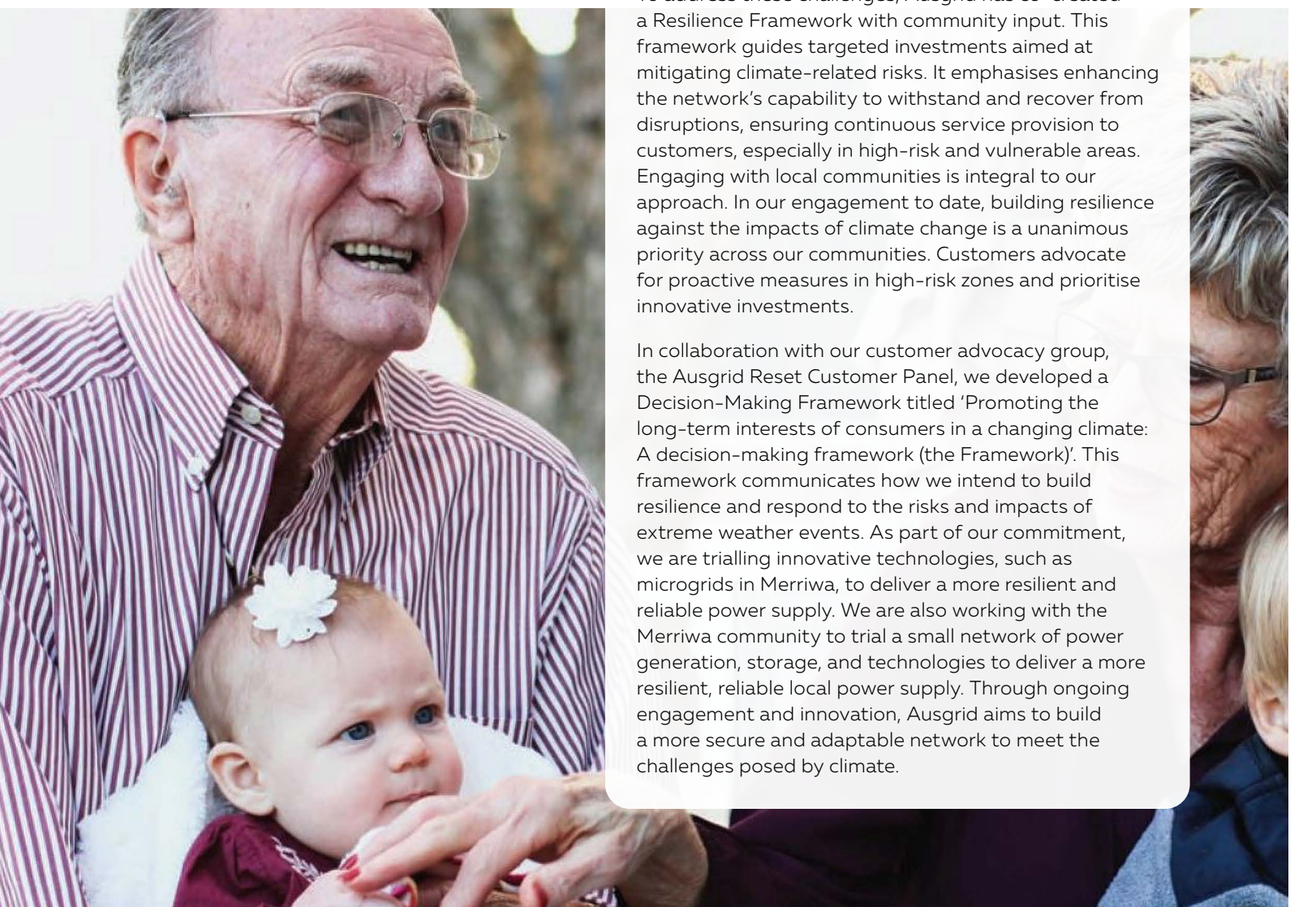


Climate Change Resilience[1]

Climate change is increasingly causing extreme weather events, posing a heightened risk of prolonged power outages due to damage to our network. These outages significantly impact our customers' lives and livelihoods, especially in vulnerable communities. Recognising this, Ausgrid is committed to collaborating with communities to develop solutions. Our network spans diverse geographic regions, each facing unique climate risks—from increased storms to hotter temperatures and bushfires. Over the past decade, 66% of outage minutes were weather-related, a trend expected to worsen with climate warming. Uncertainties in the timing and extent of these risks necessitate tailored resilience strategies for different areas, particularly those less equipped to recover.

To address these challenges, Ausgrid has co-created a Resilience Framework with community input. This framework guides targeted investments aimed at mitigating climate-related risks. It emphasises enhancing the network's capability to withstand and recover from disruptions, ensuring continuous service provision to customers, especially in high-risk and vulnerable areas. Engaging with local communities is integral to our approach. In our engagement to date, building resilience against the impacts of climate change is a unanimous priority across our communities. Customers advocate for proactive measures in high-risk zones and prioritise innovative investments.

In collaboration with our customer advocacy group, the Ausgrid Reset Customer Panel, we developed a Decision-Making Framework titled 'Promoting the long-term interests of consumers in a changing climate: A decision-making framework (the Framework)'. This framework communicates how we intend to build resilience and respond to the risks and impacts of extreme weather events. As part of our commitment, we are trialling innovative technologies, such as microgrids in Merriwa, to deliver a more resilient and reliable power supply. We are also working with the Merriwa community to trial a small network of power generation, storage, and technologies to deliver a more resilient, reliable local power supply. Through ongoing engagement and innovation, Ausgrid aims to build a more secure and adaptable network to meet the challenges posed by climate.



Tier 1 – Major Incidents

Major incidents are defined as those that have resulted in significant consequences such as fatalities, life-changing or life-threatening injuries, or injuries to multiple people due to electricity, or network equipment and apparatus. Major incidents also include incidents resulting in significant loss of property including network-caused bushfires, as well as significant power outages affecting reliability and power quality [2].

In this period, there was one major incident involving people and one major incident involving property. There were 11 incidents classified as major reliability and power quality incidents, which is an increase from six in the previous period. These 11 incidents occurred mainly in the Sydney area and were attributed to extreme weather events or underground asset failures. The increasing frequency of these weather events, along with the increasing dependence on electricity in our community, means Ausgrid plays a key role in supporting the resilience of communities disproportionately affected by climate change.

Table A.1 Major incidents

ESSNM Objective		Description of each major incident reported under the incident reporting requirement
Safety of members of the public		No recorded values in the current reporting period.
Safety of persons working on network		On 13 May 2024, during works to remove redundant 33kV overhead mains and reconfigure a high voltage pole, a serious incident involving a fall from height resulted in the fatality of a Distribution Lineworker.
Protection of property	Third party property	On 14 December 2023, a branch from a tree located outside the required vegetation clearances on a private property fell onto Ausgrid's 11kV network and caused arcing which ignited the branch.
	Network property[a]	No recorded values in the current reporting period.
Safety risks arising from the loss of electricity supply[b]		Severe thunderstorms hit the North Sydney LGA on 30 August 2023, leading to the interruption of a 132kV feeder due to lightning strikes. Severe thunderstorms on 30 August 2023 interrupted supply to a 132kV feeder serving the North Sydney and Hornsby LGAs due to lightning strikes. On 11 September 2023, an 11kV feeder out of North Sydney tripped due to an underground cable fault. The high voltage fault also caused a fault on a low voltage distributor running in the same conduit bank. This outage interrupted supply to an expressway. On 22 November 2023, a 33kV feeder in the Sutherland Shire LGA tripped due to unknown causes. On 11 December 2023, an 11kV feeder tripped due to an underground cable fault, interrupting a correctional facility in the City of Parramatta LGA. On 13 December 2023, an 11kV feeder tripped due to an underground cable fault, interrupting supply to a hospital in the Inner West LGA. On 18 December 2023, an 11kV feeder was de-energised by operators for safety reasons due to damage it and other cables sustained during a pit fire that occurred the day before. This interrupted supply to a bank in the City of Sydney LGA. On 23 January 2024, an 11kV feeder tripped due to an underground cable fault, interrupting supply to a hospital in the Inner West LGA. On 3 February 2024, a 33kV feeder tripped due to a flying fox coming in contact with an air break switch. This outage interrupted a dam in the Central Coast LGA. On 6 April 2024, one supply to a hospital in the Northern Beaches LGA was interrupted due to asset failure. On 9 April 2024, a 33kV feeder tripped due to a foil balloon on the Jannali side of the Woronora river. This outage interrupted a facility in the Sutherland Shire LGA.

a Network property losses are not reportable under IPART's Electricity Networks Reporting Manual - Incident Reporting requirements. For the purpose of this Reporting Manual, a Network Operator must report each event in which losses exceed $500,000 in relation to damage caused to electricity works as defined in the Electricity Supply Act 1995.

b As defined for major reliability incidents in IPART's Electricity Networks Reporting Manual - Incident Reporting.

1 The Ausgrid Resilience Framework can be viewed at www.ausgrid.com.au/About-Us/Future-Grid/Climate-Change-Resilience

2 The IPART Electricity Networks Reporting Manual – Incident Reporting is available on the IPART website at www.ipart.nsw.gov.au/Home/Industries/Energy/Energy-Networks-Safety-Reliability-and-Compliance/Electricity-networks/Electricity-Networks-Reporting

Tier 2 – Incidents

Incidents are defined as events that result in a person being hospitalised or receiving treatment from a health care professional, where the electricity network was the cause of the incident. This category also includes events resulting in lower-level impacts to public property (including network-caused fires) and smaller power outages.

Table A.2 outlines five incidents involving persons working on the network, four of which required surgery. Importantly, there were no incidents impacting public safety or third-party property. In September 2023, a bushfire, potentially linked to third-party interference, affected over 10 hectares in the Lake Macquarie LGA. Additionally, severe thunderstorms caused two electricity supply interruptions, emphasising the network's need for resilience against extreme weather. We are actively addressing these challenges to enhance network safety and reliability.

Table A.2 Incidents

ESSNM Objective	Description of each major incident reported under the Incident reporting requirement
Safety of members of the public	No recorded values in the current reporting period
Safety of persons working on network	On 17 July 2023, a Lineworker was lifting a roller onto a swing as part of overhead transmission conductor works and felt a pop in the belly button resulting in a hernia. The worker underwent surgery and was deemed unfit for work. On 22 August 2023, a Cable Jointer was using a band saw to cut metal joint supports in a cable pit when they lost control of the band saw resulting in a cut to their left ring finger. The worker underwent surgery and was deemed unfit for work. On 28 August 2023, a contractor was in the process of removing temporary fencing to commence non-destructive digging (NDD) when a worker sustained a cut to their forearm while cutting cable ties. The worker was transported to hospital, underwent surgery and was deemed unfit for work. On 16 January 2024, a contractor was tightening a bolt to secure a cable. When they reached for their impact wrench with their right hand, the clamp has released and dropped approximately 150mm down onto their left hand crushing it between the cable and the Elevating Work Platform (EWP) and resulted in a fractured finger. The worker was transported to hospital, underwent surgery and was certified for restricted work duties. On 28 June 2024, a vegetation management contractor was momentarily crushed between a fence and the tray of a mobile elevated working platform (MEWP). The worker was admitted to hospital and deemed unfit for work.
Protection of third party property	On 17 September 2023, in the Lake Macquarie LGA, there was a bushfire with a burnt area >10Ha. Investigation found evidence of third-party interference with Ausgrid's network that caused damage to assets.
Safety risks arising from loss of electricity supply[a]	On 30 August 2023, there were severe thunderstorms which swept across the North Sydney area. Lightning strikes from these storms caused the interruption of 132kV feeder. This outage interrupted parts of the North Sydney and Hornsby LGAs. On 6 April 2024, there were severe thunderstorms that swept across the south , central and north network areas. These storms damaged the Sydney area network and caused widespread interruptions.

a As defined for major reliability incidents in IPART's Electricity Networks Reporting Manual - Incident Reporting.

Tier 3 – Control Failure Near Miss

Unsafe electricity discharge can occur when electricity network assets malfunction or cease to carry out their intended functions. This risk is heightened when assets are not maintained correctly or when abnormal prolonged weather patterns cause damage to the network. While it is not reasonably practicable to eliminate the occurrence of asset failures, we employ asset management strategies to reasonably manage asset risk.

In Figure 2, we see that the overall FY23 performance highlights a reduction in annual failures relative to the 5-year historical average. Despite the impacts of La Niña this year, the higher failures seen in FY20 were reflective of the extreme heat and storm events that occurred in that year.

Table A.3 lists all functional failures that have occurred to Ausgrid network assets during the reporting period. The table provides a breakdown of Ausgrid's asset population, the number of functional failures and whether these failures resulted in a fire that was contained to the asset or escaped the asset.

Figure 2 Annual Functional Failures ('000s)

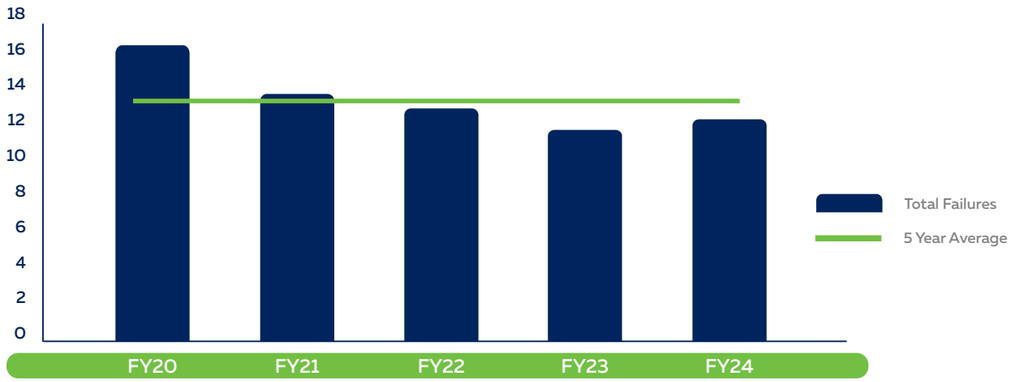
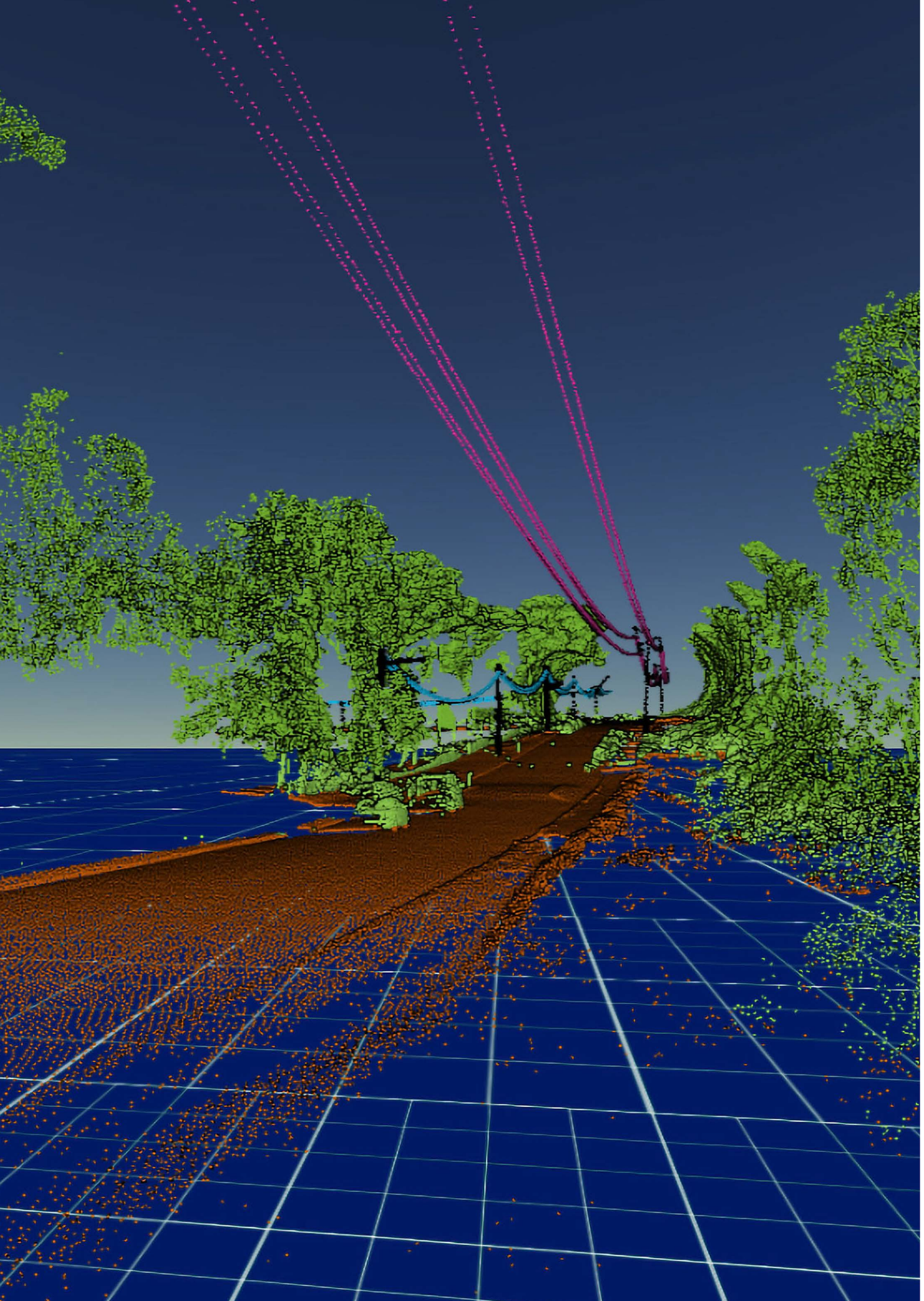


Table A.3 Network asset failures

Performance Measure	Population	5-year average annual functional failures[a,b]	Annual functional failures (for reporting period)[a]					
			Unassisted			Assisted		
			No Fire	Fire		No Fire	Fire	
				Contained	Escaped		Contained	Escaped
Towers	725	0	0	0	0	1	0	0
Poles (including street lighting columns/poles & stay poles)	515,149	656	11	0	0	632	9	4
Pole-top structures	n/a[c]	643	386	8	0	155	2	2
Conductor – Transmission Overhead	674 km	7	0	0	0	6	0	0
Conductor – Transmission Underground	215 km	3	5	0	0	0	0	0
Conductor – High Voltage (including sub-transmission) Overhead	12,168 km	413	33	1	0	361	1	2
Conductor – High Voltage (including sub-transmission) Underground	9,725 km	285	308	1	0	7	0	0
Conductor – Low Voltage Overhead	15,832 km	1,949	178	2	0	1,616	3	4
Conductor – Low Voltage Underground	8,340 km	507	515	4	0	2	0	0
Service line - Overhead	706,798	6,932	236	3	0	5,553	11	4
Service line - Underground	276,918	215	197	3	0	8	0	0
Power transformers	533	66	80	0	0	3	0	0
Distribution transformers	34,985	154	108	1	0	45	1	0
Reactive plant	267	6	2	0	0	0	0	0
Switchgear – zone / sub-transmission / transmission	14,016	125	105	0	0	2	0	0
Switchgear – distribution (Overhead)	89,461	541	400	5	3	45	2	0
Switchgear – distribution (Ground based)	78,329	134	174	2	0	9	0	0
Protection relays or systems	80,521	454	840	0	0	6	0	0
Zone / sub-transmission / transmission SCADA system	2,916	248	263	0	0	6	0	0
Zone / sub-transmission / transmission protection batteries	849	54	57	0	0	2	0	0
Regulated SAPS (Stand-Alone Power System)	3	0	0	0	0	0	0	0

a The functional failure figures in the table are all discrete counts of failure events inclusive of conductors.
b The 5-year average annual functional failures value was calculated based on five financial years including the current reporting period.
c Ausgrid does not record all individual pole top structure arrangements (e.g., cross-arms and insulators) in its corporate systems.



Vegetation Contact with Conductors

Vegetation coming into contact with overhead powerlines can potentially cause interruptions or even initiate fires. To reduce this risk, we maintain and manage the vegetation around our network and make use of cutting-edge technologies like Light Detection and Ranging (LiDAR) imagery, enhancing our ability to gather precise location and encroachment data.

Table A.4 lists the number of vegetation contact related events that have contributed to either an interruption and/or a fire event. These are split into the following categories:

- Vegetation *grow-in* refers to when vegetation has grown into the vicinity of overhead powerlines. In these situations, the vegetation has a high chance of contacting overhead powerlines in light winds or rain.
- Vegetation *fall-in* and *blow-in* refers to when vegetation (such as a decaying tree or branch) breaks apart and falls or blows into overhead powerlines during inclement weather. Saturated grounds due to flooding can also contribute to vegetation falling over, even for an otherwise healthy tree.

Table A.4 Vegetation contact with conductors

Performance Measure[a]	Event Count					Comments
	Current reporting period	Last reporting period	Two periods ago	Three periods ago	Four periods ago	
Fire starts – grow-in	2	1	2	4	2	The volume of fire starts due to grow-ins has been low and trending steadily over the last four periods.
Fire starts – fall-in and blow-in	17	15	13	7	21	Fire starts due to fall-ins and blow-ins can be highly variable based on environment factors such as major weather events. Ausgrid is continuing to monitor this metric to identify if any trends are becoming evident.
Interruption[b] – grow-in	58	63	64	59	74	The number of events occurring in the current reporting period is trending similarly to the previous four periods.
Interruption – fall-in and blow-in	1,195	1,111	1,416	1,487	2,445	The volume of fall-ins and blow-ins varies year on year depending on major weather events, primarily influenced by windstorms.

a Vegetation hazard definitions as per the Industry Safety Steering Committee Guide for the Management of Vegetation in the Vicinity of Electricity Assets (ISSC3).[3]
b Includes momentary interruptions.

3 ISSC3 is available on the NSW Government website for Climate and Energy Action at www.energy.nsw.gov.au/sites/default/files/2022-08/2016_11_ISSC3_GuidelineForManagingVegetationNearPowerLines.pdf

Enhancing Safety with Smart Meter Technology

Ausgrid is improving safety in our electricity network with a new Smart Meter Analytics platform. This cutting-edge technology identifies potential hazards, such as deteriorating neutral connections near customers' homes, before they can cause problems. Previously, we had to rely on customers reporting issues or planned replacement programs. Now, thanks to the widespread installation of smart meters, we can detect and fix these issues proactively. On average, one to two problems are found and corrected every week, making our network safer and more reliable.

This year, we're focusing on making this technology a standard part of our operations. We're developing processes to ensure every new smart meter is automatically integrated into our analytics system, so issues can be spotted and resolved quickly. By staying ahead of potential faults, we're not only preventing disruptions in power supply but also enhancing safety for both our workers and the public. At Ausgrid, we're committed to using innovative solutions to keep our community safe and our electricity network strong.

> **With electricity literally powering almost every part of our day to day lives, it can be easy to become complacent, or simply not notice what is right in front of you. The sad reality is, it is often not something we think about until it goes horribly wrong.**
>
> Group Executive Distributed Services & PLUS ES, Rob Amphlett Lewis

Unintended Contact, Unauthorised Access and Electric Shocks

Table A.5 presents incidents related to electric shocks that do not fall under the categorisation of 'Major Incidents' or 'Incidents' as defined by IPART. This table also documents situations where unintended or unauthorised contact or close proximity to the electricity network could have led to electric shocks.

In this reporting period, Ausgrid experienced a notable increase in incidents involving public workers, with a rise in arc flashes, particularly from underground strikes using tools and equipment, contrasting with the previous period. Out of 14 shocks and arc flash incidents, half were attributed to domestic settings due to neutral integrity issues. As more smart meters are deployed, the ability to detect these faults is expected to lead to improved safety performance.

Despite a decrease in overhead network contacts by public vehicles and equipment, incidents related to agriculture and vegetation management doubled, with damage from tree/branch falls and public performing vegetation management being significant contributors. Underground contacts increased and primarily involved public use of excavators and handheld tools, with a rise in incidents linked to copper theft [4] in specific regions. In response, we continue to educate the public around working safely around the electricity network through our electricity safety website [5] and regular social media posts. Additionally, we are in consultation with SafeWork NSW in developing three dedicated overhead electrical safety videos promoting our Look Up and Live platform [6] pursuant to an enforceable undertaking between Ausgrid Management Pty Ltd and SafeWork NSW.

4 Read our March 2024 media release at www.ausgrid.com.au/About-Us/News/Copper-theft-on-the-electricity-network
5 See www.ausgrid.com.au/Your-safety/Working-safely-around-the-network/Working-near-underground-cables
6 www.ausgrid.com.au/Your-safety/Working-safely-around-the-network/Look-up-and-live

Table A.5 Unintended contact, unauthorised access and electric shocks

Detail	Event Count					Comments
	Current reporting period	Last reporting period	Two periods ago	Three periods ago	Four periods ago	
Electric shock and arc flash incidents originating from network assets including those received in customer premises						
Public	14	10	4	20	14	Out of the 14 shocks/arc flash incidents involving the public, 7 occurred in domestic settings due to neutral integrity issues. Ausgrid is proactively monitoring smart meter online data during the trial to identify installation issues and upgrade assets. In this reporting period, there was a rise in public workers exposed to arc flashes; 12 of the 16 public worker incidents were arc flashes compared with nil of the four in the previous reporting period, and 11 of these 12 incidents involved underground strikes with plant or hand-held tools.
Public worker	16	4	5	2	10	
Network employee / network contractor	10	14	9	7	15	
Accredited Service Provider	1	1	1	2	3	
Livestock or domestic pet	2	0	0	0	0	
Contact with energised overhead network assets (e.g., Overhead conductor contact)						
Public road vehicle	216	247	252	242	239	Of the 322 contacts with the overhead network, 315 involved the public. Overhead network contacts with public vehicles or plant and equipment have both decreased compared to the previous reporting period. Agricultural and other overhead network contacts doubled compared with the previous reporting period. These predominantly involved the public performing vegetation management and trees/branches falling on the overhead network. Ausgrid is in consultation with SafeWork NSW to develop three dedicated overhead electrical safety videos promoting Look Up and Live that will improve knowledge of the dangers of the overhead network pursuant to an enforceable undertaking between Ausgrid Management Pty Ltd and SafeWork NSW.
Plant and equipment	63	94	97	27	30	
Agricultural and other	42	20	24	59	57	
Network vehicle	1	1	0	0	1	
Contact with energised underground network asset (e.g., cable strike)						
Plant and equipment	81	59	71	71	78	Underground contacts by the public increased. Plant and equipment incidents predominantly involved excavators and hand-held tools such as star pickets, shovels and saws. Of the 108 total underground contacts, 103 involved the public and the remaining five involved network workers. Ausgrid continues to educate and warn the public on the risks through the electricity safety website and regular social media posts.
Person with hand held tool	27	13	28	20	25	
Unauthorised network access (intentional)						
Zone / Bulk Supply Point / Transmission substation / switching station	2	0	2	1	1	
Distribution substation	1	5	2	0	3	
Towers / poles	0	6	5	2	2	
Other (e.g., communication sites)	0	6	1	2	1	
Safe Approach Distance (SAD)						
Network employee / network contractor	0	0	3	2	0	The increase to SAD incidents by the public is due to an increase in copper theft predominantly across the Hunter and Central Coast areas. Of the 10 public SAD incidents, nine involved theft of assets. The increase in SAD incidents by public workers is mainly due to an increase in underground incidents and scaffolding erected within the SAD.
Accredited Service Provider	3	0	3	0	0	
Public	10	12	4	2	10	
Public Worker	23	9	19	27	44	

Reliability and Quality of Supply

Table A.6 outlines the following occurrences:

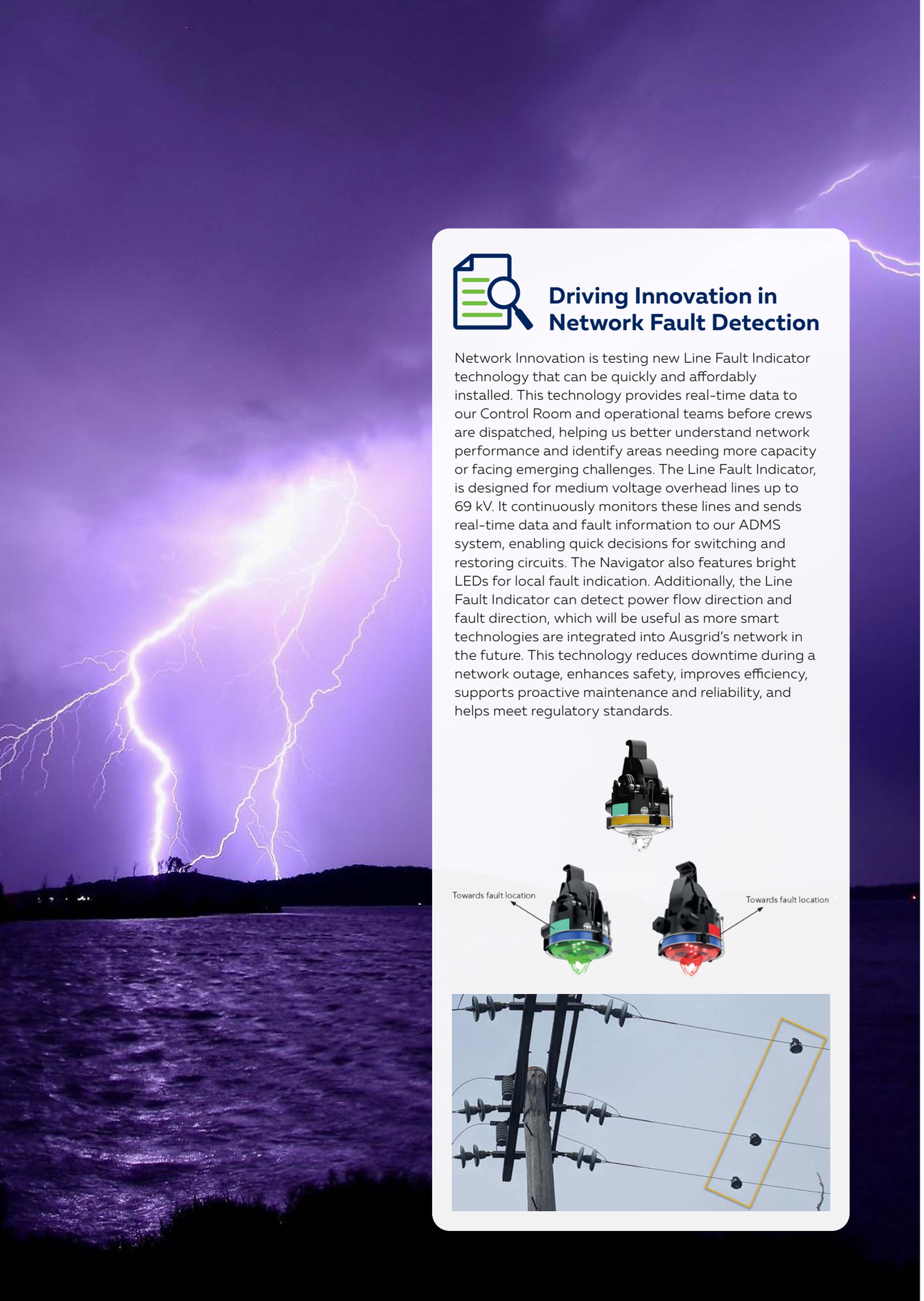
- Network incidents not classified as Major Incidents or Incidents by IPART's Electricity Networks Reporting Manual, resulting in hazardous network conditions (e.g., high voltage into low voltage, reverse polarity, compromised neutral integrity)
- Instances of prolonged network voltages exceeding or falling below Australian Standard AS61000.3.100-2011 limits, and
- Network incidents caused by defective neutral connections due to workmanship and asset defects or failures.

These events are hazards that can occur on the network and expose workers, members of the public and property to the electrical safety risk. In summary, the overall performance remains within the expected limits of variation across the reporting periods with no notable trend. Ausgrid is continuing to utilise available smart meters for detecting neutral integrity, aiming to improve fault detection. Refer to the smart meter case study in this report for further information.

Table A.6 Reliability and quality of supply

Performance Measure	Event Count					Comments
	Current reporting period	Last reporting period	Two periods ago	Three periods ago	Four periods ago	
High voltage into Low voltage	40	26	35	45	43	The increase from the last reporting period remains consistent in the reported periods and will be monitored for an emerging trend.
Sustained voltage excursions outside emergency range	8	25	14	8	12	The incidents across these measures remain relatively low, indicating overall stability in these areas despite some fluctuations across the periods.
Reverse polarity[a]	1	0	3	1	1	
Neutral integrity due to poor workmanship or incorrect procedure[a]	1	2	3	2	0	
Neutral integrity due to asset defect or failure[b]	137	99	138	119	115	The increase from the last reporting period remains consistent across the reporting periods and will be monitored for an emerging trend.

a Events reported as incidents to IPART under People Category 4 – Significant Near Miss.
b The data for the current reporting period has been collected using a revised methodology. Previous periods have been back-cast to align with this new methodology for consistency.



Driving Innovation in Network Fault Detection

Network Innovation is testing new Line Fault Indicator technology that can be quickly and affordably installed. This technology provides real-time data to our Control Room and operational teams before crews are dispatched, helping us better understand network performance and identify areas needing more capacity or facing emerging challenges. The Line Fault Indicator, is designed for medium voltage overhead lines up to 69 kV. It continuously monitors these lines and sends real-time data and fault information to our ADMS system, enabling quick decisions for switching and restoring circuits. The Navigator also features bright LEDs for local fault indication. Additionally, the Line Fault Indicator can detect power flow direction and fault direction, which will be useful as more smart technologies are integrated into Ausgrid's network in the future. This technology reduces downtime during a network outage, enhances safety, improves efficiency, supports proactive maintenance and reliability, and helps meet regulatory standards.

Reliability and Quality of Supply - Critical Infrastructure Incidents

Table A.7 compiles information on supply loss events for critical infrastructure, involving:

- Peer groups A1, A2, A3, and B hospitals[7]
- Road tunnels on motorways with emergency evacuation systems
- Situations impacting over 5,000 people due to outages
- Other community infrastructure marked as of National, State or Regional importance by the Network Operator.

The data highlights supply disruptions in critical infrastructure, such as hospitals and large public buildings, primarily due to asset condition or defect. Similarly, most of the incidents lasting for more than two hours were caused by asset conditions and defects. Whilst there were approximately 20% more reliability and quality of supply incidents, there were approximately 15% fewer incidents lasting two hours or more in this reporting period compared to the previous period.

Table A.7 Reliability and quality of supply - Critical Infrastructure Incidents

Type of critical infrastructure (e.g., hospital, tunnel)	Minutes of supply lost	Cause	Consequential safety impacts associated with supply issue
Events and buildings where greater than 5,000 people could be affected by an outage	1,840	Asset Failure - Asset condition or defect	There were 19 incidents affecting this type of critical infrastructure, three more than in the previous reporting period. Of these, three incidents lasted for two hours or more, which is four fewer than last the last period. Each of these three incidents was attributed to a different cause. No additional safety consequences were reported for these incidents.
	552	Externally Caused (nature) - flora / fauna	
	241	Externally Caused (people) - Third party	
Other community infrastructure of national, state or regional significance	1,140	Asset Failure - Asset condition or defect	Four incidents were recorded, one more than the previous period. Three of these, all due to asset failures, lasted over two hours. No further safety consequences were identified.
Peer group A1, A2, A3 and B hospitals	80	Externally Caused (nature) - Weather	Thirteen incidents occurred, one less than in the previous period. Of the significant incidents, two were attributed to asset failure, and one was weather-related. No further safety impacts were noted.
	728	Asset Failure - Asset condition or defect	
	150	Externally Caused (nature) - Weather	
	14	Human Error - Technician Error	
Rail and air transport systems where travel is affected	291	Asset Failure - Asset condition or defect	Five incidents were reported, an increase of three from the previous period. Two of these incidents lasted more than two hours, with each being caused by a different factor. No additional safety impacts were documented.
	257	Externally Caused (people) - Third party	

7 For the definitions of NSW Hospital Peer Groups, see https://www1.health.nsw.gov.au/pds/ActivePDSDocuments/IB2016_013.pdf

Network-Initiated Property Damage Events

Table A.8 outlines incidents in which damage to public or network property is recorded, with a reasonable likelihood that the network was the cause. Third party property damage claims arise from both supply related network events (e.g., voltage variation, failed network equipment, etc.) and non-supply events (e.g., damage to property because of physical maintenance works, etc.). The table summarises network-initiated property damage events over five reporting periods, showing consistent numbers of incidents affecting both third-party and network properties. The data indicates that property damage claims arise from both supply-related and non-supply events, with low volumes of claims and no significant trends observed.

Table A.8 Network-initiated property damage events

Detail	Event Count					Comments
	Current reporting period	Last reporting period	Two periods ago	Three periods ago	Four periods ago	
Third party property (assets including vehicles, building, crops, livestock)						
Damage (e.g., fire, physical impact or electrical)	256	241	252	251	389	The volumes of claims received shows no emerging trend.
Network property (including non-electrical assets, e.g., vehicles, building)						
Damage (e.g., fire, physical impact or electrical)	21	22	25	24	26	The volumes of damage to network property reported is low and there is no significant trend identified.

Table A.9 Tier 4 – Control Implementation

This section aligns with **Table A.9** in the IPART Reporting Manual and details adjustments or modifications made by Ausgrid to its Formal Safety Assessments (FSAs) or risk treatment action plans. This includes key changes made to existing assessments or risk treatments to ensure that the relevant risk is eliminated or reduced so far as is reasonably practicable. Only key amendments and improvements to FSAs or associated risk treatments that materially impact risk are documented here. Many of the amendments or improvements improve the controls across multiple FSAs and are not duplicated in the table where they provide improvement across multiple FSAs.

Amendments and improvements to ENSMS FSAs or associated risk treatments

In alignment with our ongoing commitment to continual improvement and operational processes, we have updated the ENSMS and its internal intranet site. This initiative included a thorough review of our approach to ENSMS FSAs, aimed at standardising methodologies to improve the alignment between ENSMS and business processes. These enhancements are intended to strengthen the ENSMS with a robust, legally compliant framework that supports our efforts in improving network safety performance and meeting regulatory requirements effectively.

Public Safety

Community Engagement

Ausgrid is dedicated to community safety through a range of proactive public safety programs, continually refined based on incident analysis and safety assessments. Electricity Safety Week, a long-running initiative, educates thousands of primary school students on electrical safety through engaging materials and activities, reaching 813 schools in 2023 alone. Our Summer Safety campaign, strategically delivered via radio, TV, and weather apps, reached over 1.7 million people, raising awareness about storm and fire hazards when risks are highest. Additionally, our bushfire awareness efforts help residents prepare for and respond to fire risks, using local outreach and social media to keep communities informed. These programs reflect our commitment to enhancing safety by continually improving risk management strategies to protect the public.

Managing Safety with Critical Control Management

At Ausgrid, our Critical Control Management (CCM) process is key to managing fatal risks. This systematic approach keeps crucial safety controls in place and effective during high-risk activities. These essential controls, known as Critical Controls, have the greatest impact on reducing risks and safeguarding our workers.

CCM clearly defines the performance requirements for these Critical Controls, so everyone understands what effective safety measures look like. Through focused assurance activities, we maintain consistency in applying these controls. Our safety leadership emphasizes coaching and recognizes and rewards safe behaviour's, making safety an integral part of our culture.
By continuously improving our processes from planning to execution and through monitoring and reporting, we embed safety in every aspect of our operations.

Worker Safety

Fit for Life Program

Ausgrid launched its 'Fit for Life' Program to help support the health and wellbeing of our people through a suite of tools, skills, strategies, and resources. The program was shaped by employees through more than 1,300 survey responses and provides employees with an opportunity to baseline their health and participate in a number of events aimed at targeting modifiable health risks (e.g., nutrition, fatigue, mindfulness, men's health, etc.). Ausgrid's Fit For Life Program has been produced pursuant to an Enforceable Undertaking between Ausgrid Management Pty Ltd and SafeWork NSW.

Health and Safety Strategy (H&S Strategy) Development

The approach and plans for the development of the H&S Strategy from the next financial year were agreed in February 2024 by Ausgrid Management. Work to date has included defining the scope and vision, completing a comprehensive current state assessment on H&S, identifying areas for improvement based on business priorities and presenting risks, and drafting H&S strategic themes.

Property Protection

Network Standards Updates

Recent updates to network standards have led to significant revisions across several technical documents. These include:

- Enhancements to design criteria for cable pits, vaults, and bays to ensure robust infrastructure and the introduction of stringent guidelines for oil containment in major substations, aimed at minimising environmental risks.
- Updates also address operational requirements for oil containment and establish ground movement, vibration, and pressure limits to protect buried cables from potential external threats.
- Additionally, a new standard has been developed for the site selection of pole-mounted batteries, focusing on safety, accessibility, and environmental impact.

Environmental Safety

Enhanced Environmental Risk Modelling

In this reporting period, Ausgrid Group further enhanced our Spatial Data Modelling to create electrocution risk mapping for use in Ausgrid's Street Lighting Replacement program and Aerial Bundled Cable program. Both programs have considerable benefits for environment and the safety of our community and workers. We also created mapping of oil leaks and underground fluid filled cables to feed data into Ausgrid's Cost Benefit Analysis and Job Prioritisation framework.

Sustainable Technology and Battery Initiatives

In this reporting period, the Ausgrid Group undertook a range of battery initiatives. We joined the Federal Government's B-Cycle program to improve the coverage and safety of our domestic battery recycling. We also securely formatted over 199 outdated phones and tablets, with 48% reused or donated, including 40 refurbished phones donated to First Nations Land Councils. The remaining 52% were recycled. Additionally, we committed to responsible community battery procurement by assessing suppliers, lifecycle, safety and environmental risks of Battery Energy Storage Systems (BESS) to support the transition to net zero.

Managing SF6

Sulphur Hexafluoride (SF6) is an excellent insulating gas in electrical switchgear, but even small losses have a significant impact on the climate (it is 23,500 times more potent than carbon dioxide). In this period, Ausgrid installed two more SF6-free distribution switchgear units. We repaired two SF6 leaks and continued to improve the accuracy and useability of our SF6 leak reporting system and commenced a review of leak repair processes. Since implementing our SF6 Strategy during 2021, we have rationalised SF6 gas in storage, recycled over two tonnes of surplus gas, transitioned to reporting actual losses (rather than estimates), implemented a shadow carbon price to assess the purchase of SF6 equipment, installed Australia's first Clean Air SF6-free distribution type high-voltage switchgear, and continue to investigate and trial alternative technologies.

Renewable Energy Zone (REZ)

Since 2023, Ausgrid has been engaging in joint planning with EnergyCo and Transgrid exploring options to provide 1 GW of new network capacity to host renewable generation in the Hunter region for the Hunter Central Coast REZ [8]. The connection of 1 GW of wind generation would remove ~2.6 million tonnes of carbon dioxide equivalent (t/CO2-e) by displacing Hunter Valley black coal power generation and reduce a Scope 2 carbon footprint by 70,886 t/CO2-e. Technical solutions are being developed by all parties to minimise impacts to the environment and local community.

8 Ausgrid welcomes the Hunter Central Coast Renewable Energy Zone declaration.

Loss of Supply Safety

Deliver & Embed Phase 1 ADMS

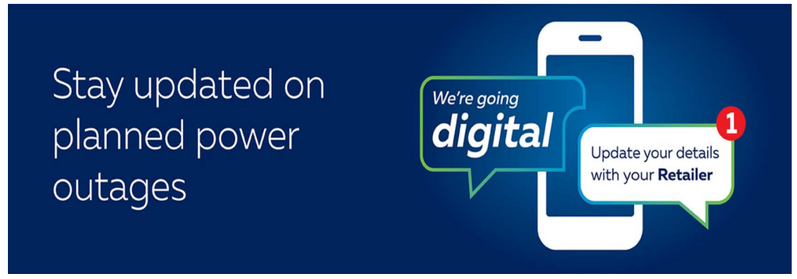
In this reporting period, we successfully delivered and embedded Phase 1 of the Advanced Distribution Management System (ADMS), a comprehensive software platform that integrates multiple utility systems and data sources to optimise the monitoring, control, and management of our electrical distribution network. ADMS provides real-time visibility, automates outage restoration, and enhances overall grid reliability and efficiency. By leveraging advanced analytics, the system supports better decision-making, facilitates the integration of renewable energy sources, and enables more efficient grid operations, ultimately leading to improved customer service and a more resilient energy infrastructure.

Updated Ausgrid Climate Modelling

Ausgrid updated our climate modelling to produce an end-to-end model. Our model takes climate forecasts, simulates asset failures and impacts, and identifies the optimal investments required to maintain current service levels.

Enhanced Procedures for Customer Interruptions and Training

- NECF Peer Review: A simplified NECF Peer Review has been developed, with a focus on mitigating risks to Life Support Customers.
- Planned Interruption Communication: As of August 22 2023, standard letters are designated for Life Support Customers and customers without successful SMS notifications for planned interruptions. Non-Life Support Customers will receive SMS notifications exclusively.
- Updated Training Requirements: Training for those involved in planned customer interruptions has been consolidated into a single comprehensive module. Previously consisting of four separate modules, this update ensures streamlined and effective training aligned with the new process.



Bushfire

Vegetation Management

Ausgrid is committed to addressing the non-compliances identified in Table A.15 of its ENSMS. Ausgrid promptly rectified the non-compliant conditions identified during the audit and developed a rectification plan to address the root causes so far as is reasonably practicable (SFAIRP), and to provide additional assurance of ongoing compliance. The rectification plan includes actions to enhance data accuracy, improve vegetation management processes, and implement new assurance mechanisms. An internal audit is being undertaken to verify that the corrective actions have been addressed and implemented. Ausgrid is tracking all actions through its enterprise-wide system to ensure transparency and monitor progress towards full implementation.

Design, Construction and Commissioning

Table A.10 presents the metrics related to designing, constructing, and introducing new or modified network assets within a specific reporting period. This involves designs and installations carried out by Accredited Service Providers (ASP), which undergo assessment and approval by Ausgrid. The planning and design stage of the network's lifecycle is crucial to network safety. The metrics monitor safety evaluations, audits of these assessments, and safety reviews for Level 1 (expanding network capacity) and Level 2 (service line work) ASP projects. The increase in non-contestable project safety reviews evident in Table A.10 can be attributed to the inclusion of safety reviews undertaken by our project teams and contractors. Overall, the data is correlated to the design and construction activity that is seen across the network and varies accordingly.

Table A.10 Design, construction and commissioning

Performance Measure	Current reporting period	Last reporting period	Two periods ago	Three periods ago	Four periods ago
Designs for which Safety in Design (SiD) reports have been completed	1,760	2,084	1757	1,472	1,732
Designs for which Safety in Design (SiD) reports have been audited	25	25	1	2	17
Contestable designs certified	1,429	1,469	1,513	1,432	965
Contestable level 1 project safety reviews performed	5,468	6,763	6,089	4,926	5,145
Contestable level 2 project safety reviews performed	4,025	8,574[b]	6,238	4,178	3,953
Non-contestable project safety reviews performed	19,612	19,284[c]	14,588	12,355	11,465
Project closeout reports completed for contestable projects[a]	0	0	0	0	0
Project closeout reports completed for non-contestable projects	1,604	1,170	1,211	1,165	1,635
Project closeout reports audited for contestable projects[a]	0	0	0	0	0
Project closeout reports audited for non-contestable projects	3	0	0	0	0

a No project closeout reports are produced due to changes in Ausgrid's involvement with contestable connections and a change in the process.
b This period returns to expected historic levels the previous period saw increased inspections due to disconnection and backlog projects.
c An additional source of project safety review data has been included since the last reporting period accounting for the step change.

Inspections and Corrective Actions – Assets

Table A.11 reports Ausgrid's inspection volumes excluding the activities primarily targeting preparation and assurance of the network for the bushfire danger period reported in Table B.3 (Vegetation tasks) and Table B.4 (Asset tasks). Inspection tasks within latitude at reporting date are classed as Open and those outside latitude are classed as Outstanding at the end of the current reporting period. Ausgrid manages all outstanding inspection/corrective tasks at weekly and monthly intervals via a combination of multi-level meetings, dashboards, reporting, analysis, work prioritisation, and resourcing. Outstanding tasks from the current reporting period are prioritised at the top of the next reporting period.

Inspection tasks are only reported as achieved when all the associated corrective action tasks to address the faults of a particular asset have been identified. More inspection tasks may be achieved than planned due to approved maintenance plan variations and tasks nominally due in the future reporting period that are completed in the reporting period. Ausgrid has reduced risk by 2% from the start of the period as a result of adopting the Job Prioritisation Framework.

The 'Achieved' inspection tasks show a notable increase across most asset classes. In particular, the tasks achieved under Distribution Overhead (OH) increased by 19% versus the previous period, driven by the Pole and Line inspection program where the training of new pole inspectors and the implementation of personnel changes, has helped increased throughput. We also observed a significant relative rise in the proportion of 'Outstanding' inspection tasks, largely driven by increases in Transmission Substation tasks. Most of these tasks require the de-energisation of our network to perform (under a Network Access Request (NAR)) with constraints on NARs being the key driver for the increase in outstanding Transmission Substation tasks. A proposed change to the Job Prioritisation risk ratings, aimed at promoting the priority of these tasks, is currently under consideration.

Table A.11 Inspections (assets)

Performance Measure	Inspection Tasks				Corrective Action Tasks			
	Planned inspection tasks	Achieved	Open	Out-standing	Tasks identified (all categories)	Achieved	Open	Out-standing
Transmission Substations	9,402	9,521	262	103	935	793	381	540
Zone Substations	42,458	42,959	893	165	3,267	2,682	1,365	1,443
Distribution Substations	22,271	22,017	652	262	3,864	2,837	2,187	2,857
Transmission Overhead	7,614	6,903	939	17	1,564	1,044	1,264	1,309
Transmission Underground	1,011	1,015	1	0	232	219	24	16
Distribution Overhead	100,366	104,532	2,793	122	15,171	13,886	9,719	9,737
Distribution Underground	14,193	14,462	6,586	0	1,150	1,265	1,265	929
Regulated SAPS	3	3	0	0	2	2	0	0

Inspections – Vegetation Aerial/Ground Based

Table A.12 provides information on Ausgrid's vegetation inspection volumes for corrective tasks, excluding activities primarily focused on preparing and ensuring network safety during the bushfire danger period, as detailed in Part B of this report. Vegetation inspection on non-bushfire prone land is undertaken through a routine vegetation management cycle that identifies vegetation encroachments for cutting that have entered into the minimum allowed vegetation clearance from the network. The objective of the cutting is to avoid any vegetation encroachment into the minimum vegetation clearance between cutting cycles as far as is reasonably practicable. Ausgrid conducts additional inspections alongside those carried out as part of our routine vegetation management program in bushfire prone areas. It is important to note that these routine inspections do not specifically focus on preparation for the bushfire danger period and are therefore separated from this table. For a comprehensive overview of the inspection targets, which encompass both routine and targeted efforts aimed at preparing for the bushfire danger period on bushfire prone land, please refer to Part B. Note that Ausgrid does not perform aerial vegetation inspections outside of bushfire prone areas.

The data presented indicates a high completion rate of inspections on both non-bushfire prone and bushfire-prone land, achieving better than 99.95% completion across both.

Table A.12 Inspections (vegetation) aerial/ground based

Bushfire Risk Category	Population (poles)	Target	Achieved	Open	Out-standing
Aerial based					
Non-bushfire prone land[a]	0	0	0	0	0
Bushfire prone land[a]	Refer to **Table B.3** Vegetation tasks				
Total	n/a				
Ground based					
Non-bushfire prone land	368,172	73,019	72,798	205	16
Bushfire prone land	146,977[b]	31,353	30,415	919	19
Total	515,149	104,372	103,213	1124	35

a Refer to **Table B.3** vegetation tasks.

b The pole population provided does not align with **Table B.2**, as the pole count in **Table B.2** is determined by the number of poles attached to spans that are required to be inspected.

Community Events

Delivering safety messaging to the community is a core part of Ausgrid's participation at Community events. In FY24, Ausgrid attended 9 large community events in our network area. At each event we have provided advice to the public on potential safety issues, included a setup of materials for the community to engage with and provided a Farm Safety flyer for our rural customers.

In FY24 Ausgrid attended the following community events:

- Bring Your Bill Day, Redfern (21 July 2023)
- Hunter Homeless Connect, Newcastle (9 August 2023)
- The Great Cattle Dog Muster, Muswellbrook (9 September 2023)
- Merriwa Community Day, Merriwa (18 November 2023)
- The emPowered Walk (Jenny's Place), Newcastle (18 February 2024)
- Headstart ABI presentation, Kurri (11 March 2024)
- Upper Hunter Energy Hub, Muswellbrook (15,16 March 2024)
- Tocal Field Days, Tocal (3-5 May 2024)
- Festival of the Fleeces, Merriwa (8 June 2024)

Public Electrical Safety Plans and Activities

This section aligns with **Table A.13** within the IPART Reporting Manual and captures the various activities carried out as a part of our Public Safety Network Management Plan. It delineates the programs and initiatives that we either initiate or consistently engage in, all aimed at fostering public safety awareness and providing education pertaining to the electricity network.

Electricity Safety Week

Ausgrid is proud to have delivered Electricity Safety Week (ESW) for over two decades. The program is designed to educate primary school students on how electricity works, how to use it, and how to stay safe around it. Developed in partnership with the NSW Department of Education, the program materials align with the PDHPE syllabus for K-6, supporting the delivery of key outcomes of the Science, English, Mathematics and Drama curriculums.

We have continued to build on the program each year, with a 94% participation rate in 2023, resulting in our resources reaching 813 schools. The free ESW resource pack contained lesson booklets for teachers, access to interactive learning modules, safety posters, stickers, and a simple circuit kit. In 2023, we also offered a new DART (Distance and Rural Technology) Learning video for virtual incursions and a SCRATCH coding activity developed with Code Club Australia. These two new initiatives were jointly developed with Endeavour Energy and Essential Energy.

We supported awareness of Electricity Safety Week across our social media platforms and through the engagement of external social media accounts were able to garner over 240,00 impressions. Our ESW program was also covered in Energy Source and Distribution and Safety Culture News. More than 75 Ausgrid volunteers visited primary schools across our network to deliver interactive and engaging electricity safety presentations to 41 primary schools and one kindergarten. Six key messages are the foundation of these presentations.

1. Play in open spaces away from electricity poles and powerlines
2. Stay away from electricity substations and power equipment
3. Never put a metal object in a toaster or power point
4. Keep water away from electrical appliances and power cords
5. If you see a dangerous situation, tell an adult
6. If you see a fallen powerline, stay at least 8 metres away from it and anything it may be touching

Ausgrid continues to actively share the program with fellow distribution network operators such as Endeavour Energy, Essential Energy and Energy Queensland, to further its expansion throughout primary schools across NSW and QLD.

Summer Safety

Each year Ausgrid supports awareness of potential electrical safety hazards through a paid Summer Safety campaign. With an increased risk of storm activity, typically seen over summer, we use this period to deliver relevant messaging when customers are likely to be most receptive.

To support the start of this summer safety campaign, we had a four-week radio burst across November and December 2023 broadcast across metro Sydney, Newcastle, Hunter Valley, and Gosford. Three ads were leveraged across spots delivering safety messages urging listeners to stay away from fallen powerlines and report storm damage and bushfire hazards to Ausgrid. The radio component of this campaign was highly successful with the campaign, reaching almost 1.25 million radio listeners. In the lead-up to the summer of 23/24, Ausgrid also ran an addressable TV campaign geotargeted to postcodes in the Ausgrid network. This activity encourages the community to maintain vigilance around storm damage and hazards, including the need to stay 8m away from fallen powerlines. The campaign delivered over 475,000 impressions on digital/smart TVs, set top box devices and gaming consoles.

Between November 2023 and June 2024, Ausgrid also delivered geo-targeted weather-based safety messaging through the Weatherzone app. The ads were targeted to postcodes in the Ausgrid network area, with relevant creative triggered by corresponding weather conditions. For example, during stormy weather events such as thunderstorms, flooding, high winds or designated severe storms, Weatherzone would deliver storm safety messages and click through to the storm safety page on the Ausgrid website. Conversely, when Fire Danger levels would be marked between the ranges of High and Extreme, a fire related safety message would be delivered to users.

Bushfire Awareness Campaign

Ausgrid's annual bushfire safety communications focus on pre-summer aerial patrols with a public safety campaign targeting property owners who are responsible for private poles and powerlines. Information is also provided to the community via print ads, web pages, and social media. Ausgrid has a detailed issues management strategy in place to guide its response in the event of any bushfire-related outages or emergencies. We also use social media in a targeted manner for safety messaging for residents in affected communities. Ausgrid also shares the NSW Rural Fire Service bushfire safety messaging on social media as needed.

Ausgrid's Bushfire Awareness social media campaign encourages customers to stay safe during the bushfire season, asking customers to prepare for the oncoming season and drive awareness around bushfire triggers and prevention strategies. Our 2023 Bushfire Prevention Program gained media attention from local news and ongoing social media paid advertisements, reaching over 77,920 customers.

The following campaigns were run across FY24:

Thermal Surveying

Information about thermal imaging helicopter patrol activity was provided via social media in September 2023 as well as print advertising placed in key network areas that would be impacted. Thermal patrols checking for hot spots on the network were carried out on transmission lines over four days between 29 August and 1 September 2023.

Prior to this, print advertising was also leveraged during August 2023 through local papers including The Advertiser, Coast Community News, Maitland Mercury, and Newcastle Herald to keep local residents advised of Ausgrid's activities. Localised outreach to MPs and councils also ensured the message was spread with the local Member for Cessnock and the Mayor posting to their Facebook pages to keep their local communities well informed.

LIDAR (light detection and ranging) Patrols

Our LiDAR Bushfire Patrol activity took place between April and June 2024 across the Ausgrid network. Print advertising in key network areas the activity impacted commenced in March, complimented by a paid social media campaign that ran in parallel. An interactive map of the network alongside expected patrol dates was also made available on the Ausgrid website.

Ausgrid ran print advertising in local region publications such as the Hunter River Times, Singleton Argus, Coastal Community News and Newcastle Herald between March and May 2024 to inform the local community. Advertising also featured in the Daily Telegraph for broader awareness of the activity across our network.

ElectricitySafety.com.au

We continued to support the industry-first website we developed in 2022 (www.electicitysafety.com.au) with paid google keywords. The site provides safety information around electricity in the home, on worksites, and in emergency response situations.

Website traffic peaked around post-Electricity Safety Week where we were able to promote the website as a resource for students and schools. With over 6,500 views on the website in the lead up to, during and after Electricity Safety Week (August - October 2024), the site provides an engaging experience for visitors to continue conversations around electricity safety in the home and community.

The website aims to curb incidents, injuries, fatalities and mitigate unsafe practices with easily available information built to help Australians better understand and recognise these common risks.

The mission behind ElectricitySafety.com.au is to drive change by increasing awareness of electrical hazards, and educating Australians on how to live, work or respond safely when it comes to situations involving electricity.

Internal Audits

Table A.14 captures the annual internal audit activities. An internal audit plan is developed via an interactive review with internal stakeholders to identify areas for audit emphasis, along with a review of industry and general business-identified emerging risks. These audits cover many aspects of Ausgrid's operations, of which the ENSMS-related internal audits below are a subcomponent. For each internal audit, processes and controls are reviewed and tested. Non-compliances or improvement opportunities are raised and management actions to address these are agreed along with appropriate timelines for actioning.

Table A.14 Internal audits performed on any aspect of the ENSMS (as per AS 5577 clause 4.5.4)

Audit Scope	Identified Non-Compliances	Actions
Project Completion and Closure Reviewed and assessed whether there are adequate controls over the commissioning assessment of constructed assets prior to energisation, the recording of technical asset information in SAP and Geographical Information System (GIS), and the administrative functions around project close.	Improvements in the Inspection Test Quality Plans, including clear pass/fail criteria and the results documentation, were identified. The "As Built" drawings will also be filed in the designated central system.	The commissioning process for assets is being reviewed. Improvements in the storage of inspection results, completion of an overarching commissioning report for each major project completed and formal sign off by the Project Manager will be consistently applied. These actions are being completed by management in accordance with the agreed timeframes.
Advanced Distribution Management System (ADMS) Assessed the effectiveness of security processes and controls to mitigate inappropriate access to data across the production, testing and Phase 2 ADMS environments.	No non-compliances were identified; however, some minor opportunities for improvement around role-based access and documentation storage/update were noted.	There were no non-compliances that required actioning.
Return to Live Work This review assessed the adequacy of processes and controls to ensure staff performing low voltage (LV) live work are properly trained and certified for their role.	No non-compliances were identified; however, improvement opportunities were recommended.	There were no non-compliances that required actioning.
Fatigue Management This review assessed whether field-based staff fatigue levels are being managed through the processes outlined within the Fatigue Charter and Fatigue Management Procedure.	Completed fatigue checks were found to not be stored in a consistent manner. Improvements in the completion of Journey Management Plans and their storage were identified. An externally developed IT Application is used to complete hours worked. Errors within the Application for hours worked were identified for correction by the supplier.	Staff have been reminded to utilise the available Application to complete Fatigue checks and for Journey Management plans. If they have to be completed outside of the Application, a dedicated internal repository has been created to store any manual documents. Management has worked with the external IT Application supplier to improve its functionality. Work has progressed to the testing stage on the changes. It is expected to be completed in the coming months, in accordance with negotiated timelines. In the interim, exceptions are being reviewed and handled manually by management within the agreed timeframes.
ISO55001 – Asset Management System Elements 9 & 10 of the ISO standard were reviewed to ascertain how they have been implemented in practice. The clearance of prior internal audit recommendations and external audit non-conformities were reviewed for clearance. The processes around the review and consideration of new technologies for potential use on the network were also reviewed.	No non-compliances were identified; however, improvement opportunities were recommended.	There were no non-compliances that required actioning.
Bushfire Preparedness This review assessed the processes and controls which ensured the timely completion of Bushfire season preparations and tasks, in accordance with the Bushfire Management Program Execution Plan (PEP) and other relevant policies and procedures. Management reporting on the progress of the required actions before bushfire season was also reviewed.	No non-compliances were identified; however, improvement opportunities were recommended.	There were no non-compliances that required actioning.

External Audits

Table A.15 offers information regarding independent external ENSMS audits. When these audits are directed by IPART, they follow the IPART Audit Guidelines. These guidelines outline the procedures, principles, and minimum criteria for independent ENSMS audits. Two key IPART Audit Guidelines, namely Audit Fundamentals, Process, and Findings and Audit Guideline - Electricity Networks Safety Management Systems, are applicable to all IPART-directed ENSMS audits[9]. These guidelines serve as the foundational reference documents for ensuring the proper conduct of these audits. Additionally, Ausgrid's Environmental Management System, which is an integral component of its ENSMS, undergoes independent external audits in accordance with the necessary requirements to maintain Ausgrid's certification to ISO 14001:2015.

Table A.15 External audits performed on any aspect of the ENSMS (as per AS 5577 clause 4.5.4)

Audit Scope	Identified Non-Compliances	Actions
The ENSMS Ausgrid bush fire risk management audit direction (19 June 2023) included: 1. Whether the implementation of Ausgrid's ENSMS is in accordance with clause 4.4 of Australian Standard (AS) 5577-2013 Electricity network safety management systems (AS 5577), by assessing the pre-bush fire season vegetation management outcomes through field observations.	Ausgrid was not effectively fulfilling their obligations to ensure that vegetation remained clear of service lines. Consequently, Ausgrid is non-compliant (material) with AS-5577 Clause 4.4 and IPART audit criteria Table A.2 item 6a as the treatment options identified in the Formal Safety Assessment (FSA) have not been fully implemented.	The agreed improvement actions are being completed by management in accordance with the agreed timeframes.
2. Whether Ausgrid has amended and implemented its ENSMS, or is progressing towards amending and implementing its ENSMS, to address the non-compliances identified in the ENSMS Audit – Bushfire Risk Management report by AMCL (including any previous outstanding non-compliances), dated 23 March 2023.	The field inspections found that Ausgrid's vegetation management process failed to identify and rectify all hazardous vegetation before the start of the bushfire danger period commencing in 2023. Consequently, Ausgrid's implementation of the ENSMS was found to be non-compliant with AS 5577 clause 4.4 regarding the identification and rectification of vegetation encroachments and hazard trees.	The agreed improvement actions are being completed by management in accordance with the agreed timeframes.
Ausgrid's EMS (October 2023) included: A surveillance audit of Ausgrid's EMS in relation to ISO14001:2015 requirements.	No new non-compliances were identified.	No new non-compliances were identified in the October 2023 audit that required action. One minor non-compliance from the previous assessment in 2022 regarding emergency preparedness remains open, however progress was noted.

9 Audit Guideline - Audit Fundamentals, Process and Findings and Audit Guideline - Electricity Networks Safety Management Systems can be viewed at www.ipart. nsw.gov.au/Home/Industries/Energy/Energy-Networks-Safety-Reliability-and-Compliance/Electricity-networks/Electricity-Networks-Auditing

B. Bushfire Preparedness

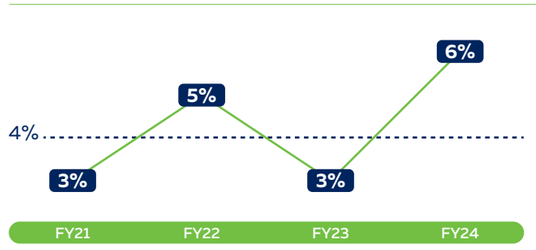
Part B is Ausgrid's response to the reporting requirements in Appendix A - Bushfire preparedness of the IPART Electricity Networks Reporting Manual - Safety management system performance measurement. This section summarises Ausgrid's preparations prior to the commencement of the statutory bush fire danger period (BFDP), which begins on 1 October or earlier where the NSW RFS Commissioner declares a variation based on the recommendation of local Bush Fire Management Committees (BFMCs).

In our ongoing commitment to bushfire prevention, we at Ausgrid, along with our customers and the community, share the responsibility of managing the risk of bushfires by eliminating hazards from our electricity networks so far as is reasonably practicable. Our collective effort safeguards life, property, and the environment[10].

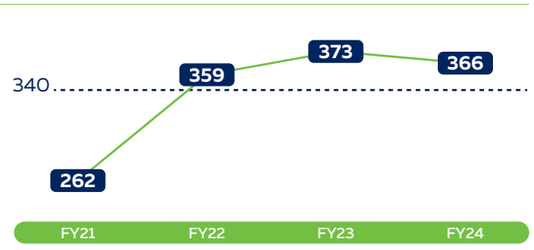
10 For more details on how we are working together to achieve this, visit www.ausgrid.com.au/in-your-community/bushfire-prevention

Part B – Summary

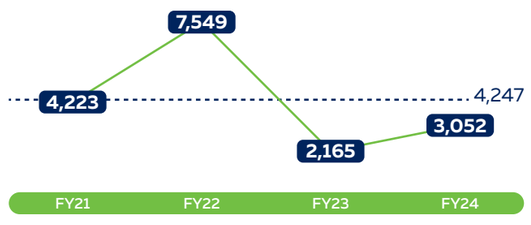
Trends of some key statistics from Part B of this report and from previous reporting periods are shown below.



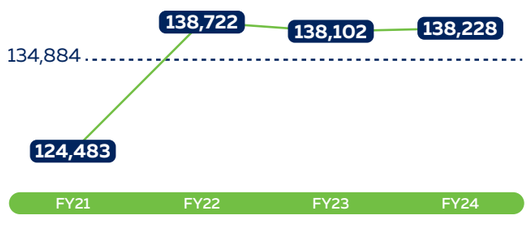
Percentage of customers directed to undertake bushfire risk mitigation work



Number of High Voltage Customers (HVCs) advised to undertake pre-season checks



Number of pre-summer service mains inspections



Number of pre-summer network inspections

Indicator Summary average annual total

B.1 Bushfire Risk Profile Across Network Operator's Supply Area

The AFAC (Australian and New Zealand National Council for fire and emergency services) Seasonal Bushfire Outlook for Spring 2024 map in Figure 1 shows that given the prevailing wet conditions and the lack of a clear indication of drier than normal conditions, NSW is expected to have normal fire potential this spring. Most regions of NSW experienced average to above average rainfall throughout winter. Wet conditions largely hindered prescribed burning efforts and continued to encourage grass growth across the state. Into spring, large parts of NSW remain wetter than usual, with grasses generally greener (less cured) than typical for this time of year. The climate outlook for spring remains somewhat uncertain. While maximum temperatures are likely to be above average, the rainfall forecast is less clear. Although grasses are currently uncured, above average temperatures during spring could lead to rapid curing (drying) of these grasses. This combination of high grass fuel loads and the potential for curing in late spring and early summer poses a significant risk for fast moving, intense grass fires. Given the current wet conditions and the lack of a clear indication of drier than normal conditions, NSW is expected to have normal fire potential this spring.

The Weatherzone Seasonal Risk Report delivered to Ausgrid on 24 September 2024 has indicated there is potential for a La Niña to develop late Spring early Summer. There is still some uncertainty around this seasonal forecast due to several extraordinary events influencing our weather this year, including the Tonga–Hunga Ha'apai volcanic eruption in 2022 (greatest influence two years later) and the Sudden Stratospheric Warming events in July and August 2024. While there are signs La Niña could develop, it is not certain which could change the outlook to drier and warmer if it doesn't eventuate in the coming months. The current medium-term outlook is for average rainfall for NSW and the Hunter during early to mid-spring, caused by dry and warm prevailing westerly winds under the influence of the potential negative Southern Annular Mode[11] (SAM) phases. During late spring into summer, wetter-than-average conditions could develop over NSW, particularly on and east of the divide under the influence of a potential La Niña, warm sea surface temperatures and positive SAM.

If La Niña develops, this will increase the risk of heavy rain and flooding across parts of eastern Australia, particularly areas that entered spring with a wet landscape from above average winter rainfall. Dams and rivers are also relatively full in NSW and the Hunter, which could lead to flooding if heavy rainfall falls over the catchment. NSW has entered spring with a reasonably wet landscape after average to above average rainfall fell in winter increasing soil moisture and keeping vegetation green. Near-normal fire risk predicted by AFAC for NSW this spring, which is partially linked to their expectation of above-average rainfall during the next few months. If this wetter-than-average weather does not eventuate, the risk of fires will also be higher than normal.

Figure 1 – Seasonal Bushfire Outlook for Spring 2024[12]

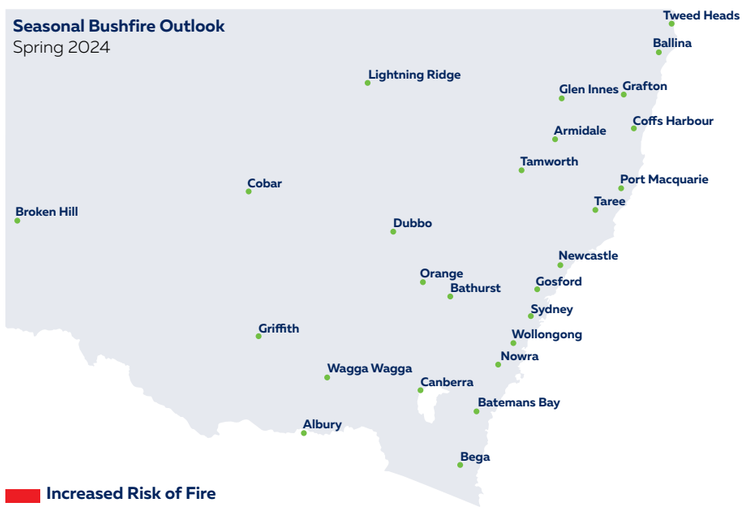
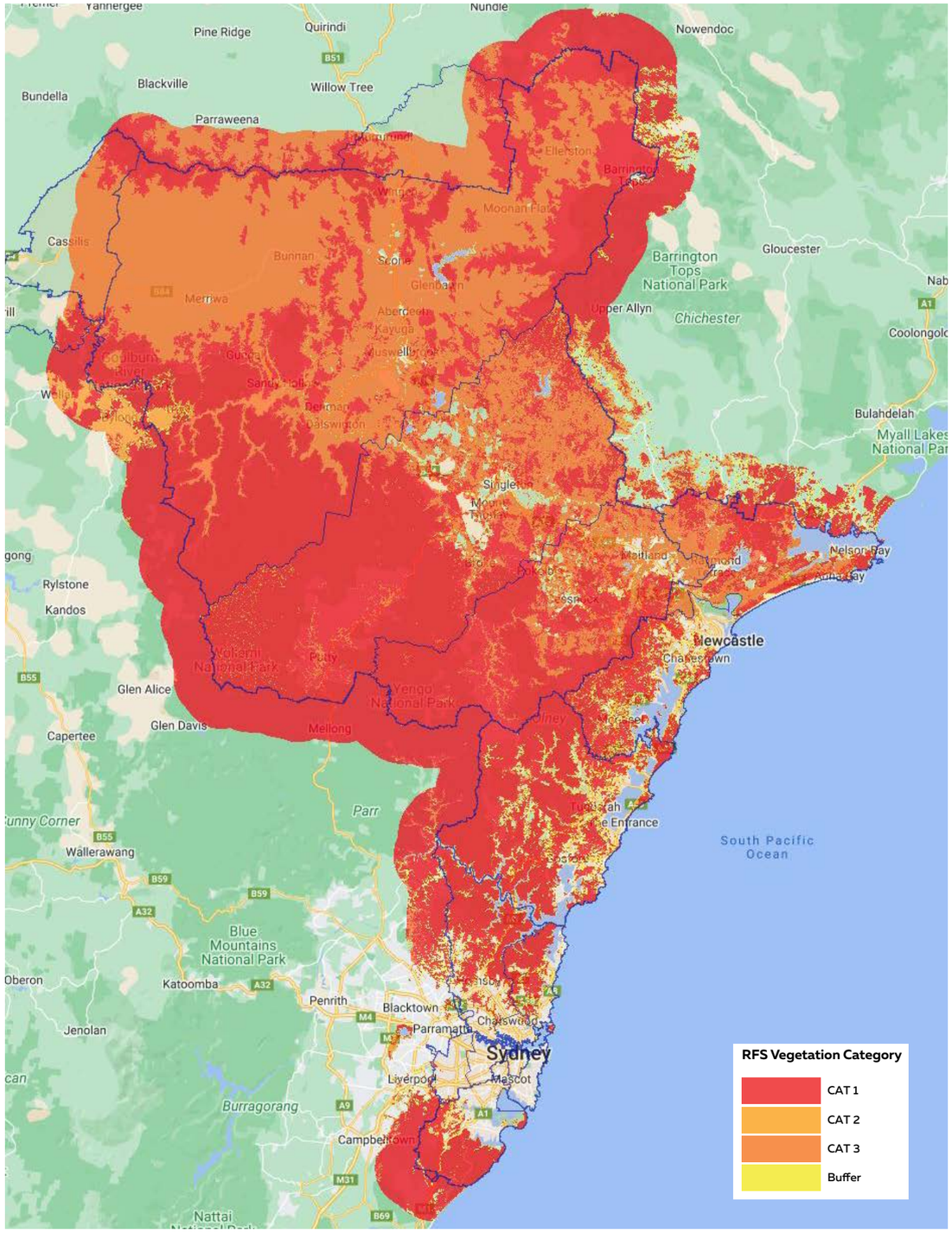


Figure 2 – Ausgrid's network and related Bushfire Prone Land Areas



11 The Southern Annular Mode (SAM) is a climate phenomenon that refers to the north-south movement of the westerly wind belt that circles Antarctica. It is characterised by changes in the strength and position of these winds, which significantly affect the climate and weather patterns of the southern hemisphere.

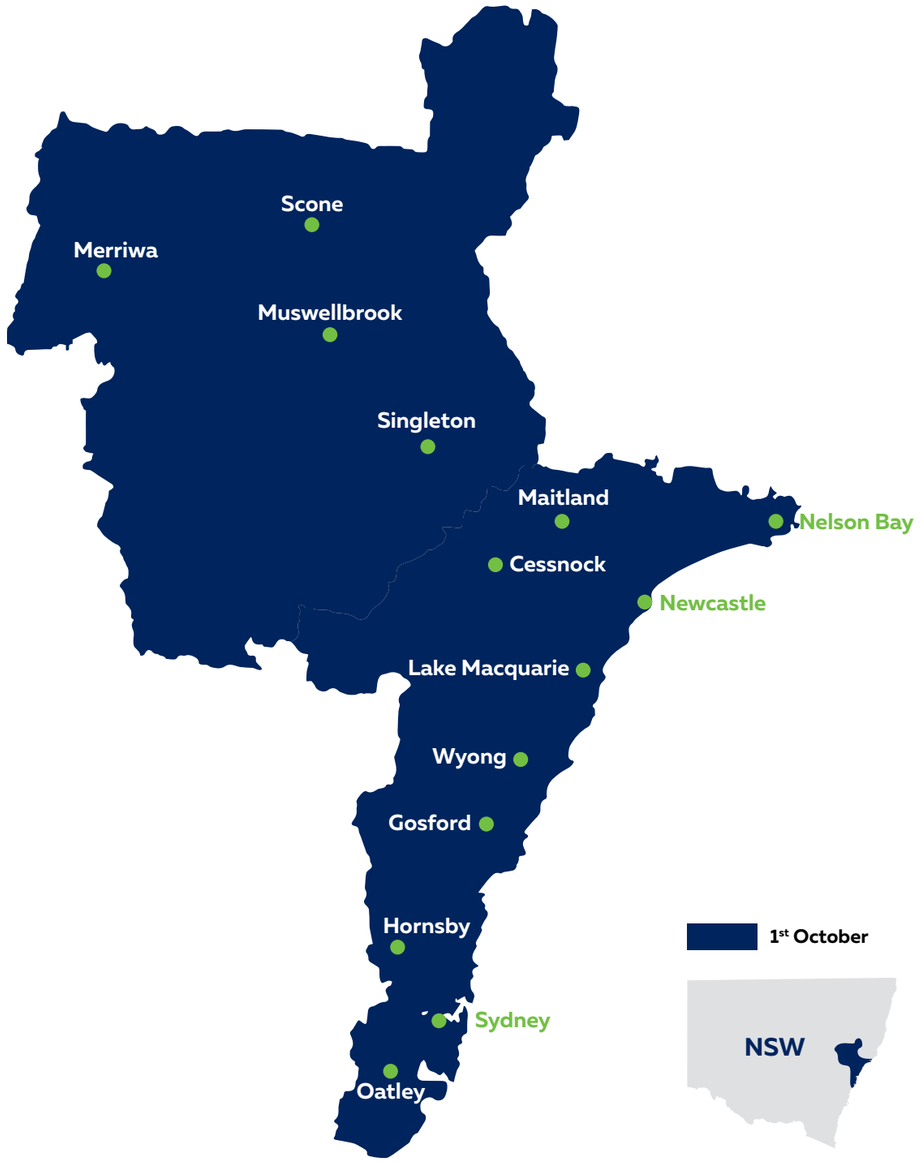
12 The entire seasonal report published by the Australian and New Zealand National Council for Australasian Fire and Emergency Services Authorities Council (AFAC) is located at https://www.afac.com.au/docs/default-source/bushfire-seasonal-outlook/spring-2024/afac-seasonal-bushfire-outlook_spring-2024.pdf

B.2 Permanent / Temporary Declaration of Areas by RFS and Network Operator's Actions

The Rural Fires Act 1997 provides for a statutory BFDP commencing 1 October and ending 31 March in the following year. This declaration can be varied on either a temporary (seasonal) or permanent (recurring) basis due to local climatic conditions and remains in force for the period specified unless it is revoked.

This year, there has been a temporarily altered BFDP commencement date affecting LGAs in Ausgrid's area, declared by the NSW RFS Commissioner due to local climatic conditions. Three LGAs which would normally have permanent variations in place commencing 1 September were moved to the 1 October. These LGA's were Singleton, Muswellbrook and the Upper Hunter. The map attached below as Figure 3 illustrates the applicable BFDP commencements across the Ausgrid Network.

Figure 3 – BFDP 2024 commencement for areas in Ausgrid's network.



Driving Improvements in Vegetation Management for Safer Communities

What?
An infield audit in 2023 highlighted areas for improvement in Ausgrid's vegetation management process, particularly in identifying and addressing all vegetation encroachments before the bushfire danger period.

So what?
While the audit revealed a need for further refinement in our processes, it provided an opportunity for Ausgrid to enhance our vegetation management efforts and better safeguard against potential bushfire risks, ensuring a higher standard of safety for the communities we serve.

What now?
Ausgrid has responded promptly, implementing a rectification plan to improve data accuracy, streamline vegetation management processes, and introduce new assurance mechanisms. As part of this effort, we have increased the number of private low-voltage (LV) lines audited and the way we work collaboratively with our customers. This improvement not only reinforces our assurance process but also demonstrates our commitment to ongoing monitoring and effectiveness in safeguarding against bushfire risks.

B.3 Aerial Consumer Mains on Bushfire Prone Private Land (HV and LV)

Ausgrid completed private main inspections on all identified overhead consumer mains in bushfire prone land during the period from April to August 2024. Defect notices were issued to property owners where any defect was identified. Throughout the other months of the year Ausgrid continues to complete private pole inspections once every five years as per the maintenance cycle for all private poles, including those located in bushfire areas. The customer has separate obligations for maintaining their installation in a safe condition and is required to address any identified bushfire risk defects within 60 days. However, if the customer does not address the defect, Ausgrid will arrange to rectify defects and seek to recover costs. Disconnection provisions are also provided for in the NSW Electricity Supply Act, associated regulations, and National Energy Retail Rules if there is an imminent safety hazard or access is restricted that prevents defect rectification.

Ausgrid identifies all high voltage customer sites located on bushfire prone land. These customers are requested to confirm the presence of overhead electrical installations on their sites and if confirmed are required to provide Ausgrid with a copy of their Installation Safety Management Plan addressing bushfire risk and a statement of compliance to indicate the site complies with the requirements of the plan. Response is required prior to the commencement of the BFDP.

Table B.1 presents performance metrics related to private lines and consumer mains for the reporting period. The figures for private lines assessed by Ausgrid may vary annually due to alterations in the classification of bushfire prone areas and changes in the customer network. The increase in the number of customers who had unresolved issues lasting more than 60 days occurred because Ausgrid actively communicated with these customers. This communication allowed them to schedule the necessary repairs, manage the impacts of weather that restricted site access, and cope with the increased financial impacts and cost of living. Ausgrid assessed these defects and established a timeline for completion to minimise any potential risks.

High Voltage Customers (HVCs) requiring additional risk mitigation includes those HVCs who either did not provide a statement of compliance or were found to have identified defects necessitating mitigation measures. In such cases, Ausgrid verifies that the appropriate risk mitigation steps are taken, which may involve inspections by Ausgrid. Our HVC's have again been compliant, with no HVC's requiring additional risk mitigation prior to the start of the reporting period.

Table B.1 Aerial consumer mains on bushfire prone private land

Performance Measure	Current reporting period		Last reporting period		Two reporting periods ago		Three reporting periods ago		Four reporting periods ago	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual
Private LV lines checked by the Network Operator	19,920	19,920	18,009	18,009	17,541	17,541	16,296	16,296	22,122	22,122
Number of directions for bushfire risk mitigation issued to LV customers by the Network Operator	n/a	1,288	n/a	456	n/a	928	n/a	558	n/a	1,366
Number of directions for bushfire risk mitigation issued to LV customers by the Network Operator that are outstanding by more than 60 days[a]	n/a	416	n/a	167	n/a	87	n/a	0	n/a	0
HV customers (metering point count) advised to undertake preseason bushfire checks in accordance with ISSC 31	366	366	373	373	359	359	262	262	96	96
HV customers (metering point count) providing statements of compliance in accordance with ISSC 31	92	92	98	98	95	95	92	92	96	96
HV customers (metering point count) requiring additional risk mitigation prior to start of the reporting period	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0
HV customers (metering point count) where additional risk mitigation has been completed prior to start of the reporting year	n/a	0	n/a	0	n/a	0	n/a	0	n/a	0

a Refers to directions issued under section 53C of the Electricity Supply Act 1995.

Table B.2 provides information on pre-summer bushfire inspection targets and their corresponding achievements. Ausgrid completed all targeted inspections and again had no outstanding tasks. Ausgrid continues to improve its approach to mitigating bushfire risk of the network through the upgrading of the legacy service mains technology with a modern more resilient construction where practicable. Last year Ausgrid transitioned to an aerial inspection using drones with improved effectiveness, over a continuous 12-month period, while maintaining the existing 3-year cycle for each bushfire capture region. As this program is over a 12 month cycle there were still open tasks in line with the program schedule.

Table B.2 Pre-summer bushfire inspections

Pre-summer bushfire inspections	Population	Target	Achieved	Open	Oustanding	Comments
Aerial Vegetation	138,338 (poles)	138,102	138,102	0	0	Inspection targets are based on all poles identified that support conductor spans located partially or completely within a bushfire prone area. This includes poles that may not be situated in a bushfire prone area themselves but are essential because they support a conductor passing through such areas.
Aerial Hardware	138,338 (poles)	46,315	44,693	1,622	0	To achieve better resource planning and manage overall network risk, Aerial Hardware inspections are now undertaken over a full year using drones with a three-year cycle. Therefore, inspections are always expected to remain Open after the reporting period. However, as these are not yet due for completion, they are not reported as Outstanding.
Service Mains	132,976 (spans)	3,052	3,052	0	0	All inspections are carried out in accordance with Ausgrid's inspection program, specifically focusing on mitigating the bushfire risks associated with the type of service wire construction that presents a higher bushfire risk.
Pole Inspections	138,338 (poles)	n/a	n/a	n/a	n/a	Ausgrid does not perform dedicated pre-summer bushfire pole inspections. Instead, we follow the procedure detailed in Table A.12, outlining our routine pole inspections, aimed at efficiently reducing bushfire risks.

The data presented in **Table B.3** provides an overview of the status of vegetation tasks prior to the commencement of the BFDP. For more than four years, there have been no identified unfinished pre-summer bushfire inspection tasks and this was achieved again this year. A significant portion of these tasks are identified using aerial LiDAR technology, and in cases where LiDAR is not feasible, routine ground-based visual inspections are employed. During this reporting period, the implementation of the LiDAR data processing methodology has led to a reduction in reported encroachments, achieved through the grouping of related encroachments. It's important to note that Ausgrid also undertakes vegetation tasks that do not have encroachment classifications, such as the removal of tree branches from service wires. The identification of hazard trees exclusively relies on ground-based visual methods and is limited to those situated on bushfire prone land.

Table B.3 Vegetation tasks

Bushfire risk category	Status	Encroachment Classification A1	Encroachment Classification A2	Encroachment Classification A3	Encroachment Classification A4	Hazard trees
Bushfire prone land	Identified	1,528	3,851	17,331	25,276	309
	Completed	1,528	3,851	0	0	258
	Open	0	0	17,331	25,276	51
	Outstanding	0	0	0	0	0

Table B.4 provides information on tasks generated from routine and pre-summer asset inspections that identify asset degraded conditions within or prior to the reporting period. Ausgrid continues to enhance its strategy for reducing the risk of bushfires caused by asset-related issues, adopting a more effective risk-based approach to prioritise asset tasks under its Job Prioritisation Framework. Since the adoption of the Job Prioritisation Framework the volume of tasks required to be completed prior to the start of the bushfire danger period has decreased from last report. This framework now includes additional tasks in the bushfire risk profile, such as pole termite treatments, which were not previously classified as bushfire asset tasks. Ausgrid has again had no outstanding tasks at the commencement of the BFDP.

Table B.4 Asset tasks

Bushfire risk category	Status	Emergency	CAT 2	CAT 3	CAT 4	Totals
Bushfire prone land	Identified	442	435	4,016	3,665	8,558
	Completed	442	329	1,710	521	3,002
	Open	0	106	2,306	3,144	5,556
	Outstanding	0	0	0	0	0

Glossary

Term	Definition
Aerial inspection vegetation / hardware	Assessments of powerlines, poles, vegetation and other equipment undertaken with helicopters, planes and/or unmanned aerial vehicles (UAVs) fitted with LiDAR and Photographic equipment.
AFAC	Australasian Fire and Emergency Services Authorities Council.
Agricultural and other	Examples include agricultural equipment, aircraft, watercraft.
AS 5577	Australian Standard Electricity Network Safety Management Systems, 2013, published by Standards Australia.
ASP or Accredited Service Provider	Persons and organisations accredited under the NSW Government's Accredited Service Provider Scheme, established under Part 3 of the Electricity Supply (Safety and Network Management) Regulation 2014.
Asset	Encompasses all the equipment and structures required for distribution, and utilisation of electricity, including poles, wires, transformers, control systems, and more.
Assisted failure	Any functional failure of a piece of equipment (component of an asset or asset) where the equipment was subject to an external force or energy source against which the network operator's standards for design and maintenance do not attempt to control.
BFDP	The statutory bush fire danger period (BFDP), nominally 1 October or earlier where the NSW RFS Commissioner declares a variation based on the recommendation of a local Bush Fire Management Committee (BFMC).
BSP	A Bulk Supply Point (BSP) refers to a location where high-voltage electricity is received from the transmission network. This point connects the higher voltage transmission system to the lower voltage distribution network, allowing for efficient distribution of electricity to homes and businesses.
Bushfire prone land	An area of land that can support a bushfire or is likely to be subject to bushfire attack, as designated on a bushfire prone land map. A bushfire prone land map is a map prepared in accordance with NSW RFS requirements and certified by the Commissioner of the NSW RFS under Environmental Planning and Assessment Act 1979 s.10.3(2).
Category 1 – 4 tasks	These categories characterise the condition of an asset and inform the prioritisation of tasks. Category 1 refers to an asset in a degraded state that poses a direct and immediate risk to public or staff safety, requiring rectification within 48 hours. Categories 2 to 4 reflect assets with degraded conditions of decreasing severity, which inform the risk-based priority for rectification. The rectification priority is determined by factors such as asset type, failure mode, rate of degradation, and remaining asset life. However, additional factors and considerations, including the broader consequences of asset failure, also influence the final prioritisation in accordance with the job prioritisation framework.
Conductor – LV	LV means 'low voltage' and is defined as a voltage below 1kV ac nominal.
Conductor – HV	HV means 'high voltage' and is defined as a voltage of 1kV ac nominal and above.
Conductor – Transmission	Transmission conductors form part of a transmission network. Sub-transmission conductors form part of a distribution network. Transmission and sub-transmission voltages are generally 33kV ac nominal and above.

Term	Definition
Consumers mains	Part of an electrical installation consisting of overhead conductors and support structures between the main switchboard of an electrical installation and a support structure that is the connection point with the distribution system.
Encroachment Classification A1 – A4	Vegetation encroachments into the minimum vegetation clearance as specified in ISSC3 2016 Guide for the Management of Vegetation in the Vicinity of Electricity Assets.
ENSMS	Electricity Network Safety Management System.
Fire	A state, process, or instance of combustion in which fuel or other material is ignited and combined with oxygen, giving off light, heat and flame. This includes 'smouldering' or 'smoke' events, and LV wires down events resulting in burning around the point of contact on a combustible surface. Excludes LV wires down arcing events on non-combustible surfaces. Network Scope: Applicable to any fire caused by, or impacting, a network asset.
Functional failure	Performance of a piece of equipment (or component of an asset or asset) that represents a reduction below acceptable limits of the specification for a piece of equipment resulting in reduced capability required for service. In general, a functional failure is represented by a defect condition where the equipment that is required for service can no longer perform its expected function and which results in an unplanned maintenance action to restore condition to an acceptable limit. Note: operation of protection equipment (e.g., fuse) within its design characteristics is not a functional failure.
Hazardous tree / Fall-in vegetation hazard	As per ISSC 3, visually defective vegetation (which is vegetation that is dead, dying or appears structurally unsound as identified from the perspective of the Network Asset as far as it is reasonably practicable to do so) that is outside the minimum Clearing Requirement distances from Electricity Assets and which may require pruning, cutting, or removal to obviate the risk of it falling, dropping, and contacting the assets.
High voltage into Low voltage	May also be referred to as HV LV intermix or HV injection. Typically refers to a situation where high voltage (HV) and low voltage (LV) electrical systems or components are unintentionally or improperly connected or mixed together.
ISSC 3	Industry Safety Steering Committee Guideline for the Management of Vegetation in the Vicinity of Electricity Assets, November 2016.
ISSC 31	Industry Safety Steering Committee Guideline for the Management of Private Overhead Lines, September 2019.
HSMS	Health and Safety Management System.
Incident	Defined in accordance with IPART's Electricity Network Reporting Manual – Incident Reporting, available on the IPART website.
Latitude (maintenance standard latitude)	The latitude sets the period of time before and after the Due Date within which the maintenance activity must be completed. Maintenance standards completed within this time period are defined to be completed by the Due Date. This allows for efficient maintenance planning and control.
LGA	NSW Local Government Area.
LiDAR	Light detection and ranging is a method for determining ranges by targeting an object with a laser and determining the distance using the time taken for the reflected light to reach the detector.
Major incident	Defined in accordance IPART's Electricity Network Reporting Manual – Incident Reporting, available on the IPART website.

Term	Definition
Major Event Day (MED)	A day in which the daily total system (i.e., not on a feeder-type basis) SAIDI value ("daily SAIDI value") exceeds a threshold value. The technical detail for performing the calculation is contained in Schedule 6 of Ausgrid's Distributor's License obtainable from IPART's website. MEDs are to be excluded from the network overall reliability standards and individual feeder standards. Its purpose is to allow major events to be studied separately from daily operation, and in the process, to better reveal trends in a daily operation that would be hidden by the large statistical effect of major events.
Momentary interruption	Defined as interruption to a distribution customer's electricity supply with a duration of 3 minutes or less, provided that the end of each momentary interruption is taken to be when the electricity supply is restored for any duration.
Network worker	A person who has been authorised by the network operator to plan or conduct work on or near the network. Includes persons employed by the network, persons engaged under a contract by the Network Operator, and persons authorised by the Network Operator and working for an Accredited Service Provider.
Network employee / network contractor	Includes all classes of authorised persons (network employee and network contractor). Accredited Service Provider employees are not included when undertaking work for or on behalf of third parties.
OH	Overhead.
Open (with respect to defects / tasks)	A defect / task that has not been rectified by the Network Operator at the end of the reporting period but where the time that has elapsed since being identified has not exceeded the standard time that the Network Operator has set for having the defect rectified.
Outstanding (with respect to defects / tasks)	A defect / task that has not been rectified by the Network Operator at the end of the reporting period where the time that has elapsed since being identified has exceeded the standard time that the Network Operator has set for having the defect rectified.
Peer group A1, A2, A3 and B hospitals	A hospital peer group classification applied to NSW public hospitals as defined by NSW Ministry of Health.
Plant and equipment	Cranes, elevated work platforms, cherry pickers, excavators, hand held tools, etc.
Public road vehicle	Includes plant and equipment packed up for travel (i.e., plant and equipment travelling on a public road to or from worksite).
Pole-top structures	A pole-top structure / component is any structure that is attached to a pole to support electricity mains and apparatus.
Power BI	An interactive data visualisation software product developed by Microsoft with a primary focus on business intelligence.
Power transformers	Transformers where the secondary / output voltage is 5kV ac nominal or above.
Private LV lines	Aerial consumers mains on bushfire prone private land.
Public worker	A party or parties that are conducting work that is not directly associated with the electricity network such as building work, landscaping, landfill work, excavations, road works. Includes the construction, maintenance, adjustment or dismantling of mobile plant and scaffolding.
Reactive plant	Includes reactors and capacitors.
Regulated SAPS	May be referred to as Network SAPS (includes temporary, emergency or permanent SAPS), which consist of a distribution system owned, controlled or operated, or proposed to be owned, controlled or operated, by a Network Operator.

Term	Definition
NSW RFS Vegetation Category	Vegetation Category 1: Areas of forest, woodlands, heaths (tall and short), forested wetlands and timber plantations. Vegetation Category 2: Rainforests, lower risk vegetation parcels, remnant vegetation. Vegetation Category 3: Grasslands, freshwater wetlands, semi-arid woodlands, alpine complex and arid shrublands. Buffers are created based on the bushfire vegetation, with buffering distance being 100 metres for vegetation category 1 and 30 metres for vegetation category 2 and 3.
Safe Approach Distance (SAD)	Encroachment into the applicable Safe Approach Distance for the type of individual involved.
SAP	Systems, Applications and Products is a business application for managing financials, logistics, human resources, assets, safety and other business areas.
Service mains / Service line	The electricity authority's conductors connecting the electricity distribution system to an individual customer's connection point (refer to the NSW Service and Installation Rules for further information on service connections and definitions).
SFAIRP	So Far As Is Reasonably Practicable. Typically referring to the requirement to ensure that risks / hazards are being eliminated (or if unable to be eliminated, minimised) so far as is reasonably practice.
SAIDI	The average derived from the sum of the durations of each sustained customer interruption (measured in minutes), divided by the total number of Ausgrid's customers (averaged over the financial year).
SAPS or Stand-Alone Power System	A system that: (a) generates and distributes electricity; and (b) does not form part of the interconnected national electricity system.
Shock	Reportable electric shocks greater than 50V rms that are to be reported to IPART and excluding those resulting from static discharge, defibrillators and where the system is nominally extra low voltage or involving the DC rail traction system.
Span	A section of overhead conductor between two supporting poles or structures. The term may also refer to the horizontal distance between the two pole attachment points.
Sustained voltage excursions outside emergency range	The Australian Standard AS 61000.3.100 defines and outlines measurement methodologies for steady-state voltage limits in public electricity systems. The main objectives of this standard are: • Define and describe the permissible limits of steady-state voltage variation at customer connection points within public electricity systems. • Establish a standardised methodology for assessing steady-state voltage parameters using power quality monitors. • Recommend threshold voltage levels for the detection of voltage dips and voltage swells that align with the specified steady-state voltage limits.
Tunnel	A tunnel owned and maintained by Ausgrid to provide an underground feeder path.
UG	Underground
Unassisted failure	Any functional failure of a piece of equipment (component of an asset or asset) where the cause of the failure is of a type for which the network operator's design and maintenance standards include specific controls to mitigate against the risk of failure and which is neither an assisted failure nor a maintenance induced failure. These failures are generally caused by a deterioration of the condition of the equipment and also include overhead connection failures and vegetation within the mandatory vegetation clearance window.
XLPE	Cross-linked polyethylene insulated cable.

Correspondence

www.ausgrid.com.au

General enquiries 13 13 65 (9.00am to 4.30pm Monday to Friday)

GPO Box 4009

Sydney NSW 2001

ABN: 78 508 211 731

Ausgrid