# Annual ENSMS Performance Report

29 October 2021

Ausgrid

# Contents

# A. Annual Performance Reporting - ENSMS

This Annual Performance Report has been prepared in accordance with the Electricity networks reporting manual - Safety management systems reporting (September 2020) (the Reporting Manual) issued by IPART to fulfil this statuary obligation.

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

Section A is Ausgrid's response to the reporting requirements in the Reporting Manual Appendix A - Annual performance reporting framework. This section includes the current reporting period performance measurement data for the period 1 July 2020 to 30 June 2021 (**Current Reporting Period**). Ausgrid has 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). Ausgrid will populate the performance measurement data for the previous periods as appropriate in future reports.

Abbreviations and terminology used throughout the report is defined in the glossary at the end of this report.

## A.1 Tier 1 – Major Incidents

Tier 1 incidents are defined as a 'Major Incident' in accordance with the Electricity networks reporting manual – Incident reporting (Reporting Manual - Incident Reporting).[1]

### Table A.1 Major Incidents

| ESSNM Objective | | Description of each major incident reported under the incident reporting requirement |
|---|---|---|
| **Safety of members of the public** | | Nil in the reporting period |
| **Safety of persons working on network** | | Nil in the reporting period |
| **Protection of property** | **Third party property** | Nil in the reporting period |
| | **Network property**[a] | Nil in the reporting period |
| **Safety risks arising from the loss of electricity supply**[b] | | • 26/09/2020 - Adverse Weather Impacts to Ausgrid Network overnight. Ausgrid has classified it as a significant outage due to adverse impact or disruption to the community affecting multiple LGAs in the Greater Sydney and Greater Hunter districts.<br>• 28/11/2020 - A Major Network Incident declared under Ausgrid's incident management framework due to widespread customer interruptions affecting multiple LGAs in the Greater Sydney and Greater Hunter districts.<br>• 01/12/2020 - Supply interruption causes the loss of network supply, for greater than 2 hours, to significant community infrastructure in the Maitland LGA. Interruption duration 2 hours 20 mins associated with adverse weather event. |

**a** Network property losses are not reportable under IPART's Reporting Manual Incident reporting requirements. For the purpose of this Reporting Manual, a network operator is to 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 Reporting Manual - Incident Reporting.

[1] The Reporting Manual – Incident Reporting is available on the IPART website, here: https://www.ipart.nsw.gov.au/Home/Industries/Energy/Energy-Networks-Safety-Reliability-and-Compliance/Electricity-networks/Electricity-Networks-Reporting

## A.2 Tier 2 - Incidents

Tier 2 incidents are defined as an 'Incident' in accordance with the Reporting Manual – Incident Reporting.

### Table A.2 Incidents

| ESSNM Objective | Description of each major incident reported under the Incident reporting requirement |
|---|---|
| **Safety of members of the public** | Nil in the reporting period |
| **Safety of persons working on network** | • 14/08/2020 - A network worker was cutting a cable and the knife slipped resulting in a laceration to the top of their finger requiring surgery. This occurred in the Northern Beaches LGA.<br>• 03/12/2020 - An ASP performing civil contract works within an Ausgrid substation had their left-hand index finger amputated at the knuckle because of a crush injury. This occurred in the Lane Cove LGA. |
| **Protection of third party property** | Nil in the reporting period |
| **Safety risks arising from loss of electricity supply[a]** | • 16/11/2020 - Adverse weather impacts to Ausgrid Network affecting multiple LGAs in the Greater Sydney and Greater Hunter districts that contributed to the declaration of, or resulted from, a Major Event Day (MED).<br>• 29/11/2020 - Widespread network impacts and supply interruptions to Ausgrid customers affecting multiple LGAs in the Greater Sydney and Greater Hunter districts. This event was initially reported as a MED however did not result in a MED.<br>• 01/12/2020 - Adverse weather impacts to Ausgrid Network affecting multiple LGAs in the Greater Sydney and Greater Hunter districts that contributed to the declaration of, or resulted from, a MED.<br>• 20/03/2021 - Widespread network impacts and supply interruptions to Ausgrid customers within multiple LGAs in the Greater Sydney and Greater Hunter districts that contributed to the declaration of, or resulted from, a MED. |

**a** As defined for reliability incidents in IPART's Reporting Manual – Incident Reporting.

## A.3 Tier 3 – Control Failure Near Miss

### Table A.3 Network Asset Failures

| Performance Measure | Population | 5-year average annual functional failures[f] | Annual functional failures (for reporting period)[e] | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Unassisted | | | Assisted | | |
| | | | No Fire | Fire | | No Fire | Fire | |
| | | | | Contained | Escaped | | Contained | Escaped |
| **Towers** | 724 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Poles (including street lighting columns/poles & stay poles)** | 512,452 | 539 | 10 | 1 | 0 | 746 | 3 | 0 |
| **Pole-top structures[a]** | n/a[d] | 565 | 415 | 4 | 0 | 205 | 4 | 0 |
| **Conductor – Transmission OH[b]** | 736 km | 38 | 15 | 0 | 0 | 47 | 0 | 0 |
| **Conductor – Transmission UG[b]** | 216 km | 7 | 9 | 0 | 0 | 2 | 0 | 0 |
| **Conductor – HV (including sub-transmission) OH** | 12,101 km | 373 | 104 | 0 | 0 | 180 | 0 | 1 |
| **Conductor – HV (including sub-transmission) UG** | 9,578 km | 307 | 250 | 0 | 0 | 5 | 1 | 0 |
| **Conductor – LV OH** | 18,014 km | 1,942 | 747 | 0 | 0 | 915 | 0 | 0 |
| **Conductor – LV UG** | 7,992 km | 531 | 453 | 0 | 0 | 13 | 0 | 0 |
| **Service line OH** | 711,099 | 6,599 | 3,763 | 2 | 1 | 3,819 | 0 | 0 |
| **Service line UG** | 255,847 | 185 | 205 | 0 | 0 | 14 | 0 | 0 |
| **Power transformers[c]** | 555 | 103 | 75 | 0 | 0 | 3 | 0 | 0 |
| **Distribution transformers** | 34,776 | 157 | 118 | 0 | 0 | 32 | 0 | 0 |
| **Reactive plant** | 301 | 14 | 8 | 0 | 0 | 0 | 0 | 0 |
| **Switchgear – zone / subtransmission / transmission** | 14,001 | 137 | 136 | 0 | 0 | 0 | 0 | 0 |
| **Switchgear – distribution (OH)** | 83,271 | 680 | 516 | 3 | 1 | 53 | 0 | 0 |
| **Switchgear – distribution (Ground based)** | 72,719 | 106 | 126 | 2 | 0 | 1 | 0 | 0 |

| Performance Measure | Population | 5-year average annual functional failures[f] | Annual functional failures (for reporting period)[e] | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Unassisted | | | Assisted | | |
| | | | No Fire | Fire | | No Fire | Fire | |
| | | | | Contained | Escaped | | Contained | Escaped |
| **Protection relays or systems** | 78,967 | 273 | 353 | 0 | 0 | 1 | 0 | 0 |
| **Zone / Subtransmission / transmission SCADA system** | 3,266 | 314 | 319 | 0 | 0 | 5 | 0 | 0 |
| **Zone / Subtransmission / transmission Protection Batteries** | 883 | 58 | 70 | 0 | 0 | 0 | 0 | 0 |

**a** Pole top structures/components are any structure that is attached to a pole to support electricity mains and apparatus.
**b** Transmission and sub-transmission voltages are generally 33kV AC nominal and above. Transmission conductors form part of a transmission network. Sub-transmission conductors form part of a distribution network.
**c** Power Transformers are transformers where the secondary/output voltage is 5kV nominal or above.
**d** Ausgrid does not record all individual pole top structure arrangements (e.g. cross-arms and insulators) in its corporate systems.
**e** The functional failure figures in the table are all discrete counts failure events inclusive of conductors.
**f** The 5-year average annual functional failures was calculated based on five financial years including the current reporting period.

Asset performance in a single year may vary against the 5 year historical average due to a range of factors. Weather in particular had a significant impact on asset performance in previous years relative to FY21 (current reporting period). In several categories (e.g. Conductor – HV and Conductor – LV), the total number of failures for the reporting period has decreased relative to the 5 year historical average, while a number of categories have shown increases relative to the 5 year historical average (e.g. Poles, Overhead Service Wires and Protection relays and systems). Tier 1 to Tier 3 performance indicators for these categories will continue to be monitored to assess whether a change in management approach is required inline with a changing risk.

## 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** | 4 | 2 | 2 | 2 | 0 | The volume of fire events due to grow ins has been low and seem to be trending similarly historically. Given the overall low numbers the increase in the current reporting period is not of concern. Ausgrid will continue monitoring trends and reassess the risk. |
| **Fire starts – fall-in and blow in** | 7 | 21 | 9 | 19 | 12 | Fall-in and blow-in events can be highly variable based on environmental factors such as major weather events. |
| **Interruption[b] – grow in** | 59 | 74 | 28 | 22 | 31 | There is no trend in causal factors at this stage to suggest a review of approach is required. Ausgrid will continue monitoring trends. |
| **Interruption – fall-in and blow in** | 1,487 | 2,445 | 1,229 | 727 | 845 | The volume of fall-ins and blow-ins varies year on year depending on major weather events. FY20 had a higher number of fall-ins and blow-ins due to major storm event days. |

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

## 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[a] and arc flash incidents[b] originating from network assets[c] including those received in customer premises[j]** | | | | | | |
| **Public** | 20 | 14 | 4 | 14 | n/a | Ausgrid has identified an increase in public shocks originating from the network. Ausgrid is using this data to target our public safety communication programs and asset replacement programs.<br>The decrease in employee / network contractor incidents aligns with the increase in critical control interactions and live work projects and training. |
| **Public worker** | 2 | 10 | 6 | 0 | n/a | |
| **Network employee / network contractor[d]** | 7 | 15 | 11 | 1 | n/a | |
| **Accredited Service Provider** | 2 | 3 | 0 | 0 | n/a | |
| **Livestock or domestic pet** | 0 | 0 | 0 | 0 | n/a | |
| **Contact with energised overhead network asset[e] (e.g. OH conductor contact)[j]** | | | | | | |
| **Public road vehicle[f]** | 242 | 239 | 323 | 99 | n/a | The number of events occurring in FY21 is in line with recent historical trends. |
| **Plant and equipment[g]** | 27 | 30 | 31 | 0 | n/a | |
| **Agricultural and other[h]** | 59 | 57 | 18 | 1 | n/a | |
| **Network vehicle** | 0 | 1 | 2 | 0 | n/a | |
| **Contact with energised underground network asset[e] (e.g. cable strike)[j]** | | | | | | |
| **Plant and equipment** | 71 | 78 | 108 | 33 | n/a | The number of events occurring in FY21 is in line with recent historical trends. |
| **Person with hand held tool** | 20 | 25 | 23 | 0 | n/a | |
| **Unauthorised network access (intentional)[j]** | | | | | | |
| **Zone / BSP / Transmission substation / switching station** | 1 | 1 | 2 | 1 | n/a | The number of events occurring in FY21 is in line with recent historical trends. |
| **Distribution substation** | 0 | 3 | 6 | 4 | n/a | |
| **Towers / poles** | 2 | 2 | 13 | 11 | n/a | |
| **Other (e.g. communication sites)** | 2 | 1 | 10 | 2 | n/a | |

| Detail | Event Count | | | | | Comments |
|---|---|---|---|---|---|---|
| | Current reporting period | Last reporting period | Two periods ago | Three periods ago | Four periods ago | |
| **Safe Approach Distance (SAD)[i,j]** | | | | | | |
| **Network employee / network contractor** | 2 | 0 | 0 | 0 | n/a | There is no trend in causal factors at this stage to suggest a review of approach is required. Ausgrid will continue monitoring trends. |
| **Accredited Service Provider** | 0 | 0 | 0 | 0 | n/a | |
| **Public** | 2 | 10 | 1 | 0 | n/a | |
| **Public Worker** | 27 | 44 | 15 | 5 | n/a | |

**a** All electric shocks (as per the IPART Reporting Manual – Incident Reporting) are reported except those resulting from static discharge, defibrillators, where the system is nominally extra low voltage or involving a DC supply.
**b** Incidents that result in a burn or other injury requiring medical treatment and result from exposure to an arc.
**c** Events caused by network assets, network asset defects or network activities, including shocks received inside customer installations, are reported. Customer installation events not associated with network assets are not reported.
**d** Includes all classes of authorised persons (network employee and network contractor). Accredited Service Provider employees are not included.
**e** Would not normally include contact with a pole, pillar, distribution substation etc, unless the contact results in subsequent contact with an energised asset.
**f** Including plant and equipment packed up for travel (ie, plant and equipment travelling on a public road to or from worksite).
**g** Cranes, elevated work platforms, cherry pickers, excavators, hand held tools, etc.
**h** Examples include agricultural equipment, aircraft, watercraft.
**i** Encroachment into the applicable Safe Approach Distance for the type of individual involved.
**j** Through continual improvement Ausgrid is further enhancing the reporting and capture of public safety data which has contributed to an increase in the quality of reporting of public safety incidents.

## 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**[a] | 45 | 43 | 36 | n/a | n/a | Trends in events are reported and investigated in accordance with Ausgrid's asset management system and incident investigation procedures. Corrective and preventative actions are applied where practicable. |
| **Sustained voltage excursions outside emergency range**[b] | 8 | 12 | 3 | n/a | n/a | The number of events in any one year can be highly variable depending on network conditions |
| **Reverse polarity** | 1 | 1 | 3 | 0 | n/a | The number of events occurring in FY21 is in line with historical trends. |
| **Neutral integrity due to poor workmanship or incorrect procedure**[c] | 2 | 0 | 2 | 0 | n/a | The number of events occurring in FY21 is in line with historical trends. |
| **Neutral integrity due to asset defect or failure**[c] | 0 | 0 | 0 | 0 | n/a | The number of events occurring in FY21 is in line with historical trends. |

**a** May also be referred to as HV LV intermix or HV injection.
**b** As defined by network operator with reference to the measurement methodologies used in Australian Standard AS61000.3.100.
**c** This only includes events that are reportable under the IPART Reporting Manual – Incident Reporting. Ausgrid is continuing to review the capture and collection of this data with a view to improve data quality.

## Table A.7 Reliability and Quality of Supply - Critical Infrastructure Incidents

| Type of critical infrastructure[a] (e.g. hospital, tunnel) | Minutes of supply lost[b] | Cause | Consequential safety impacts associated with supply issue |
|---|---|---|---|
| Events and buildings where greater than 5000 people could be affected by an outage | 2,586 | Asset Failure - Asset condition or defect | No public safety consequence reported |
| | 164 | Externally Caused (nature) - Weather | No public safety consequence reported |
| | 382 | Externally Caused (nature) - flora / fauna | No public safety consequence reported |
| | 159 | Externally Caused (people) - Third party | No public safety consequence reported |
| | 4 | Self-Cleared (No Cause Found) | No public safety consequence reported |
| Other community infrastructure of national, state or regional significance | 195 | Asset Failure - Asset condition or defect | No public safety consequence reported |
| | 11 | Externally Caused (nature) - flora / fauna | No public safety consequence reported |
| Other community infrastructure of national, state or regional significance (COVID-19 related)[c] | 906 | Asset Failure - Asset condition or defect | No public safety consequence reported |
| | 120 | Externally Caused (nature) - flora / fauna | No public safety consequence reported |
| | 94 | Externally Caused (people) - Third party | No public safety consequence reported |
| Peer group A1, A2, A3 and B hospitals | 851 | Asset Failure - Asset condition or defect | No public safety consequence reported |
| | 217 | Externally Caused (nature) - flora / fauna | Supply interrupted to hospital due to tree branch on HV mains during severe weather event. MED declared. |
| Rail and air transport systems where travel is affected | 52 | Self-Cleared (No Cause Found) | No public safety consequence reported |

**a** Critical infrastructure as identified in the network operator's formal safety assessment in relation to the safety risks associated with loss of supply.
**b** Number of minutes that the critical infrastructure was without a network supply.
**c** A supplementary critical infrastructure category was added for the COVID-19 quarantine hotels and other pandemic related critical infrastructure. The pandemic related infrastructure does not normally meet the requirements to be considered critical infrastructure.
**Note:** Incidents include outages and supply quality events that adversely impact critical infrastructure.

## 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)** | 251 | 389 | 327 | 287 | n/a | There was a lower number of claims in the current reporting period compared to the last reporting period due to a reduction in storm events across the Ausgrid network. |
| **Network Property (including non-electrical assets e.g. vehicles, building)** | | | | | | |
| **Damage (e.g. Fire, Physical impact or Electrical)** | 24 | 26 | 19 | 7 | n/a | Number of events in FY21 is inline with historical trends |

**Note:** Event counts should include any event where there is a reasonable likelihood that damage was caused by *electricity works*.

## A.4 Tier 4 – Control Implementation

### Table A.9 Amendments and Improvements to Formal Safety Assessments (FSA) or Associated Risk Treatments[a]

Controls applied by Ausgrid that are relevant to FSAs are reviewed and updated. The table below represents the key amendments and improvements associated with the risk controls for each FSA focus area:

| FSA | Amendments / Improvements |
|---|---|
| ALL | • The Stakeholder Engagement Framework was updated and published. |
| Public Safety | • Implementation of a revised Health & Safety Management System with a comprehensive review of all Health & Safety procedures including:<br>  ○ HS011-P0100 (Incident Management)<br>  ○ HS011-P0200 (Incident Investigation)<br>  ○ HS008-P0200 (Safety in Design)<br>• Ausgrid commissioned an internal audit to review effectiveness of public safety data capture, Ausgrid is actively addressing the recommendations identified within the audit.<br>• Implementation of revised dashboards and periodic reports for public safety incidents to further improve visibility of measured metrics driven from Ausgrid's Health and Safety Strategy.<br>• Ausgrid's internal approval process for the posting and publication of public safety messaging was refined to further improve timeliness and response to major events and emerging risks. |
| Worker Safety | • Workshops were undertaken to assist in the development of the ASP risk register for access to the network.<br>• Updates were made to technical documents including:<br>  ○ Electrical Safety Rules<br>  ○ ES4 (Accredited Service Provider Authorisations),<br>  ○ NS125 (Construction of Low Voltage Overhead Mains),<br>  ○ NS127 (Low Voltage Cable Joints and Terminations),<br>  ○ NS130 (Laying underground cables up to and including 11kV),<br>  ○ TG120 (Low Voltage Live Work Manual Book 1 - General Requirements)<br>  ○ TG121 (Low Voltage Live Work Manual Book 2 - Overhead Work)<br>  ○ TG122 (Low Voltage Live Work Manual Book 3 - Substation Work)<br>  ○ TG123 (Low Voltage Live Work Manual Book 4 - Underground Work)<br>  ○ TG124 (Low Voltage Assessment Framework)<br>• A multi-year project to comprehensively review and rationalise all Safe Work Method Statements (SWMS) was completed.<br>• Guidance documentation for the assessment of SFAIRP (So Far As Is Reasonably Practicable) has been published on the Health & Safety Management System (HSMS).<br>• Ausgrid's risk-based Health & Safety Assurance Program for FY21 was successfully completed. |

| FSA | Amendments / Improvements |
|---|---|
| | • The committee to review industry wide safety incidents for relevance to work on the Ausgrid network was identified and formalised as part of an update to the Electrical Safety Rules committee charter. |
| Property Protection | • Updates were made to technical documents including:<br>  ○ NS171 (Fire Stopping in Substations)<br>• NS187 (Passive Fire Mitigation Design of Substations) |
| Environmental Safety | As the risk of harm to the environment is already managed through the implementation of our ISO14001 certified Environmental Management System (**EMS**), a review of the Environment FSA conducted in December 2020 recommended to withdraw the separate FSA to avoid unnecessary duplication and potential inconsistencies. Ausgrid will continue to report Amendments / Improvements to our EMS related to Environmental Safety as part of the ENSMS Performance report.<br>Below are examples of improvements to Ausgrid's EMS related to aspects of the ENSMS during the 2020/21 reporting period:<br>• Updates were made to technical documents including:<br>  ○ NS174C (Environmental Handbook for Construction and Maintenance)<br>  ○ Tree Safety Management Plan<br>  ○ Replaced our Spill Response Guide with a new sticker for spill kits that includes a QR code for employees to access the latest response process and contact details<br>• Updates were made to Ausgrid's computer systems – specifically in WebGIS Environmental Layers:<br>  ○ Added climate change adaptation controls (for bushfire prone land and flood planning)<br>  ○ Added radio frequency antennas on Ausgrid poles<br>• Updates were made to training:<br>  ○ Environmental Handbook for Construction and Maintenance training<br>• Councils can now directly engage accredited service providers (ASP/1X accredited and authorised) Contestable Vegetation Management companies to complete contestable vegetation works near Ausgrid's Low Voltage overhead network.<br>• The following strategies and testing was undertaken:<br>  ○ Developed a Sulfur Hexafluoride (SF6) Strategy, including an SF6 inventory app.<br>  ○ Completed polychlorinated biphenyls (PCB) testing of our underground fluid filled cables - all in service cables are PCB free.<br>  ○ Established a new scrap equipment contract for disposal of PCB, SF6, lead and asbestos. |
| Loss of Supply Safety | • Training has been conducted to support the incident management framework:<br>  ○ New Emergency Duty Managers<br>  ○ New Executive Officers to support the incident Management Officers<br>• Revised and republished the Crisis Management Plan. |
| Bushfire | • The Bushfire Risk Strategy was reviewed and updated to incorporate recent improvements and learnings from the 2019/20 NSW bushfires.<br>• Risk assessments were reviewed and updated as required to verify Ausgrid is managing bushfire risk SFAIRP for application of spreaders, management of private poles and vegetation clearance exceptions. |

| FSA | Amendments / Improvements |
|---|---|
| | • Updates were made to the bushfire key controls documented in network standards:<br>  ○ NS125 (Construction of Low Voltage Overhead Mains),<br>  ○ NS126 (Construction of High Voltage Overhead Mains),<br>  ○ NS179 (Vegetation Management), and<br>  ○ NS262 (Private Mains Bushfire Risk Inspection).<br>• The Bushfire Management Program Execution Plan was updated with key changes to reflect the revised Bushfire Risk Strategy.<br>• Ausgrid is participating in Recommendation 54 of the July 2020 NSW Bushfire Inquiry with NSW electricity network providers, Energy and Utility Services Functional Area Coordinator (EUSFAC) and associated Functional Area Coordinators. |

**a** Adjustment or modifications made by the network operator to formal safety assessments, or risk treatment action plans, including those changes informed by consideration of the results of the investigation and analysis of incidents, near misses or asset failures, where the network operator has assessed that existing assessments or risk treatments do not eliminate or reduce risk so far as is reasonably practicable.

## Table A.10 Design, construction and commissioning

| Performance measure[a] | Current reporting period | Last reporting period | Two reporting periods ago | Three reporting periods ago | Four reporting periods ago |
|---|---|---|---|---|---|
| **Designs for which Safety in Design (SiD) reports have been completed** | 1,472 | 1,732 | 938[d] | n/a | n/a |
| **Designs for which Safety in Design (SiD) reports have been audited** | n/a[i] | 17 | 17[d] | n/a | n/a |
| **Contestable designs certified[b]** | 1,440 | 1,275 | 1,733[h] | 1,625[h] | 1,474[h] |
| **Contestable level 1 project safety reviews performed[c]** | 4,926 | 5,145 | 4,992 | n/a | n/a |
| **Contestable level 2 project safety reviews performed[c]** | 4,178 | 3,953[f] | n/a | n/a | n/a |
| **Non-contestable project safety reviews performed[c]** | 12,355[g] | 11,465[g] | 6,461[g] | 4,489[g] | 585 |
| **Project closeout reports completed for contestable projects** | 0[e] | 0[e] | 0[e] | 0[e] | 0[e] |
| **Project closeout reports completed for non-contestable projects** | 1,165 | 1,635 | 1,562[d] | 1,299[d] | 1,681[d] |
| **Project closeout reports audited for contestable projects** | 0[e] | 0[e] | 0[e] | 0[e] | 0[e] |
| **Project closeout reports audited for non-contestable projects** | 0 | 0 | 0 | 0 | 0 |

**a** The unit of measure is the number of designs/projects/connections
**b** The network operator is to advise where no contestable designs have been performed.
**c** A safety review would include checking that work on or near the network is compliant or being performed safely.
**d** Reporting period for this measure was from 1 October to 30 September. Current reporting period was for financial year (1 July 2020 to 30 June 2021).
**e** No close outs were recorded during the reporting period due to changes in Ausgrid's involvement with contestable connections.
**f** Reporting metric updated retrospectively for FY20. Previous reporting was inspections raised, not performed. Future reporting will continue to align to this metric.
**g** Includes safety interaction data.
**h** All data refreshed to align with financial year. Now also includes design certification of amendments.
**i** The SiD procedures were reviewed and updated during the reporting period. All SiD reports are independently audited, reviewed and authorised by function leads. This involves at least two levels of review, in the case of distribution projects a third level of authorisation and in the case of major projects each discipline engineer within a function will sign-off their respective function as well as the function lead. An external audit process is under consideration to validate the updated SiD process and where necessary individual projects.

## Table A.11 Inspections (assets)

| Performance measure | Inspection tasks | | | | Corrective action tasks | | | | Comments |
|---|---|---|---|---|---|---|---|---|---|
| | Planned inspection tasks[a] | Achieved[b] | Open[c] | Outstanding[c] | Tasks identified (all categories)[b] | Achieved | Open | Outstanding | |
| **Transmission Substations** | 8,686 | 8,807 | 3,608 | 0 | 1,001 | 836 | 299 | 150 | 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 within the early half of latitude (refer to glossary for explanation of latitude).<br><br>Inspection tasks within latitude at reporting date are classed as Open and those outside latitude are classed as Outstanding.<br><br>Ausgrid manages all outstanding inspection/corrective tasks at weekly and monthly intervals via a combination of multi-level meetings, dashboards, reporting and analysis, work prioritisation and resourcing. |
| **Zone Substations** | 39,251 | 39,815 | 15,838 | 1 | 2,947 | 2,606 | 904 | 398 | |
| **Distribution Substations** | 18,268 | 18,292 | 8,699 | 2 | 3,134 | 2,618 | 1,185 | 1,554 | |
| **Transmission OH** | 5,678 | 6,074 | 2,252 | 3 | 932 | 592 | 890 | 718 | |
| **Transmission UG** | 876 | 877 | 619 | 0 | 399 | 397 | 31 | 5 | |
| **Distribution OH** | 84,405 | 85,852 | 29,061 | 1 | 13,731 | 8,648 | 10,863 | 9,856 | |
| **Distribution UG** | 14,861 | 14,305 | 16,224 | 0 | 944 | 529 | 535 | 1,139 | |

**a** Includes all ‘Open’ and ‘Outstanding’ tasks from the previous reporting period.
**b** Inspection tasks must only be reported as ‘Achieved’ when all associated corrective action tasks to address the faults of a particular asset have been identified.
**c** ‘Open’ and ‘Outstanding’ tasks are those tasks categorised as such at the end of the reporting period.

## Table A.12 Inspections (vegetation) Aerial/Ground based

| Bushfire risk category | Population (spans / poles) | Target | Achieved | Outstanding | Comments |
|---|---|---|---|---|---|
| **Aerial based** | | | | | |
| **Non-bushfire prone land** | n/a / 380,988 | 0 | 0 | 0 | Ausgrid does not conduct aerial vegetation inspections in non-bushfire prone land. Vegetation maintenance in non-bushfire prone land is undertaken by a scope and cut approach by vegetation maintenance crews. |
| **Bushfire prone land** | n/a | n/a | n/a | n/a | Ausgrid only conduct Aerial inspections as part of the yearly Pre-Bushfire Preparation process and this is shown in table B.2. Vegetation maintenance is otherwise undertaken by a scope and cut approach by vegetation maintenance crews. |
| **Total** | n/a / 380,988 | n/a | n/a | n/a | n/a |
| **Ground based** | | | | | |
| **Non-bush fire prone land** | n/a / 380,988 | 79,045 | 78,037 | 0 | 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 within the early half of latitude (refer to glossary for explanation of latitude).<br><br>Inspection tasks within latitude at reporting date are classed as Open and those outside latitude are classed as Outstanding. |
| **Bushfire prone land** | n/a / 131,464[a] | 23,980 | 31,004 | 0 | |
| **Total** | n/a / 512,452 | 103,025 | 109,041 | 0 | |

**a** The pole population provided does not align with Table B.2 due to reporting period differences.

## Table A.13 Public electrical safety plans and activities[a]

| Network operator public safety programs / campaigns | Details |
|---|---|
| Storm Safety | **At risk group:** General Public<br><br>**Program Overview:** Storm and severe weather events continue to be a significant contributor to hazards associated with the network. In the period July 2020 to Jun 2021 there were 398 incidents of 'Wires down - in storm', and whilst down on the previous year it continues to be an ongoing risk area. In general, the number of incidents correlates to the frequency and severity of weather events experienced within the network area we operate in. Whilst this is driven by factors outside the control of Ausgrid, we proactively communicate with the general public to drive awareness of these risks.<br><br>We have a two-pronged approach to communicating our safety messaging:<br>1. Proactive advertising to drive awareness outside an incident<br>2. Reactive communications following a weather event<br><br>Our proactive advertising is used to promote key safety messaging throughout 'Storm Season'. In FY21 we utilised paid advertising to drive awareness on educating the public to always assume fallen powerlines are live, stay at least eight metres (two car-lengths) away and to call Ausgrid's emergency line. A combination of digital advertising was used to deliver this messaging including Addressable TV (digital TV advertising utilising smart TVs or TVs using a set top box) as well as weather triggered digital banner ads that were turned on utilising weather warning triggers (strong wind, gale, storm force, hurricane force, severe thunderstorms, severe weather).<br><br>Our reactive communication includes a spectrum of activity depending on the severity of the weather incident. In March 2021 we experienced flooding across parts of the network, and therefore our communications during this time focused on driving awareness of hidden hazards within storm debris. As part of our reactive communications, we leverage social media to warn of severe weather warnings issued by the Bureau of Meteorology, deliver electrical safety messaging, warn of known hazards on the network and provide updates on Ausgrid's response efforts to restore the network. Information is also privatively provided on our website, with our Storm Page having been extensively updated following learnings from storm events in 2020.<br><br>Ausgrid uses a variety of channels to communicate its safety messaging, and the degree to which these are utilised is dependent on the severity of the impact form the weather event. Other platforms we utilise when required include Variable Message Sign (VMS) boards, additional paid media (such as Radio).<br><br>**Key Messages:**<br><u>Safety around fallen power lines</u><br>• Stay away from fallen powerlines or any debris that may have come into contact with them. They may still be live.<br>• Keep an eight-metre distance from any fallen powerlines or any items such as trees, which may have come into contact with live wires.<br>• Always assume fallen powerlines are live. |

| Network operator public safety programs / campaigns | Details |
|---|---|
| | Be prepared for a storm by:<br>• Tidying up loose items and trimming trees, but do not attempt to trim trees near powerlines.<br>• Keep a torch and radio handy<br>• Keeping your house weatherproof. Always replace broken roof tiles, keep gutters clean and fix leaks to ensure water cannot access electrical systems or appliances.<br>• Being sure you know the location of your mains switch, or switches that turn off the electricity supply<br><br>During a storm:<br>• Stay away from fallen powerlines and service wires or anything touching them.<br>• Report any fallen powerlines or service wires, trees or branches in contact with powerlines, fires or property damage to your local electricity distributor as soon as possible.<br>• Play it safe by unplugging sensitive appliances such as computers, video recorders and televisions.<br><br>After a storm:<br>• Stay away from powerlines or service wires or any debris that may have come into contact with them. It is recommended that you keep an eight-metre distance from any fallen powerlines or any items such as trees, that may have come into contact with the live wires.<br>• Get appliances checked by a professional before you plug them back in.<br><br>**Analysis:** Ausgrid continues to work with its media agency to review media efforts post campaigns. The digital proactive advertising campaign cumulatively delivered 575,847 impressions. We are working with our media agency to review the list of weather warning triggers to see how we can increase this next year. Our social media activity is evaluated through Hootsuite (our social media management platform) to review impressions, engagement rates and comments for feedback. Similarly, we capture feedback on our website based on analytics and qualitative feedback from customers.<br><br>**Program Status:** Ongoing - Storm safety continues to be an ongoing risk with the public and an area of high focus within Ausgrid's communications program**.** |
| Children's Safety | **At risk group:** Children – focusing on primary school children from Kindergarten to Year 6<br><br>**Program Overview:** Children's safety around electricity continues to be a focus area for Ausgrid's Public Safety Communications. We utilise our annual Electricity Safety Week (ESW) program to deliver electrical safety messages to primary school students in Ausgrid's network area. The program was developed in partnership with the NSW Department of Education and aligns to the PDHPE syllabus for Kindergarten to Year 6. The content and format of the program aims to show young people how electricity works, how to use it and how to stay safe around it. |

| Network operator public safety programs / campaigns | Details |
|---|---|
| | We reach out to and offer every primary school located in Ausgrid's network distribution area (Sydney, Newcastle, the Central Coast and Hunter Regions) the opportunity to register for a Free Electricity Safety Week Resource Pack. The pack contains lesson booklets for the teacher, access to interactive learning modules, safety posters, stickers, merit certificates and simple circuit kits.<br>This is a program Ausgrid has run since 2002 and has proudly shared with other distribution networks. The program is now delivered in schools across NSW by Essential Energy, Endeavour Energy and also in QLD by Ergon and Energex utilising the content developed by Ausgrid.<br><br>**Key Messages:**<br><u>Electricity safety for school students</u><br>• Play in open spaces away from electricity poles and powerlines<br>• Stay away from electricity substations and power equipment<br>• Never put a metal object in a toaster or power point<br>• Keep water away from electrical appliances and power cords<br>• If you see a dangerous situation, tell an adult<br>• If you see fallen powerlines, stay at least 8metres away from it and anything it may be touching<br><br><u>Substation and school holiday safety</u><br>• Don't enter a substation<br>• Don't try to retrieve anything that has gone over a substation fence – call Ausgrid and we'll get it for you<br>• Call Ausgrid if you see anyone climbing over fences<br>• Obey substation warning signs<br><br>**Analysis:** In 2020 we had 94% participation from schools with 805 primary schools participate from the Ausgrid network. This marks the continuation of Ausgrid successfully achieve over 90 percent in school registrations for eight consecutive years. We continue to use teacher feedback provided via an online survey to assess effectiveness and identify areas for improvement.<br>• 805 primary schools registered for ESW 2020, representing 94% in the network area<br>• 21 staff volunteers presented to over 30 primary schools, delivering over 45 virtual presentations<br>• Our staff volunteers presented across the network in Sydney, Central Coast, Newcastle and the Hunter<br>• With the emergence of home schooling following COVID, we were also able to provide educational material to 38 home schools<br>• 99% of teachers said they will consider participating in Electricity Safety Week again in 2021<br>• 89% believed electricity safety activities helped their students be safer around electricity<br>• 88% said the program complements the school's scope and progression for Science & Technology<br>• 53% of teachers surveyed indicated their approach to Electricity Safety Week changed this year due to COVID-19 |

| Network operator public safety programs / campaigns | Details |
|---|---|
| | **Program Status:** Ongoing – we review the ESW program each year to ensure it remains relevant and effective. The 2021 program is scheduled for 6-10 September 2021, however there are some challenges in running this program due to the impact of COVID and the stay-at-home orders currently.in place. We are evaluating alternative approaches that can be utilised to ensure the core safety messages from the program are still delivered. |
| Industry Safety - Unintended contact with overhead and underground cables | **At risk group:** Trades and outdoor workers including building and construction workers, crane and machinery operators and truck drivers.<br><br>**Program Overview:** Overhead (OH) and Underground (UG) conductor strikes continue to be a high-risk area on the Ausgrid network. In the period July 2020 to Jun 2021 there were 328 OH conductor strikes, with the majority (74%) due to road vehicles. Similarly, there were 4 high potential incidents (HPIs) and 31 SAPEHS reported incidents of Cable Strike – Dig Ins. Additionally, there were several breaches of clearance incidents with 8 HPIs and 33 hazards reported.<br><br>To support education of this Industry Safety Ausgrid leveraged paid advertising promoting the “Look High, Wide and Low” safety messaging in relation to checking for overhead powerlines and underground cables when working. This was delivered through paid advertising in the NSW Construction Site Safety Guide 2020/21. This is an initiative supported by the National Safety Council of Australia Foundation, Master Builders Association NSW, and Safe Work Australia. Approximately 3,180 billboards were distributed to:<br>• construction company members of the MBA NSW, NSW members of CICA, NPCAA, CCF, PFSF, CPAA and CSDAA<br>• Tier 1, 2 & 3 construction companies in NSW<br>• TAFE Colleges and training institutions in NSW<br>• MBA NSW also distributed amongst active construction sites, new members and for use in on-site and off-site WHS training<br><br>Additionally, to support safe practices we promoted the “permission to pause” messaging in the 2021 Electrical Trades Union (ETU) Diary. The messaging in the advert encouraging workers to always pause if they don’t feel safe.<br><br>Ongoing activities also support addressing this risk group, with information on our website, promotion of safe clearances and Dial Before You Dig messaging on social media, and regular engagement with key industry groups such as Dial Before You Dig NSW, Safe Work NSW, and adhoc groups (as requested).<br><br>**Key Messages:**<br><u>Overhead power line safety</u><br>• Keep a safe distance or clearance from overhead powerlines.<br>• Consider appropriate clearance when working around powerlines as the safe distance can vary according to the size and voltage of the power line.<br>• Look up to check the location and distance of powerlines before beginning any outdoor activity.<br>• Set-up or build structures well away from powerlines.<br>• Set up plant, equipment and vehicles for safe distance or clearance from powerlines during operation (e.g. Work platforms, cranes, cement trucks, tip trucks, etc). |

| Network operator public safety programs / campaigns | Details |
|---|---|
| | Underground cable safety<br>• Always dial 1100 before you dig and stay well clear of underground powerlines.<br>• Always follow the safe work guidelines provided by utilities when working around underground cables.<br>• Plan your work, have the latest utility plan on site and always manually locate cables before you excavate<br>• The Dial Before You Dig service may not have details of any private underground mains on individual properties. In this instance, a licensed electrician should be contracted to provide a sketch of private properties to identify private underground mains. Refer Clause 2.4.4.1 of the 'Service & Installation Rules of NSW'1.<br><br>**Analysis:** the NSW Construction Site Safety Guide 2020/21 is evaluated in terms of reach (approximately 3,180 billboards were distributed) as well as verbatim feedback received from its recipients. Our social media activity is evaluated through Hootsuite (our social media management platform) to review impressions, engagement rates and comments for feedback. Through improved collaboration across the business, we hope to better measure the impact of these activities through a reduction in the number of incidents longer term.<br><br>**Program Status:** Ongoing – Industry Safety continues to be a high-risk audience for Ausgrid, Work is currently underway to better evaluate these incidents to better inform the FY22 Communications Plan for this audience group. |
| Community Electrical Safety / CALD Community | **At risk group:** General Public with a focus on the Culturally and Linguistically Diverse (CALD) Community<br><br>**Program Overview:** Awareness of Electrical Safety is applicable to all members of the general public; however due to variances in regulations and practices internationally, and the growing diversity of our population, there was a greater need to promote Electrical Safety amongst the Culturally and Linguistically Diverse (CALD) Community.<br><br>Ausgrid has partnered with Sydney Alliance and four (4) other energy companies (Endeavour Energy, Jemena, AGL & Origin) to co-create the Voices for Power 'Train the Trainer' program. This is a trial initiative working closely with community leaders from across the Filipino, Vietnamese, South Asian, Pacific Island and Maori, Jewish, Middle Eastern Christian and Muslim communities in Greater Sydney. This program is a 12-month trial initiative running from February 2021 to February 2022. To date we have developed training content material in partnership with Sydney Alliance and community leaders. Unfortunately, the program has been impacted due to COVID with the first pilot training session having taken place July 2021.<br><br>**Key Messages:**<br>Safety around fallen power lines<br>• Stay away from fallen powerlines or any debris that may have come into contact with them. They may still be live.<br>• Keep an eight-metre distance from any fallen powerlines or any items such as trees, which may have come into contact with live wires.<br>• Always assume fallen powerlines are live. |

| Network operator public safety programs / campaigns | Details |
|---|---|
| | DIY electricity safety / Hidden Dangers<br><br>• Check for wires before drilling into walls, floors and ceilings. Look up and around you. When using ladders or carrying other tall objects, always look out for powerlines and take care to avoid them.<br>• Avoid contact with underground cables.<br>• When painting eaves, replacing or cleaning gutters, avoid getting close to the electrical wires that connect your home to the power poles.<br>• When changing a blown light bulb, make sure the power is off to avoid being harmed by exposed filaments.<br>• Never use more than one double adaptor in a single power point.<br>• Stay well away from your service line. Your service line is the overhead or underground mains and wires which are located on your (private) property.<br><br>**Analysis:** This program is ongoing; analysis will be conducted on completion of the program. As an indication we will be reviewing the programs reach through participation numbers and diversity of communities engaged, changes in level of energy literacy via pre and post training surveys, as well as qualitative feedback received from the participants, trainers, community leaders and Voices for Power program managers.<br><br>**Program Status:** On going – this program is scheduled to run until February 2022. |
| Bushfire Risk Management | **At risk group:** Private pole owners<br><br>**Program Overview:** To complement the operational efforts Ausgrid undertakes as part of its Bushfire Risk Management, communications are utilised to support these initiatives. A combination of channels is used including direct mail, newspaper advertisements, social media and the website.<br><br>Ausgrid currently delivers communications on this in two ways:<br>1) Information on obligations as a private pole owner via mail out (June 2021)<br>2) General Awareness of Ausgrid's Bushfire Risk Management Program via print & social media (Sept, Feb-July)<br><br>**Key Messages:**<br>• If your property has private power lines you have a legal obligation to ensure these power lines and poles do not cause a fire or other hazard<br>• Private pole owners are responsible for the safe operation and maintenance of their electrical installations<br>• Ausgrid expects that this includes regular inspections, testing and maintenance work, including keeping vegetation a safe distance, to help prevent them from becoming a bushfire risk.<br><br>**Analysis:** In 2021 15,000 letters were sent to Private Pole owners reminding them of their obligations. This number is determined by the area being reviewed as part of our cyclical review program. We updated with website, continuing the upgrades from 2020 with our interactive map and flight schedule. Social Media was utilised to drive awareness of the helicopter patrols as well as paid print advertising in September 2020 for our Aerial Thermal Surveying. Adverts were placed in the following publications for Sept 2020: |

| Network operator public safety programs / campaigns | Details |
|---|---|
| | • Peninsula News 07/09/2020<br>• Coast Community Chronicle 9/09/2020<br>• Cessnock Advertiser 9/09/2020<br>• Newcastle Herald 9/09/2020<br>• Coast Community News 11/09/2020<br>• Maitland Mercury 11/09/2020<br><br>**Program Status:** Ongoing – however the timings and depth of communications are driven by the needs and timings of our operational activity, which vary from year to year. If successful we'll look to see how we can expand the program to reach a broader part of our network. |
| Other | **At risk group:** General Public<br><br>**Program Overview:** Ausgrid encourages its staff to be our eyes and ears both online and offline to uphold the standards of the safe depiction of electricity in the community. This has resulted is staff reporting unsafe electricity practices in advertising or content visible on social media channels, which Ausgrid has successfully raised its concerns on to either edit or remove.<br><br>Ausgrid contacted Budget Direct in September 2020 following their launch of their new 'Bad Dog' advertising campaign. The video depicted a Jack Russell running with a lightsabre that slices a power pole, causing it to fall through a house. The vision shows police officers standing over the fallen powerlines and people standing in the house close to sparking wires. The use of a lightsabre also looks like live electricity. Ausgrid was able to raise these concerns with Budget Direct and were successfully able to have the ad edited to remove the sparking and lines; and add a safety message to stay 8 meters/2 car lengths away from fallen power lines.<br><br>Similarly in March 2021, Ausgrid staff came across a TikTok video of a teenager climbing onto a trailer to touch a service wire while holding onto an earthed metal bracket. While the teenager was thankfully unharmed during the incident, this was an incredibly dangerous stunt that could have led to fatal consequences under different circumstances. Additionally, a video like this going viral runs the risk of encouraging others to perform similar acts on our low voltage distributor mains or even high voltage mains. In response to this Ausgrid engaged the Office for the eSafety Commissioner who was able to have the video removed from TikTok and Facebook – where it had also been shared - to prevent future copycat behaviour.<br><br>**Program Status:** In both instances the concerns raised had been rectified. More broadly, our encouragement of staff to be our eyes and ears within the community is on-going. |

**a** Network operator to provide details on the plans and other activities that the network operator undertook to provide safety information to the public. Examples may include a publication of a Public Electrical Safety Awareness Plan, advertisements associated with electrical safety and awareness, publication of a bushfire risk management plan, shocks and tingles awareness program, etc.

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

| Audit scope | Identified non-compliances | Actions[b] |
|---|---|---|
| **Bushfire Season Preparedness and Vegetation Contract Management**<br>assessed whether preparation processes for the bushfire season were operating effectively | No non-compliances were identified; however improvement opportunities were recommended. | There were no non-compliances that required actioning. |
| **ISO14001 Environmental Management System**<br>Elements 6 & 7 of the ISO standard were reviewed to ascertain how they have been implemented in practice. The clearance of prior internal audit recommendations external review non-conformities, were also reviewed | No non-compliances were identified; however improvement opportunities were recommended. | There were no non-compliances that required actioning. |
| **Training Review**<br>Assessed the processes, reporting and operation of controls with respect to: Training needs analysis, Learning Management including the Learning Management System controls; Monitoring, reporting and escalation of overdue training; and the Appointment of training providers. | No non-compliances were identified; however improvement opportunities were recommended. | There were no non-compliances that required actioning. |
| **ISO55001 – Asset Management System**<br>Assessed whether the Asset Management System (AMS) is designed to meet the requirements of ISO55001:2014 and that Ausgrid's Asset Management Operations are performing in compliance with the documented AMS. | No non-compliances were identified; however improvement opportunities were recommended | There were no non-compliances that required actioning. |
| **Advanced Distribution Management System (ADMS) implementation**<br>The audit assessed for Phase 1 and 2 of the system implementation:<br>The quality of proposed operational controls for Phase 1 post-implementation; the implementation of recommendations from prior the "Pre-implementation" audit; Adherence to the adopted project management framework; and Accurate measurement and reporting of progress against both the project plan and the business case. | No non-compliances were identified; however improvement opportunities were recommended | There were no non-compliances that required actioning. |

| Audit scope | Identified non-compliances | Actions[b] |
|---|---|---|
| **Health & Safety Assurance – Public Safety Data**<br>This review assessed:<br>• The multiple and varying data sources and controls around the integrity of this information,<br>• The appropriateness of systems used to capture and record the required information,<br>• The security of the information stored, and<br>• The adequacy of controls around the summarisation and reporting of public safety information to the executive, Board and Regulators. | Whilst no non-compliances were identified, improvement opportunities were recommended, including improving the framework around public safety data and system interfaces. | There were no non-compliances that required actioning. Management are in the process of implementing their action plan to improve the framework and system interfaces. |
| **Drug & Alcohol Testing Management**<br>This review assessed, drug and alcohol testing processes, with a focus on compliance to key requirements of Be Safe Hazard Guideline 03 – Drugs, Alcohol & Smoking, specifically:<br>• Compliance of 3rd party testers with the testing processes outlined in the guideline,<br>• The robustness of the testing regime,<br>• Management of those returning non-negative results, those who have self-declared, those who refused testing or people not available for testing,<br>• Records management,<br>• Management reporting, and<br>• Accreditation processes. | No non-compliances were identified; however improvement opportunities were recommended | There were no non-compliances that required actioning. |
| **Operational Substation Architecture & Security**<br>This review assessed the security and resiliency of the substation OT architecture and implementation, examined the design and effectiveness of controls over the abovementioned risks, and validated that:<br>• Blueprints and target architectures were designed to promote resiliency, standardisation and currency of substation OT systems and networks,<br>• Substation communication networks and endpoints are configured as designed and management roles and responsibilities are defined, and | Whilst no non-compliances were identified; improvements in supporting processes, systems and documentation were identified, along with other improvement opportunities. | There were no non-compliances that required actioning. Management are in the process of implementing their action plan to improve the supporting processes, systems and documentation. |

| Audit scope | Identified non-compliances | Actions[b] |
|---|---|---|
| • Internal assurance practices have been implemented by management to periodically validate that substation OT controls are effective and consistently applied. | | |
| **GIS & Life Support (LS) Integrity Review**<br>This review involved an assessment of:<br>• Follow up on the status of recommendations made by the NECF Planned Interruption Notification Process Improvement review,<br>• The relevant incident and breach records maintained internally and subsequent actions taken,<br>• The end-to-end LS record management processes and related GIS systems and processes,<br>• Step through of selected recorded LS incidents examining GIS processes and controls to identify risks, controls, failure points and root causes,<br>• The design of corrective actions put in place in relation to the NECF enforceable undertaking, compliance commitment and other internal risk reviews / investigations (including ICAM reviews),<br>• The suitability and effectiveness of compliance processes,<br>• The conduct of limited sample testing to validate the effectiveness of key controls in place, and<br>• The management of data in accordance with regulatory requirements. | It was identified that:<br>• Not all retailers sent reconciliations of Life Support customers data, resulting in incomplete reconciliations and data not being sent to the regulator,<br>• Improvements in the field audit process of life support customers is required,<br>• Improvements in the life support customer registration and deregistration processes, along with improved formal documentation of those processes, and<br>• Improvements in the timeliness of some employee mandatory training are required.<br><br>Other improvement opportunities were also identified. | Management are:<br>• Formalising a procedure for escalation of non-receipt of data from retailers; and will formalise internal reporting of anomalies and external reporting to the regulator,<br>• Reviewing the field auditing process to improve quality and provide guidance to field auditors,<br>• Reviewing all Life Support registration and deregistration processes with the aim to improve automation. For the identified processes without formal documentation, generating and finalising the required information, and<br>• Reviewing the accuracy of the dates included in the training reporting, improving monitoring processes, completing training where required and updating associated employee authorities. |

**a** AS 5577 is the Australian Standard Electricity network safety management systems, 2013, published by Standards Australia
**b** Improvement opportunities were agreed at audit completion with a priority and completion date assigned. These are tracked to completion in Ausgrid's assurance system.

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

| Audit scope | Identified non-compliances | Actions |
|---|---|---|
| **ENSMS Bushfire management audit direction (21 August 2020):**<br>*1. Corrective and preventive action in response to 2019-20 NSW bush fires*<br>The audit evaluated the extent to which Ausgrid has reviewed its Electricity Network Safety Management System (ENSMS) after the 2019-20 NSW bush fires, in accordance with clause 4.5 of AS 5577–2013 – Electricity Network Safety Management Systems (AS 5577) | ***NCR-1, December 2020.***<br>The auditor found that despite Ausgrid implementing improvements in bushfire management, these had not been reflected in the key strategy documents. | As recommended by the Auditor for ***NCR-1****, December 2020* Ausgrid will amend its documentation to reflect changes made following the 2019/20 NSW bushfires as relevant to Ausgrid's network. |
| *2. Outstanding bush fire risk management non-compliances*<br>The audit included a review of Ausgrid's progress against the rectification plan and timeframes provided to IPART on 16 April 2020. The auditor will assess whether Ausgrid has amended and implemented its ENSMS to address the non-compliances identified in the Bushfire Risk Management Independent Audit Report, dated 19 March 2020. | It was the auditor's opinion that risk assessment did not fully address the original intent of the non-compliance (*NCR-2, March 2020*) i.e. how does their treatment of private poles and the management of private pole owners result in an equivalent safety outcome to that of network poles. | Ausgrid will review its risk assessment and amend it to demonstrate further robustness in methodology. Ausgrid will also make the necessary amendments to achieve a consistent approach to all the actions of these previous findings. |
| *3. Additional matters*<br>Whether the information relating to bush fire risk controls reported in Ausgrid's annual safety management system performance report, due for submission to IPART by 31 October 2020, is complete and accurate, and meets the requirements set out in IPART's Electricity networks reporting manual - Safety management system performance measurement, August 2018. | ***NCR-2, December 2020.*** The auditor found that there was insufficient information within the report, and contained within the Basis of Preparation document, to enable the reader to understand the wider context of the reported information throughout the report. | As recommended by the Auditor for ***NCR-2****, December 2020* Ausgrid will review and amend the current Basis of Preparation document with consideration of the content in Appendix B Contextual information related to the Annual Safety Management System performance report. |
| **ENSMS safety of members of the public and persons working on or near the network audit direction (6 December 2019):**<br>*1. Public Safety Risk Management Controls* | ***NC(NM)-2020-01.*** The auditor found that actions relating to four of the ten previous non-compliances remained open. | As recommended by the auditor for ***NC(NM)-2020-01*** Ausgrid completed all previous non-compliance actions that were open.<br>To ensure focus on action items, Ausgrid is including bimonthly reporting on status of ENSMS audit actions within the Executive Leadership Team (ELT) paper. |

| Audit scope | Identified non-compliances | Actions |
|---|---|---|
| Implementation, measurement and evaluation, management review and change management of an electricity network safety management system.<br>*2. Worker Safety Risk Management Controls*<br>Planning and preparation, implementation, measurement and evaluation, management review and change management of an electricity network safety management system.<br>*3. Rectification of Non-Compliances from Previous Audits*<br>The auditor is to assess the progress made by Ausgrid in rectifying the non-compliances identified in the ENSMS Audit Report of 16 March 2018, the ENSMS Asset Management Audit Report of 29 March 2019, and any non-compliances that may be identified in the live work audit report, which is due for submission to IPART by 10 April 2020.<br>*4. Auditor to consider*<br>The auditor must consider all aspects of Ausgrid's public and worker safety risk management controls that are being used by Ausgrid to meet the primary objective of its safety management system and ensure the safety of its network. | ***NC(NM)-2020-02.*** The auditor noted that Ausgrid had not robustly demonstrated compliance with clause 4.4.4. of AS5577 - Responsibilities, accountabilities and authorities. Whilst there was evidence that these activities are being carried out, responsibilities and authorities did not appear to have been identified and documented in relation to the ENSMS. | As recommended by the auditor for ***NC(NM)-2020-02*** Ausgrid has developed a RACI confirming ownership and delivery requirements to fulfil ENSMS obligations. |
| | ***NC(NM)-2020-03.*** The auditor noted that Ausgrid's SFAIRP assessments do not appear to robustly consider known issues and associated improvement initiatives. It was not apparent how the issues registers and associated actions link into the SFAIRP considerations. | As recommended by the auditor for ***NC(NM)-2020-03*** Ausgrid is developing and implement processes utilising guides, templates and tools for an organisational approach in providing guidance on assessing and achieving SFAIRP (refer also to Live Work audit action for ***NC(NM)-2020-02***). |
| | ***NC(NM)-2020-04.*** The auditor found Ausgrid's Public Safety FSA to have risk analysis alignment issues in the risk analysis processes and it was noted that the risk evaluation process had not matured since the original assessment complete in 2017. | As recommended by the auditor for ***NC(NM)-2020-04*** Ausgrid will review and update its Public Safety documentation and supporting risk analysis is in alignment with the additional requirements defined within the response to the following non-compliance ***NC(NM)-2020-05***. |
| | ***NC(NM)-2020-05.*** The auditor found scope to improve the relevance of the Public Electrical Safety Awareness Plan (PESAP). Whilst the identified risks remain, it was last updated in September 2016. It identified high level messages and some activities, however, it is not supported by an action plan for implementation across its scope. | As recommended by the auditor for ***NC(NM)-2020-05*** Ausgrid will update its public safety communications plan to reflect current practices and develop metrics to monitor and report on its effectiveness. |
| | ***NC(NM)-2020-06.*** The auditor found Ausgrid has strong processes in place to investigate incidents in relation to its assets and operations, however, there did not appear to be formal mechanisms for identifying and investigating external incidents and risks. A draft procedure existed that considered external incidents, which required further development. | As recommended by the auditor for ***NC(NM)-2020-06*** Ausgrid has included reference to the review of industry wide safety alerts or communications in its HS011-P0100 Incident Management procedure.<br>The Electrical Safety Rules Committee charter and agenda have been updated to include a review of industry safety alerts. |
| | ***NC(NM)-2020-07.*** The auditor found Ausgrid had demonstrated the implementation of corrective and preventative control options identified in its investigation | As recommended by the auditor for ***NC(NM)-2020-07*** Ausgrid undertake SFAIRP evaluation of risks and control |

| Audit scope | Identified non-compliances | Actions |
|---|---|---|
| | following the fatal incident to the member of public in 2019. It was not, however, adequately demonstrated to the auditor that the issue is being managed to SFAIRP.<br><br>***NC(NM)-2020-08.*** The auditor noted that whilst Ausgrid had developed an ENSMS Stakeholder Engagement Framework and Plan, it has not been able to effectively implement external stakeholder engagement. | measures that were identified following the fatal incident to the member of public in 2019.<br><br>As recommended by the auditor for ***NC(NM)-2020-08***, Ausgrid will review and update its Stakeholder Engagement Framework, Stakeholder Priority Matrix and prepare a Stakeholder Engagement Plan to inform and involve on policies and plans aligned/relevant to each stakeholder. Work would be executed and align across the business with broader stakeholder engagement. A record of engagement and actions taken to respond to feedback and include in the ENSMS review will be maintained and engagement performance reported to management. |
| **ENSMS safety of persons working on or near the network audit direction (28 February 2019):**<br>The auditor is to assess whether Ausgrid's planning processes for live work on or near the network, including its high voltage and low voltage work task lists, have been developed in accordance with AS 5577 and whether the controls and treatments are properly identified, evaluated and implemented in accordance with AS 5577. The audit is to include a targeted sample of different live work tasks that are being performed, to assess the effectiveness of the implementation of Ausgrid's risk management processes.<br><br>The auditor is also to examine and report on how Ausgrid has addressed the live work non-compliances identified in the audit report dated 16 March 2018. | ***NC(NM)-2020-01*** The auditor found Ausgrid's live works SFAIRP evaluation was developed based on likelihood of consequence outcomes for Ausgrid workers. They noted that Accredited Service Providers (ASPs) also perform live work on or near Ausgrid's network. The auditor's opinion that SFAIRP has not been achieved for ASPs. However, not all controls forming the SFAIRP evaluation for Ausgrid workers can be applied to ASPs.<br><br>***NC(NM)-2020-02*** The auditor found significant room to improve the organisational approach to evaluating risk SFAIRP. With regards to live works specifically, it wasn't evident that the outcomes and recommendations of the live work review project had been incorporated into the broader systems of work. This also includes application of the processes and methodologies for evaluating the risk associated with live work are minimised SFAIRP. | As recommended by the auditor for ***NC(NM)-2020-01***, Ausgrid will prepare separate risk registers detailing control measures relevant to ASPs for gaining access to Ausgrid's network and undertake a SFAIRP evaluation for ASP's gaining access to work on its network. This will not include an evaluation of ASP safety management systems or health and safety performance data other than data readily available within Ausgrid's management systems.<br><br>As part of Ausgrid's continuous improvement a review of the Worker Safety Formal Safety Assessment (FSA) and Live Work project will be conducted to align with the processes and procedures developed in the other related actions.<br><br>In response to the audit recommendation ***NC(NM)-2020-02*** Ausgrid will develop and implement processes utilising guides, templates and tools for an organisational approach in providing guidance on assessing and achieving SFAIRP (refer also to the safety of members of the public and persons working on or near the network audit action for ***NC(NM)-2020-03***).<br><br>The documents developed will be published within the Health and Safety Management System hazard identification and risk management. |

| Audit scope | Identified non-compliances | Actions |
|---|---|---|
| | | The Risk Management Framework landing page was updated to include links to guidance and reference materials within the Health and Safety Management System. |
| **ISO14001 Environmental Management System**<br><br>The FY21 external ISO14001:2015 EMS audit was undertaken by BSI Group in August 2020. Due to COVID-19 restrictions, the audit was undertaken remotely using Information and Communication Technologies including MS teams and drones.<br><br>The objective of the assessment was to conduct a surveillance assessment. The scope of the assessment is the documented management system with relation to the requirements of ISO14001:2015 and the defined assessment plan provided in terms of locations and areas of the system and organisation to be assessed. | No non-compliances were identified; however improvement opportunities were recommended. | There were no non-compliances that required actioning. |
| **ISO55001 Asset Management System**<br><br>To confirm the asset management system (AMS) complies with the applicable elements of the Standard; to confirm the organisation complies with its own policies and procedures; to confirm the management system is suitable for the organisation; to confirm that the management system is suitable and effective, and enables the client to achieve its own objectives. | No non-compliances were identified; however improvement opportunities were recommended. | There were no non-compliances that required actioning. |

**a** AS 5577 is the Australian Standard Electricity network safety management systems, 2013, published by Standards Australia.

# B. Bushfire Preparedness

This section is Ausgrid's response to the reporting requirements in the Reporting Manual Appendix B - Bushfire preparedness (Ausgrid, Endeavour Energy and Essential Energy and Sydney Trains only). This section summarises Ausgrid's preparations prior to the commencement of the statutory bush fire danger period (BFDP), nominally 1 October 2021 or earlier where the NSW Rural Fire Service (NSW RFS) Commissioner declares a variation based on the recommendation of a local Bush Fire Management Committees (BFMC).

## B.1 Bushfire risk profile across network operator's supply area

Seasonal fire conditions are a function of the volume of fuel (vegetation), the state of that fuel and seasonal weather conditions. Since 2020 has seen a shift away from these drier conditions towards average rainfall patterns for large parts of the country. The overall effect for NSW was a wetter than average year leading into 2021. This has seen good soil moisture across most of the state. In the Ausgrid area of operation there has been significant increase of water basin storage.

Whilst the current bushfire outlook is forecast as normal for Ausgrid's supply area (Figure 1), there remains a need to monitor for escalations in fire danger associated with windy weather events that can often present during this period. These windy conditions can be a risk regardless of the temperature where grass has been cured by frosts posing an increase in grass fire risk. It has been noted that parts of the Hunter's grassland areas have experienced increased growth rates and with frost affecting some parts of the Hunter this could lead to an increase of fuel in these areas.

The Weatherzone report commissioned by Ausgrid also notes the potential of normal to below severe storm activity associated with the predicted La Niña weather patterns. The report also notes that while there is an increased chance of heatwave conditions, it is less extreme than previous years. The report notes cooler maximum temperatures with higher-than-normal minimum temperatures. The report does highlight the chance of increased flooding due to higher soil moisture content, with the national outlook indicating wet weather from October through to December. The Weatherzone report also highlights that there is an elevated level of grass and crop growth which increases grass fire risk.

**Figure 1: RFS NSW Seasonal Bush Fire Outlook 2021 - 2022**

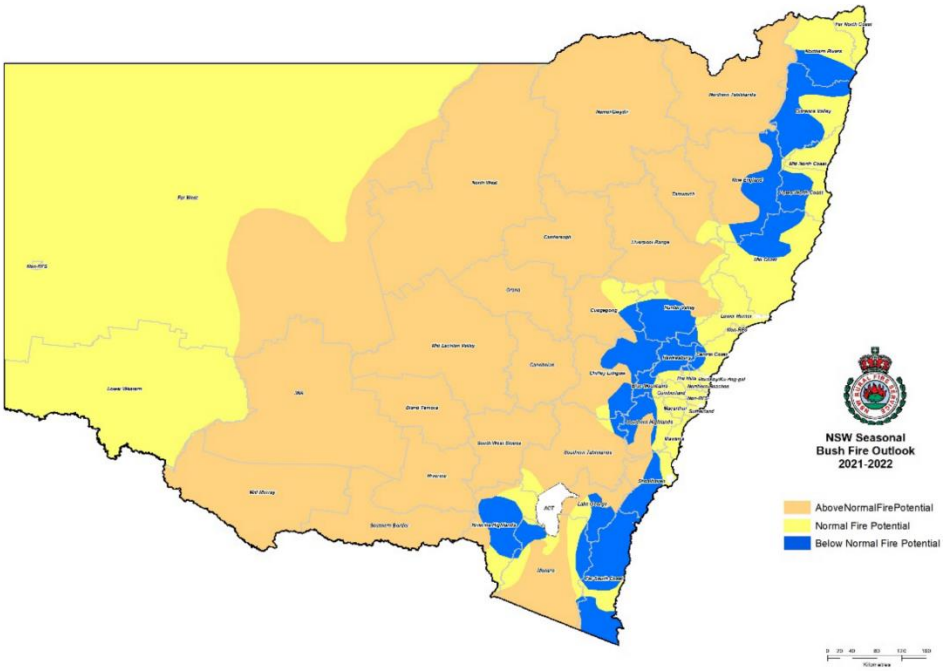
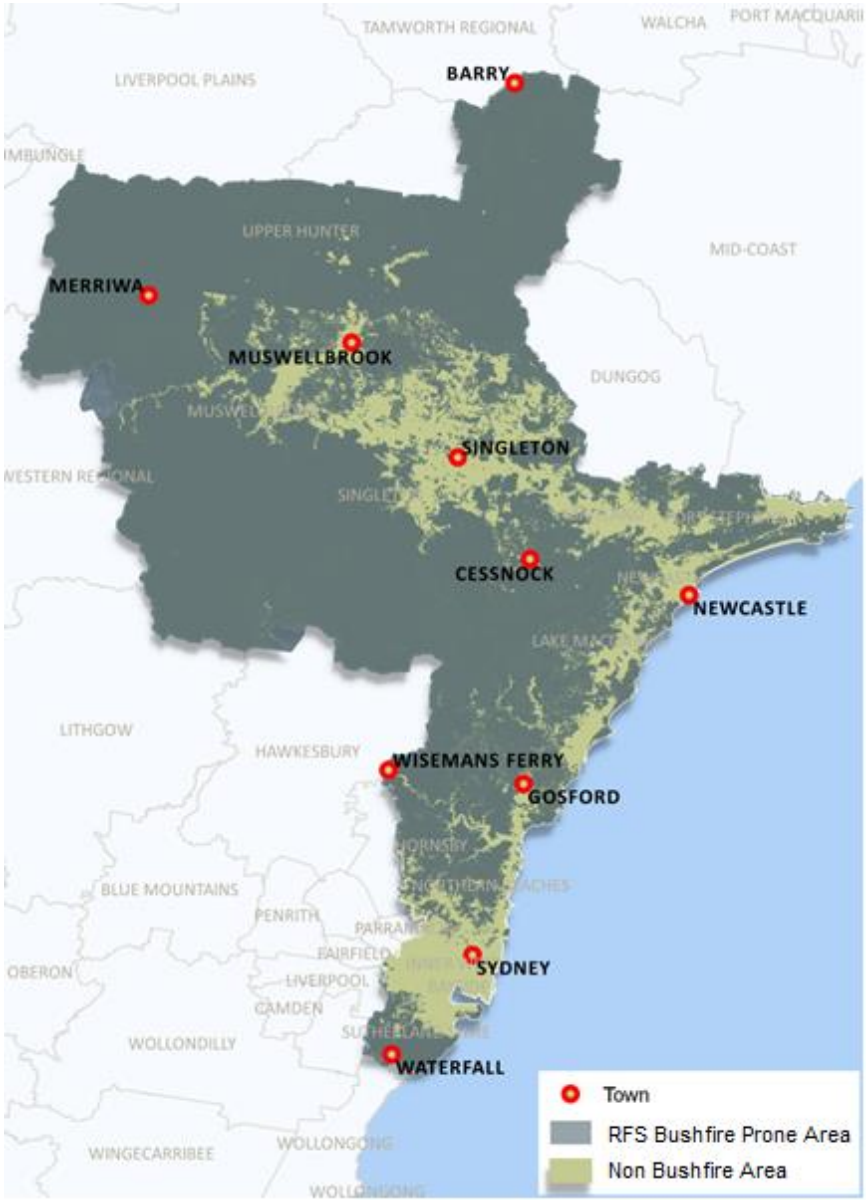


**Figure 2: Ausgrid's network and related bushfire prone land area.**




Note: Ausgrid does not differentiate bushfire categories or buffer areas for inspection and reporting purposes.

## 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 (reoccurring) basis due to local climatic conditions and remains in force for the period specified unless it is revoked.

This year no temporarily altered BFDP commencement dates affecting Local Government Areas (LGA's) in Ausgrid's area were declared by the NSW RFS Commissioner due to local climatic conditions. Three LGA's were confirmed as having permanent variations in place commencing 1 September. The local government areas (LGA) that Ausgrid operates its network in, and the applicable BFDP are detailed in Table 1 below.

**Table 1: BFDP commencement for areas in Ausgrid's network.**

| NSW LGA reference | Permanent or Temporary Date | Commencement of BFDP |
|---|---|---|
| **Bayside** | **Permanent** | 1 October 2021 |
| **Burwood** | **Permanent** | 1 October 2021 |
| **Canada Bay** | **Permanent** | 1 October 2021 |
| **Canterbury-Bankstown** | **Permanent** | 1 October 2021 |
| **Central Coast** | **Permanent** | 1 October 2021 |
| **Cessnock** | **Permanent** | 1 October 2021 |
| **Cumberland** | **Permanent** | 1 October 2021 |
| **Dungog** | **Permanent** | 1 October 2021 |
| **Georges River** | **Permanent** | 1 October 2021 |
| **Hawkesbury** | **Permanent** | 1 October 2021 |
| **Hornsby** | **Permanent** | 1 October 2021 |
| **Hunter's Hill** | **Permanent** | 1 October 2021 |
| **Inner West** | **Permanent** | 1 October 2021 |
| **Ku-ring-gai** | **Permanent** | 1 October 2021 |
| **Lake Macquarie** | **Permanent** | 1 October 2021 |
| **Lane Cove** | **Permanent** | 1 October 2021 |
| **Maitland** | **Permanent** | 1 October 2021 |
| **Mosman** | **Permanent** | 1 October 2021 |
| **Muswellbrook** | **Permanent** | 1 September 2021 |
| **Newcastle** | **Permanent** | 1 October 2021 |
| **North Sydney** | **Permanent** | 1 October 2021 |
| **Northern Beaches** | **Permanent** | 1 October 2021 |
| **Parramatta** | **Permanent** | 1 October 2021 |
| **Port Stephens** | **Permanent** | 1 October 2021 |
| **Randwick** | **Permanent** | 1 October 2021 |
| **Ryde** | **Permanent** | 1 October 2021 |
| **Singleton** | **Permanent** | 1 September 2021 |
| **Strathfield** | **Permanent** | 1 October 2021 |
| **Sutherland** | **Permanent** | 1 October 2021 |
| **Sydney** | **Permanent** | 1 October 2021 |
| **Upper Hunter** | **Permanent** | 1 September 2021 |
| **Waverley** | **Permanent** | 1 October 2021 |
| **Willoughby** | **Permanent** | 1 October 2021 |
| **Woollahra** | **Permanent** | 1 October 2021 |

## 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 2021 to August 2021. Defect notices were issued to property owners where any defect was identified. Throughout the other months of the year Ausgrid continues to complete 5 yearly private pole inspections as per the maintenance cycle for private poles 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 preventing 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 bushfire danger period.

## Table B.1 Aerial consumer mains on bush fire prone private land (HV and LV)

| 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[a] checked by the network operator** | 16,269 | 16,269 | 22,122 | 22,122 | 34,273 | 34,273 | 33,438 | 33,438 | 44,296 | 44,296 |
| **Number of directions for bushfire risk mitigation issued to LV customers by the network operator** | n/a | 558 | n/a | 1,366 | n/a | 3,502 | n/a | 2,931 | n/a | 1,994 |
| **Number of directions for bushfire risk mitigation issued to LV customers by the network operator that are outstanding by more than 60 days** | n/a | 0 | n/a | 0 | n/a | 0 | n/a | 0 | n/a | 0 |
| **HV customers (metering point count) advised[d] to undertake preseason bushfire checks in accordance with ISSC31[b]** | 262 | 262 | 96 | 96 | 77 | 77 | 69 | 69 | n/a | n/a |
| **HV customers (metering point count) providing statements of compliance in accordance with ISSC31** | 92 | 92 | 96 | 96 | 77 | 77 | 69 | 69 | n/a | n/a |
| **HV customers (metering point count) requiring additional risk mitigation prior to start of the reporting year[c]** | 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** Private lines means aerial consumers mains on bushfire prone private land. Network operators may report in terms of numbers of LV installations or the numbers or percentage of areas targeted and checked. May change annually due to re-classification of bushfire prone land, and customer network alterations.
**b** Industry Safety Steering Committee Guideline for the Management of Private Overhead Lines (ISSC31).
**c** Includes the number of high voltage customers who did not provide a statement of compliance or had identified defects requiring mitigation, where the network operator is ensuring appropriate risk mitigation (e.g. inspection by the network operator).
**d** Ausgrid now requires all HV customers on bushfire prone land to confirm their network construction type and requirement to undertake pre-season bushfire checks in accordance with ISSC 31.

## Table B.2 Pre-Summer bushfire inspections

| Pre-summer bushfire inspections | Population (spans / poles) | Target | Achieved | Outstanding | Comments |
|---|---|---|---|---|---|
| Aerial Vegetation | n/a / 124,483[a] | 124,483 | 124,483 | 0 | Inspection targets are identified to the nearest pole supporting a span that is partially or completely in a bushfire area. |
| Aerial Hardware | n/a / 124,483[b] | 49,377 | 49,377 | 0 | All inspections completed in-line with Ausgrid's inspection program. |
| Service Mains[c] | 136,048 / n/a | 4,223[d] | 4,223 | 0 | All inspections completed in-line with Ausgrid's inspection program. |
| Pole Inspections | n/a / 124,483[a] | n/a | n/a | n/a | Ausgrid does not specifically identify poles for pre-summer bushfire inspections. Refer to Table A.12 for Pole Inspections. |
| **Total** | | **178,083** | **178,083** | **0** | |

**a** Total number of network poles in or support a span in bushfire prone land
**b** Total number of network poles in or support a span in bushfire prone land. Ausgrid inspects approximately 1/3 of the network every year. Private poles are covered in Table B.1 Private LV lines
**c** Total number of overhead supplied service mains is provided as the population. Ausgrid targets to inspect uninsulated service mains separately as part of this program (insulated service mains population is targeted when its associated pole is inspected).
**d** Ausgrid's annual inspection approach targets only service mains that are not XLPE.

## Table B.3 Vegetation tasks

| Bushfire risk category | Status | Encroachment Classification A1 (75-100%)[a] | Encroachment Classification A2 (50-75%)[a] | Encroachment Classification A3 (25-50%)[a] | Encroachment Classification A4 (0-25%)[a] | Hazard trees[c] |
|---|---|---|---|---|---|---|
| Bushfire prone land | Identified[b,d] | 4,203 | 14,740 | 40,145 | 132,234 | 85 |
| | Completed[b] | 4,203 | 14,740 | 125 | 461 | 75 |
| | Open[b] | 0 | 0 | 40,020[e] | 131,773[e] | 65 |
| | Outstanding[b] | 0 | 0 | 0 | 0 | 0 |

**a** Vegetation encroachments into the minimum vegetation clearance as specified under *ISSC3 Guide for the Management of Vegetation in the Vicinity of Electricity Assets*.
**b** In addition to the tasks above, Ausgrid also carry out vegetation tasks without Encroachment Classifications e.g. removal of tree branch from service wire. The quantities are: Identified 3,030 Completed 1,469 Open 7 Outstanding 0. 'Open' and 'Outstanding' tasks are those tasks categorised as such at the end of the reporting period.
**c** Hazard trees are fall-in vegetation hazards as defined in *ISSC3 Guide for the Management of Vegetation in the Vicinity of Electricity Assets*. Due to the method Ausgrid captures this information separation of these values into Bushfire prone land vs non-bushfire prone land is impractical so all have been reported here. Ausgrid is continuing to review the capture and collection of this data with a view to improve data quality.
**d** The vegetation tasks are identified by routine and pre-summer inspections. The majority of tasks were identified with aerial LiDAR and where this is not possible identified via routine ground based visual inspections.
**e** All open A3 and A4 encroachments will be inspected within the first 3 months of the bushfire danger period. In accordance with NS179 if these defects have become or are likely to become A1 or A2 during the bushfire danger period, the defects shall be rectified in accordance with the revised defect Class.

## Table B.4 Asset tasks[a]

| Bushfire risk category | Status | Category 1[b] | Category 2[b] | Category 3[b] | Category 4[b] | Totals |
|---|---|---|---|---|---|---|
| Bushfire prone land | Identified | 2,049 | 1,060 | 437 | 2 | 3,548 |
| | Completed[c] | 2,049 | 993 | 329 | 1 | 3,372 |
| | Open | 0 | 67 | 108 | 1 | 176 |
| | Outstanding | 0 | 0 | 0 | 0 | 0 |

**a** The defects generated in this table are generated from routine and pre-summer inspections and include the population of defects identified within the reporting period. Defects identified prior to the reporting period include: Completed (CAT1 - 3, CAT2 – 61, CAT3 – 916, CAT 4 – 161); Open (CAT2 – 4, CAT3 – 62, CAT4 – 37). Ausgrid is continuing to review the capture and collection of this data with a view to improve data quality.

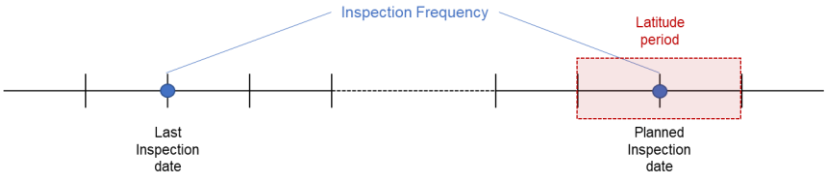
**b** Network operator to define task priority (Categories 1-4).

- Category 1 Defects: Defects that pose a direct and immediate risk to the safety of the public/staff and requiring immediate rectification within 48 hours
- Category 2 Defects: Defects that pose a risk to the safety of the public / staff and require rectification within 48 hours to 3 months
- Category 3 Defects: Defects that pose a predictable future risk to the safety of the public / staff and require rectification within 3-12 months
- Category 4 Defects: Defects that pose a predictable future risk to the safety of the public / staff and require reinspection before the next maintenance cycle

**c** Due to the categorisation of the defect and its associated rectification time, those identified in previous periods may be completed during this reporting period. Defects may have their priority reprioritised based on further information becoming available.

# Glossary

| | |
|---|---|
| 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. |
| AMS | Asset Management System |
| 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 | Bush Fire Danger Period |
| Bushfire prone land / Non-bushfire prone land | Area that has been identified by local council which can support a bushfire or is subject to bushfire attack. |
| CALD | Culturally and Linguistically Diverse |
| DBYD | Dial Before You Dig is an online request for plans for underground infrastructure 24/7 |
| EMS | Environmental Management System |
| ESW | Electrical Safety Week |
| 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.<br>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.<br>Note: operation of protection equipment (e.g. fuse) within its design characteristics is not a functional failure. |
| Hazardous tree / Fall-in vegetation hazard | Visually defective vegetation (which is vegetation that is dead, dying and 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. |
| HSMS | Health & Safety Management System |
| HV | High Voltage, 1kV AC nominal and above |
| Incident | Defined in accordance with IPART's Electricity networks reporting manual - Incident reporting, available on the IPART website. |

| | |
|---|---|
| Latitude | Each maintenance activity has an allocated latitude to allow for effective maintenance planning and control. The latitude sets the maximum and minimum time span between maintenance activities.<br>  <br> |
| LV | Low Voltage, below 1kV AC nominal |
| Major incident | Defined in accordance with IPART's Electricity networks reporting manual - Incident reporting, available on the IPART website |
| 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 web site. MED are to be excluded from the network overall reliability standards and individual feeder standards.<br>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. |
| NECF | National Energy Customer Framework |
| 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. |
| NORD | Ausgrid database used to record and report reliability data. |
| Open (with respect to defects / tasks) | A defect / task that has not been rectified by the Network Operator 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. |
| OH | Overhead construction |
| Outstanding (with respect to defects / tasks) | A defect / task that has not been rectified by the Network Operator 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. |
| PAWS | Public And Worker Safety |
| 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. |
| 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 and includes the construction, maintenance, adjustment or dismantling of mobile plant and scaffolding. |
| RACI | A responsibility assignment matrix: Responsible, Accountable, Consulted, Informed. |
| Reactive Plant | Includes reactors and capacitors |

| | |
|---|---|
| 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). |
| 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). |
| Service Line OH or UG | Overhead service and underground service as defined in the NSW Service and Installation Rules. |
| SFAIRP | So Far As Is Reasonably Practicable |
| 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 |
| Spreader | A conductor rod used on bare low voltage conductor to prevent individual conductors from clashing. |
| Tunnel | A tunnel owned and maintained by Ausgrid to provide an underground feeder path. |
| 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. |
| UG | Underground construction |
| VMS | Variable Message Sign |
| XLPE | Cross-linked polyethylene insulated cable |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