



# Annual ENSMS Performance Report

30 October 2020



# Contents

<b>A.</b>	<b>Annual Performance Reporting - ENSMS</b>	<b>2</b>
<b>A.1</b>	<b>Tier 1 – Major Incidents</b>	<b>2</b>
	Table A.1 Major Incidents	2
<b>A.2</b>	<b>Tier 2 - Incidents</b>	<b>3</b>
	Table A.2 Incidents	3
<b>A.3</b>	<b>Tier 3 – Control Failure Near Miss</b>	<b>4</b>
	Table A.3 Network Asset Failures	4
	Table A.4 Vegetation Contact with Conductors	6
	Table A.5 Unintended contact, unauthorised access and electric shocks	6
	Table A.6 Reliability and Quality of Supply	8
	Table A.7 Reliability and Quality of Supply - Critical Infrastructure Incidents	8
	Table A.8 Network-Initiated Property Damage Events	10
<b>A.4</b>	<b>Tier 4 – Control Implementation</b>	<b>10</b>
	Table A.9 Amendments and Improvements to Formal Safety Assessments (FSA) or Associated Risk Treatments <sup>a</sup>	10
	Table A.10 Design, construction and commissioning	12
	Table A.11 Inspections (assets)	13
	Table A.12 Inspections (vegetation) Aerial/Ground based	14
	Table A.13 Public electrical safety plans and activities <sup>a</sup>	14
	Table A.14 Internal audits performed on any aspect of the ENSMS (as per AS 5577 <sup>a</sup> clause 4.5.4)	21
	Table A.15 External audits performed on any aspect of the ENSMS (as per AS 5577 <sup>a</sup> clause 4.5.4)	23
<b>B.</b>	<b>Bushfire Preparedness</b>	<b>24</b>
<b>B.1</b>	<b>Bushfire risk profile across network operator’s supply area</b>	<b>24</b>
<b>B.2</b>	<b>Permanent / temporary declaration of areas by RFS and network operator’s actions</b>	<b>25</b>
<b>B.3</b>	<b>Aerial consumer mains on bushfire prone private land (HV and LV)</b>	<b>27</b>
	Table B.1 Aerial consumer mains on bush fire prone private land (HV and LV)	28
	Table B.2 Pre-Summer bushfire inspections	29
	Table B.3 Vegetation tasks	30
	Table B.4 Asset tasks	31
	<b>Glossary</b>	<b>32</b>

## 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 statutory 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 2019 to 30 June 2020 (**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.

### 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).<sup>1</sup>

**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 <sup>a</sup>	Nil in the reporting period
Safety risks arising from the loss of electricity supply <sup>b</sup>		<ul style="list-style-type: none"> <li>08/09/2019 - Interruption to significant community infrastructure customer for &gt; 2 hours (<i>N.B: this incident has been previously reported in last year's ENSMS report Oct '18 to Sep '19</i>)</li> <li>12/11/2019 - Supply interruption causes the loss of network supply, for greater than 2 hours, to significant community infrastructure</li> <li>11/01/2020 - Supply interruption causes the loss of network supply, for greater than 2 hours, to significant community infrastructure</li> <li>18/02/2020 - The network operator has classified it as a significant outage as part of Ausgrid's incident management system due to adverse impact or disruption to the community.</li> <li>01/04/2020 - Supply interruption causes the loss of network supply, for greater than 2 hours, to significant community infrastructure</li> <li>22/05/2020 - Supply interruption causes the loss of network supply, for greater than 2 hours, to significant community infrastructure</li> </ul>

<sup>1</sup> 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 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.

## 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
<b>Safety of members of the public</b>	Nil in the reporting period
<b>Safety of persons working on network</b>	<ul style="list-style-type: none"> <li>01/02/2020 - Contract worker was operating a petrol-powered quick cut saw to cut conduit when the saw kicked-back contacting the worker. Network contractor required surgery.</li> </ul>
<b>Protection of third party property</b>	<ul style="list-style-type: none"> <li>26/10/2019 - A bushfire with a burnt area &gt;10ha and where the RFS NSW has noted the suspected cause of the fire may have been from the electricity network</li> <li>08/11/2019 - Bushfire with a burnt area &gt;10ha and where the RFS has noted a powerline could be a possible causal or contributory factor</li> </ul>
<b>Safety risks arising from loss of electricity supply<sup>a</sup></b>	<ul style="list-style-type: none"> <li>26/11/2019 - Widespread Interruptions: An outage that has contributed to the declaration of, or resulted from, a Major Event Day (MED)</li> <li>20/01/2020 - Widespread Interruptions: An outage that has contributed to the declaration of, or resulted from, a Major Event Day (MED)</li> <li>23/01/2020 - Widespread Interruptions: An outage that has contributed to the declaration of, or resulted from, a Major Event Day (MED)</li> <li>08/02/2020 - Widespread Interruptions: An outage that has contributed to the declaration of, or resulted from, a Major Event Day (MED)</li> <li>09/02/2020 - Widespread Interruptions: An outage that has contributed to the declaration of, or resulted from, a Major Event Day (MED)</li> <li>10/02/2020 - Widespread Interruptions: An outage that has contributed to the declaration of, or resulted from, a Major Event Day (MED)</li> <li>18/02/2020 - Widespread Interruptions: An outage that has contributed to the declaration of, or resulted from, a Major Event Day (MED)</li> <li>19/02/2020 - Widespread Interruptions: An outage that has contributed to a high confidence of, or resulted from, a Major Event Day (MED)</li> </ul>

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	Annual functional failures (for reporting period)					
			Unassisted <sup>a</sup>			Assisted <sup>a</sup>		
			No Fire	Fire		No Fire	Fire	
				Contained	Escaped		Contained	Escaped
Towers	725	1	0	0	0	0	0	0
Poles (including street lighting columns/poles & stay poles)	512,126	520	6	0	0	747 <sup>i</sup>	9	7
Pole-top structures <sup>b</sup>	n/a <sup>h</sup>	521	402	1	5	424 <sup>i</sup>	4	4
Conductor – Transmission OH <sup>c</sup>	742 km	26	31	0	0	61 <sup>i</sup>	0	0
Conductor – Transmission UG <sup>c</sup>	215 km	6	12	0	0	0	0	0
Conductor – HV <sup>d</sup> (including sub-transmission) OH	12,073 km	408	95	0	2	295	0	7
Conductor – HV (including sub-transmission) UG	9,528 km	337	279	0	0	14	0	0
Conductor – LV <sup>d</sup> OH	18,397 km	2,215	1,160	1	3	2,008 <sup>i</sup>	0	2
Conductor – LV UG	7,879 km	581	413	3	1	21	0	0
Service line <sup>e</sup> OH	713,884	6,749	3,123	4	5	5,259 <sup>i</sup>	0	4
Service line <sup>e</sup> UG	249,107	189	209	1	1	18	0	0
Power transformers <sup>f</sup>	553	121	99	0	0	5	0	0
Distribution transformers	34,519	168	137	1	0	55	0	1

Performance Measure	Population	5-year average annual functional failures	Annual functional failures (for reporting period)					
			Unassisted <sup>a</sup>			Assisted <sup>a</sup>		
			No Fire	Fire		No Fire	Fire	
				Contained	Escaped		Contained	Escaped
Reactive plant <sup>g</sup>	321	14	11	0	0	3	0	0
Switchgear – zone / subtransmission / transmission	13,017	135	114	0	0	3	0	0
Switchgear – distribution (OH)	82,328	745	512	3	3	90	1	0
Switchgear – distribution (Ground based)	70,639	112	87	1	0	4	0	0
Protection relays or systems	78,203	332	357	0	0	1	0	0
Zone / Subtransmission / transmission SCADA system	3,213	281	451	0	0	5	0	0
Zone / Subtransmission / transmission Protection Batteries	882	58	54	0	0	1	0	0

<sup>a</sup> See Glossary for definitions of unassisted failures and assisted failures.

<sup>b</sup> Pole top structures/components are any structure that is attached to a pole to support electricity mains and apparatus.

<sup>c</sup> OH means 'overhead'; and UG means 'underground'. 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.

<sup>d</sup> HV mean 'high voltage', and LV means 'low voltage'. High voltage are voltages 1kV AC nominal and above. Low voltage are voltages below 1kV AC nominal.

<sup>e</sup> Overhead service and underground service as defined in the NSW Service and Installation Rules.

<sup>f</sup> Power Transformers are transformers where the secondary/output voltage is 5kV nominal or above.

<sup>g</sup> Reactive plants are reactors and capacitors.

<sup>h</sup> Ausgrid does not record all individual pole top structure arrangements (e.g. cross-arms and insulators) in its corporate systems.

<sup>i</sup> Ausgrid has made changes to its storm processes that resulted in more representative quantity of failures being recorded in corporate systems. In FY20 there were several storms that impacted the Ausgrid network between November-March as well as some bushfire impact resulting in higher than previous failures being recorded.

**Table A.4 Vegetation Contact with Conductors**

Performance Measure <sup>a</sup>	Event Count					Comments
	Current reporting period	Last reporting period	Two periods ago	Three periods ago	Four periods ago	
Fire starts – grow in	2	2	2	0	0	Some data cleansing has been performed between FY16-FY19 to improve compliance reporting.
Fire starts – fall-in and blow in	21	9	19	12	7	Some data cleansing has been performed between FY16-FY19 to improve compliance reporting.
Interruption <sup>b</sup> – grow in	74	28	22	31	54	The volume of interruptions due to grow-ins has increased in the current reporting period. There is no trend in causal factors at this stage to suggest a review of approach. Ausgrid will continue monitoring trends.
Interruption – fall-in and blow in	2,445	1,229	727	845	1,258	The higher volume of fall-ins and blow-ins in the current reporting period correlated to major storm event days in November, January and February.

<sup>a</sup> Vegetation hazard definitions as per the Industry Safety Steering Committee *Guide for the Management of Vegetation in the Vicinity of Electricity Assets* (ISSC3).

<sup>b</sup> 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	
<b>Electric shock<sup>a</sup> and arc flash incidents<sup>b</sup> originating from network assets<sup>c</sup> including those received in customer premises</b>						
Public	14	4	14	n/a	n/a	n/a
Public worker	10	6	0	n/a	n/a	n/a
Network employee / network contractor <sup>d</sup>	15	11	1	n/a	n/a	n/a
Accredited Service Provider	3	0	0	n/a	n/a	n/a
Livestock or domestic pet	0	0	0	n/a	n/a	n/a

Detail	Event Count					Comments
	Current reporting period	Last reporting period	Two periods ago	Three periods ago	Four periods ago	
<b>Contact with energised overhead network asset<sup>e</sup> (e.g. OH conductor contact)</b>						
Public road vehicle <sup>f</sup>	239	323	99	n/a	n/a	n/a
Plant and equipment <sup>g</sup>	30	31	0	n/a	n/a	n/a
Agricultural and other <sup>h</sup>	57	18	1	n/a	n/a	n/a
Network vehicle	1	2	0	n/a	n/a	n/a
<b>Contact with energised underground network asset<sup>e</sup> (e.g. cable strike)</b>						
Plant and equipment	78	108	33	n/a	n/a	n/a
Person with hand held tool	25	23	0	n/a	n/a	n/a
<b>Unauthorised network access (intentional)<sup>i</sup></b>						
Zone / BSP / Transmission substation / switching station	1	2	1	n/a	n/a	n/a
Distribution substation	3	6	4	n/a	n/a	n/a
Towers / poles	2	13	11	n/a	n/a	n/a
Other (e.g. communication sites)	1	10	2	n/a	n/a	n/a
<b>Safe Approach Distance (SAD)<sup>i</sup></b>						
Network employee / network contractor	0	0	0	n/a	n/a	n/a
Accredited Service Provider	0	0	0	n/a	n/a	n/a
Public	10	1	0	n/a	n/a	n/a
Public Worker	44	15	5	n/a	n/a	n/a

**a** All electric shocks are to be reported except those resulting from static discharge, defibrillators, where the system is nominally extra low voltage or involving the DC rail traction system.

**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 to be reported. Customer installation events not associated with network assets are not to be 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.



**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 <sup>a</sup>	43	36	n/a	n/a	n/a	n/a
Sustained voltage excursions outside emergency range <sup>b</sup>	12	4	n/a	n/a	n/a	n/a
Reverse polarity	1	3	0	n/a	n/a	n/a
Neutral integrity due to poor workmanship or incorrect procedure <sup>c</sup>	0	2	0	n/a	n/a	n/a
Neutral integrity due to asset defect or failure <sup>c</sup>	0	0	0	n/a	n/a	n/a

<sup>a</sup> May also be referred to as HV LV intermix or HV injection.

<sup>b</sup> As defined by network operator with reference to the measurement methodologies used in Australian Standard AS61000.3.100.

<sup>c</sup> Ausgrid is reviewing 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 <sup>a</sup> (e.g. hospital, tunnel)	Minutes of supply lost <sup>b</sup>	Cause	Consequential safety impacts associated with supply issue
COVID 19 Other community infrastructure of national, state or regional significance	293	Asset Failure - Asset condition or defect	No public safety consequence reported
COVID 19 Other community infrastructure of national, state or regional significance	1668	Externally Caused (people) - Third party	No public safety consequence reported
Events and buildings where greater than 5000 people could be affected by an outage	1598	Asset Failure - Asset condition or defect	No public safety consequence reported
Events and buildings where greater than 5000 people could be affected by an outage	2198	Externally Caused (nature) - Weather	No public safety consequence reported
Events and buildings where greater than 5000 people could be affected by an outage	354	Externally Caused (nature) - flora / fauna	No public safety consequence reported

Type of critical infrastructure <sup>a</sup> (e.g. hospital, tunnel)	Minutes of supply lost <sup>b</sup>	Cause	Consequential safety impacts associated with supply issue
Events and buildings where greater than 5000 people could be affected by an outage	96	Externally Caused (people) - Third party	No public safety consequence reported
Events and buildings where greater than 5000 people could be affected by an outage	24	Human Error - Technician Error	No public safety consequence reported
Events and buildings where greater than 5000 people could be affected by an outage	313	Self-Clear (No Cause Found)	No public safety consequence reported
Other community infrastructure of national, state or regional significance	812	Asset Failure - Asset condition or defect	No public safety consequence reported
Other community infrastructure of national, state or regional significance	1208	Externally Caused (nature) - flora / fauna	No public safety consequence reported
Other community infrastructure of national, state or regional significance	3971	Externally Caused (people) - Third party	No public safety consequence reported
Other community infrastructure of national, state or regional significance	163	Self-Clear (No Cause Found)	No public safety consequence reported
Peer group A1, A2, A3 and B hospitals	587	Asset Failure - Asset condition or defect	No public safety consequence reported
Peer group A1, A2, A3 and B hospitals	7517	Externally Caused (nature) - Weather	No public safety consequence reported
Peer group A1, A2, A3 and B hospitals	2940	Externally Caused (nature) - flora / fauna	No public safety consequence reported
Peer group A1, A2, A3 and B hospitals	623	Externally Caused (people) - Third party	No public safety consequence reported
Peer group A1, A2, A3 and B hospitals	4	Self-Clear (No Cause Found)	No public safety consequence reported
Rail and air transport systems where travel is affected	90	Asset Failure - Asset condition or defect	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.

**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	
<b>Third Party property (assets including vehicles, building, crops, livestock)</b>						
<b>Damage (e.g. Fire, Physical impact or Electrical)</b>	389	327	287	n/a	n/a	Customer claim numbers are based on claims received in the period (including both settled and denied).
<b>Network Property (including non-electrical assets e.g. vehicles, building)</b>						
<b>Damage (e.g. Fire, Physical impact or Electrical)</b>	26	19	7	n/a	n/a	Network electrical asset and non-electrical property damage events caused by workers & contractors.

**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<sup>a</sup>**

FSA	Amendments / Improvements
Public Safety	No amendments or improvements have been implemented.
Worker Safety	<ul style="list-style-type: none"> <li>Review and update to Worker Safety risk analysis to align with revision to the Corporate Risk Management Framework.</li> <li>Update to risk treatments to align with outcomes of investigations, audits, risk assessments and risk control improvement projects.</li> <li>Updates to safety incident data and trend analysis for the period.</li> </ul>
Property Protection	No amendments or improvements have been implemented.
Environmental Safety	No change to the Environment FSA since July 2019, however the FSA is due for review by December 2020. Review of the Environment FSA commenced in September 2020.
Loss of Supply Safety	No amendments or improvements have been implemented, however COVID 19 quarantine hotels have been included in Ausgrid’s critical infrastructure list. Ausgrid’s generator capability has been enhanced which now includes 200 smaller portable units available for deployment to disaster affected customers.
Bushfire	A number of the controls in Ausgrid’s FSA have been reviewed and updated, the following represent the key amendments and improvements associated with bushfire risk controls under the Bushfire FSA:

FSA	Amendments / Improvements
	<ul style="list-style-type: none"> <li>• Following extreme weather of 2019/20, Ausgrid have commissioned a social media management platform (Hootsuite) that allows Ausgrid to post across multiple social media platforms quickly and accurately</li> <li>• Ausgrid introduced an 'Eyes and Ears' initiative to promote broader staff awareness of what a bushfire hazard looks like and how to report it</li> <li>• More extensive public communication plan to engage public in bushfire preparedness</li> <li>• Enhancement in standby generator capability which includes 200 smaller portable units available for deployment to disaster affected customers</li> <li>• Ausgrid's network standard Vegetation Management (NS179) was revised and re-issued in December 2019 with improvements to clarify Ausgrid's clearance requirements in varying geographic areas and for different construction types to assist in supporting the vegetation management contract</li> <li>• Ausgrid has implemented improved hazard tree identification training for inspectors and auditors</li> <li>• Bushfire defect strategy was updated to reflect delivery targets for hardware defects in bushfire prone areas to be delivered by the due date rather than the start of the bushfire season</li> <li>• A new pre-bushfire season inspection contract, including LiDAR, imagery and defect assessment, has been executed and commenced in May 2020. The new contract includes improved data capture deliverables with more control and incentive for achieving improved delivery timeframes</li> <li>• Improvements in the processes for management of HVC ISMP bushfire preparedness, primarily better assurance in HVC documentation including requesting details on private network configuration and confirmation of current ISMP</li> <li>• Independent review commissioned of high-level bushfire preparations for 2019/20 bushfire season by an independent industry expert of Ausgrid's bushfire related strategies, plans, practices, and task completion to assess the businesses' overall level of preparedness leading into the 2019/20 summer bushfire season</li> <li>• Improvements to bushfire preparedness dashboard to assist with tracking of preparation progress</li> <li>• Updated Bushfire Management Program Execution Plan with key changes to reflect delivery targets for hardware defects in bushfire prone areas and customer communications brought forward to align with commencement of inspections.</li> </ul>

**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 <sup>a</sup>	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	1,732	938 <sup>d</sup>	n/a	n/a	n/a
Designs for which Safety in Design (SiD) reports have been audited	17	17 <sup>d</sup>	n/a	n/a	n/a
Contestable designs certified <sup>b</sup>	1,275	1,733 <sup>h</sup>	1,625 <sup>h</sup>	1,474 <sup>h</sup>	1,504 <sup>h</sup>
Contestable level 1 project safety reviews performed <sup>c</sup>	5,145	4,992	n/a	n/a	n/a
Contestable level 2 project safety reviews performed <sup>c</sup>	6,502	n/a	n/a	n/a	n/a
Non-contestable project safety reviews performed <sup>c</sup>	11,465 <sup>g</sup>	6,461 <sup>g</sup>	4,489 <sup>g</sup>	585	521
Project closeout reports completed for contestable projects	0 <sup>e</sup>	0 <sup>e</sup>	0 <sup>e</sup>	0 <sup>e</sup>	n/a <sup>e f</sup>
Project closeout reports completed for non-contestable projects	1,635	1,562 <sup>d</sup>	1,299 <sup>d</sup>	1,681 <sup>d</sup>	n/a <sup>f</sup>
Project closeout reports audited for contestable projects	0	0	0	0	0
Project closeout reports audited for non-contestable projects	0	0	0	0	0

<sup>a</sup> The unit of measure is the number of designs/projects.

<sup>b</sup> The network operator is to advise where no contestable designs have been performed.

<sup>c</sup> A safety review would include checking that work on or near the network is being performed safely.

<sup>d</sup> Reporting period for this measure was from 1 October to 30 September. Current reporting period was for financial year (1 July 2019 to 30 June 2020).

<sup>e</sup> No close outs were recorded during the reporting period due to changes in Ausgrid's involvement with contestable connections

<sup>f</sup> FC actual data only available from three reporting period ago

<sup>g</sup> Includes safety interaction data

<sup>h</sup> All data refreshed to align with financial year. Now also includes design certification of amendments.

**Table A.11 Inspections (assets)**

Performance measure <sup>a</sup>	Inspection tasks				Corrective action tasks				Comments
	Planned inspection tasks <sup>b</sup>	Achieved <sup>c</sup>	Open <sup>d</sup>	Outstanding <sup>d</sup>	Tasks identified (all categories) <sup>c</sup>	Achieved	Open	Outstanding <sup>e</sup>	
<b>Transmission Substations</b>	7,130	7,126	3,714	6	966	837	353	97	n/a
<b>Zone Substations</b>	32,572	33,459	15,955	18	3,268	3,060	797	333	n/a
<b>Distribution Substations</b>	18,868	19,269	8,756	33	3,442	2,682	1,711	713	n/a
<b>Transmission OH</b>	7,730	9,071	5,155	7	1,101	675	1,125	251	n/a
<b>Transmission UG</b>	1,074	1,167	603	0	342	407	104	17	n/a
<b>Distribution OH</b>	88,386	101,042	83,343	20	16,083	11,900	13,400	4,666	n/a
<b>Distribution UG</b>	13,641	13,646	14,859	0	1,291	618	1,128	200	n/a

<sup>a</sup> Table A.11 should not include activities reported in Table B.3 (Vegetation tasks) and Table B.4 (Asset tasks).

<sup>b</sup> Includes all 'Open' and 'Outstanding' tasks from the previous reporting period.

<sup>c</sup> 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.

<sup>d</sup> 'Open' and 'Outstanding' tasks are those tasks categorised as such at the end of the reporting period.

<sup>e</sup> Ausgrid manages all outstanding corrective tasks at weekly and monthly intervals via a combination of multi-level meetings, dashboards, reporting and analysis, work prioritisation and resourcing.

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

Bushfire risk category	Population (spans / poles)	Target	Achieved	Outstanding	Comments
<b>Aerial based<sup>a</sup></b>					
Non-bushfire prone land	n/a / 381,291	0	0	0	Ausgrid does not conduct aerial vegetation inspections in non-bushfire prone land
Bushfire prone land	n/a	n/a	n/a	n/a	Refer to Table B.2
<b>Total</b>	n/a / 381,291	n/a	n/a	n/a	n/a
<b>Ground based<sup>a</sup></b>					
Non-bush fire prone land	n/a / 381,291	76,161	81,336	34	n/a
Bushfire prone land	n/a / 130,835 <sup>b</sup>	38,191	34,230	4	Some inspections are noted as overdue based on their status at the end of the Financial Year, each of these inspections were completed prior to the bushfire season.
<b>Total</b>	n/a / 512,126	114,352	115,566	38	n/a

<sup>a</sup> Ausgrid only conduct Aerial inspections as part of the yearly Pre-Bushfire Preparation process and this is shown in table B.2

<sup>b</sup> 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<sup>a</sup>**

Network operator public safety programs / campaigns	Details
Storm Safety & Community Electrical Safety	<p><b>At risk group:</b> General Public</p> <p><b>Program Overview:</b> Storm Safety and general community electrical safety remain moderate risk areas for the network. Ausgrid continues to promote safety messaging throughout the year, with a heightened focus around storm events. In 2019, we saw a significant storm event in November, and similarly in 2020, two significant storm events occurred in February.</p> <p>Ausgrid uses a variety of channels to communicate its safety messaging encompassing our website, social media channels (Facebook &amp; Twitter), Variable Message Sign (VMS) boards, as well as paid media such as radio, TV and digital advertising.</p>

Network operator public safety programs / campaigns	Details
	<p><b>Key messages areas:</b></p> <p><u>Safety around fallen power lines</u></p> <ul style="list-style-type: none"> <li>• Stay away from fallen powerlines or any debris that may have come into contact with them. They may still be live.</li> <li>• Keep an eight-metre distance from any fallen powerlines or any items such as trees, which may have come into contact with live wires.</li> <li>• Always assume fallen powerlines are live.</li> </ul> <p><u>Be prepared for a storm by:</u></p> <ul style="list-style-type: none"> <li>• Tidying up loose items and trimming trees, but do not attempt to trim trees near powerlines.</li> <li>• Keep a torch and radio handy</li> <li>• Keeping your house weatherproof. Always replace broken roof tiles, keep gutters clean and fix leaks to ensure water cannot access electrical systems or appliances.</li> <li>• Being sure you know the location of your mains switch, or switches that turn off the electricity supply</li> </ul> <p><u>During a storm:</u></p> <ul style="list-style-type: none"> <li>• Stay away from fallen powerlines and service wires or anything touching them.</li> <li>• 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.</li> <li>• Play it safe by unplugging sensitive appliances such as computers, video recorders and televisions.</li> </ul> <p><u>After a storm:</u></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Get appliances checked by a professional before you plug them back in.</li> </ul> <p><u>DIY electricity safety / Hidden Dangers</u></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Avoid contact with underground cables.</li> <li>• When painting eaves, replacing or cleaning gutters, avoid getting close to the electrical wires that connect your home to the power poles.</li> </ul>



Network operator public safety programs / campaigns	Details
	<ul style="list-style-type: none"> <li>• When changing a blown light bulb, make sure the power is off to avoid being harmed by exposed filaments.</li> <li>• Never use more than one double adaptor in a single power point.</li> <li>• 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.</li> </ul> <p><b>Analysis:</b> Ausgrid continues to work with its media agency to review media efforts post campaigns. Key elements identified in media selection for storm safety include 1) Timeliness and agility to execute and 2) Targeting to ensure we're reaching the right audience. Organisationally, Ausgrid has also invested in a new social media monitoring platform Hootsuite. The platform facilitates improved analysis and evaluation with visibility to impressions and engagement achieved with our social media activity.</p> <p><b>Program Status:</b> Ongoing. Storm safety continues to be an ongoing risk with the public and an area of high focus within Ausgrid's communications program.</p>
Children's Safety around electricity	<p><b>At risk group:</b> Children – focusing on primary school children from Kindergarten to Year 6</p> <p><b>Program Overview:</b> Electricity Safety Week (ESW) is an annual program that delivers electrical safety messages to primary school students in Ausgrid's network area. The program aligns to the PDHPE syllabus for Kindergarten to Year 6 and shows young people how electricity works, how to use it and how to stay safe around it. Primary schools located in Ausgrid's network distribution area (Sydney, Newcastle, the Central Coast and Hunter Regions) register each year for a Free Electricity Safety Week Resource Pack which contains an activity booklet, merit certificate, posters, stickers and student prizes. Ausgrid has been running the program since 2001. The program is also now delivered in schools across NSW by Essential Energy, Endeavour Energy and in QLD by Ergon and Energex utilising the content developed by Ausgrid.</p> <p>In 2019, we refreshed the K-6 booklet and Stage 3 Electricity &amp; Safety Unit including curriculum realignment, new lessons and STEM design challenges. Ausgrid also developed electricity safety social stories to support special needs students.</p> <p>Ausgrid also offered a poster and video competition for students to demonstrate their knowledge of the key safety electrical messages.</p> <p><b>Key messages areas:</b>  <u>Electricity safety for school students</u></p> <ul style="list-style-type: none"> <li>• Play in open spaces away from electricity poles and powerlines</li> <li>• Stay away from electricity substations and power equipment</li> <li>• Never put a metal object in a toaster or power point</li> </ul>

Network operator public safety programs / campaigns	Details
	<ul style="list-style-type: none"> <li>• Keep water away from electrical appliances and power cords</li> <li>• If you see a dangerous situation, tell an adult</li> <li>• If you see fallen powerlines, stay at least 8metres away from it and anything it may be touching</li> </ul> <p><u>Substation and school holiday safety</u></p> <ul style="list-style-type: none"> <li>• Don't enter a substation</li> <li>• Don't try to retrieve anything that has gone over a substation fence – call Ausgrid and we'll get it for you</li> <li>• Call Ausgrid if you see anyone climbing over fences</li> <li>• Obey substation warning signs</li> </ul> <p><b>Analysis:</b> In 2019, Ausgrid engaged with 789 primary schools (92%) across Ausgrid's network area, up on 2018. Overall, Ausgrid has continued to achieve over 90 percent in school registrations for seven consecutive years.</p> <ul style="list-style-type: none"> <li>• 789 primary schools registered for ESW 2019, representing 92% in the network area</li> <li>• Maintained over 92% participation for the past 6 consecutive years</li> <li>• 56 staff volunteers visited 45 primary schools and two Scout groups (incl Sydney Distance Education Primary School) delivering electricity safety presentations to approximately 9,000 students</li> <li>• As part of the program we leverage teacher feedback provided via an online form to assess effectiveness and identify areas for improvement. In 2019, we received feedback from 131 primary school teachers, representing 16% of all registered schools.</li> <li>• 99% of teachers said they will consider participating in Electricity Safety Week again in 2020</li> <li>• 90% believed electricity safety activities helped their students be safer around electricity</li> <li>• 91% said program complements school's scope and progression for Science &amp; Technology</li> <li>• As part of the student competition, we had 131 poster entries for K-2 students and 14 video entries for Year 3-6 students.</li> </ul> <p><b>Program Status:</b> Ongoing. ESW is reviewed each year to ensure it remains relevant and effective. The program was run again in September 2020.</p> <p>In addition to the Electricity Safety Week (ESW) program, Ausgrid also hosts information on our website to support children's safety year-round, as well as promotes relevant children safety messaging on our social media page during key times such as school holidays.</p>
Bushfire Risk Management	<b>At risk group:</b> Private pole owners

Network operator public safety programs / campaigns	Details
	<p><b>Program Overview:</b> Ausgrid distributes bushfire risk management information which outlines customers' obligations regarding safe management of their electrical installations via direct mail, newspaper advertisements, radio, social media and its website.</p> <p>Our support has two key initiatives:</p> <ul style="list-style-type: none"> <li>• Letters to Private Pole owners (April)</li> <li>• Bushfire helicopter patrols + associated media support (e.g. print, social &amp; earned media May-July)</li> </ul> <p><b>Key messages areas:</b></p> <ul style="list-style-type: none"> <li>• 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</li> <li>• Private pole owners are responsible for the safe operation and maintenance of their electrical installations</li> <li>• 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.</li> </ul> <p><b>Analysis:</b></p> <ul style="list-style-type: none"> <li>• In April 2020, letters to 48,000 Private Pole owners were sent reminding them of their obligations.</li> <li>• A key learning from 2019 was the timeliness of letters sent to Private Pole owners.</li> <li>• The shift in distribution timings to April instead of September (2019), saw a positive reduction in defects from 4,000 in 2019 to 1,300. Customer complaints also reduced year on year.</li> <li>• Our paid media coverage included 4 print adverts placed across May &amp; June to support the Bushfire helicopter patrols.</li> <li>• Ausgrid worked with local media on the helicopter patrols program, securing:</li> <li>• TV coverage by 2 stories this year by NBN News in the Hunter</li> <li>• Radio coverage from 2GB, 2SM, 2GO Gosford, Star FM Gosford, SeaFM Central Coast, HIIT FM, New FM Newcastle, 2HD Newcastle, ABC Sydney news, ABC Central Coast news, ABC Newcastle news</li> <li>• Live extended interviews were also done with the breakfast programs for ABC Sydney, ABC Central Coast and ABC Newcastle</li> <li>• Print and online coverage included 2 stories with the Daily Telegraph, 2 stories by Coast Community News.</li> <li>• With vegetation also playing a role in bushfire risk management, we additionally utilised paid advertising to support our ongoing vegetation management program in parallel to our tree trimming program. Our support included print advertising in May across the St. George &amp; Sutherland Shire Leader, the Newcastle Herald and the Port Stephens Examiner delivering reach to 460,080 people. Digital banner advertising also ran across June and July to deliver 598,811 impressions across the areas the tree trimming took place.</li> </ul>

Network operator public safety programs / campaigns	Details
	<p><b>Program Status:</b> Ongoing. This communication program is reviewed as part of the Bushfire Risk Management Plan and continues to be an area of focus.</p>
<p>Industry Safety - Unintended contact with overhead and underground cables</p>	<p><b>At risk group:</b> Trades and outdoor workers including building and construction workers, crane and machinery operators and truck drivers.</p> <p><b>Program Overview:</b> Ausgrid supports safety messaging of overhead and underground cables through a variety of means. Safety messaging is communicated through our website with a dedicated Working Safe page on our website, which also hosts a variety of factsheets which promote safety messaging specifically for Building and Construction Workers, contact with overhead powerlines, working near Ausgrid cables and scaffolding.</p> <p>Ausgrid also leveraged the Look High, Wide Low safety messaging with paid advertising included in the NSW CONSTRUCTION SITE SAFETY GUIDE &amp; the NATIONAL GUIDE TO PUBLIC WORKS AND SERVICES SAFETY. These are both wall mounted workplace health, safety &amp; wellbeing information billboards, resources developed for the construction and trade industry.</p> <p>Social media was also leveraged to promote campaigns and safety messaging developed to promote the dial before you dig safety messaging.</p> <p><b>Key messages areas:</b></p> <p><u>Overhead power line safety</u></p> <ul style="list-style-type: none"> <li>• Keep a safe distance or clearance from overhead powerlines.</li> <li>• Consider appropriate clearance when working around powerlines as the safe distance can vary according to the size and voltage of the power line.</li> <li>• Look up to check the location and distance of powerlines before beginning any outdoor activity.</li> <li>• Set-up or build structures well away from powerlines.</li> <li>• 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).</li> </ul> <p><u>Underground cable safety</u></p> <ul style="list-style-type: none"> <li>• Always dial 1100 before you dig and stay well clear of underground powerlines.</li> <li>• Always follow the safe work guidelines provided by utilities when working around underground cables.</li> <li>• Plan your work, have the latest utility plan on site and always manually locate cables before you excavate</li> </ul>

Network operator public safety programs / campaigns	Details
	<ul style="list-style-type: none"> <li>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 &amp; Installation Rules of NSW'1.</li> </ul> <p><b>Analysis:</b>  <u>National Guide to Public Works and Services Safety</u>  Distributed to over 3,494 recipients, including:</p> <ul style="list-style-type: none"> <li>Institute of Public Works Engineering Australasia (IPWEA) members throughout Australia</li> <li>Civil Contractors Federation NSW (CCFNSW) members</li> <li>Group Managers of Public Works and Directors of Engineering services of Councils responsible for roads, parks &amp; gardens and waste,</li> <li>Local council throughout Australia for display within offices and at their various work sites</li> <li>Operations and HSE Managers at electricity, water and gas suppliers (and their branches) throughout Australia</li> <li>Displayed at training days and Trade Shows</li> <li>Education &amp; Training Institutes of civil engineering courses</li> </ul> <p><u>NSW Construction site safety Guide</u></p> <ul style="list-style-type: none"> <li>The initiative is supported by the National Safety Council of Australia (NSCA) Foundation</li> <li>Distributed to over 28 recipients including: AW Edwards, Multiplex, Downer, FDC, PROBUILD, Built., ADCO, Fulton Hogan, John Holland, LendLease, Richard Crookes Construction, SANDLiK, Grindley Construction, Patterson Building Group, Lipman, Cockram, BMD, KANE, CPB Contractors, WATPAC, THIESS, Joss Construction, Lang O'Rourke, TRICO Construction, CIMIC, LAHEY, Maincorp and Total Construction.</li> <li>We receive a report from our agency who manages this program that provides photos of the billboards being utilised along with qualitative feedback on the initiative.</li> </ul> <p><b>Program Status:</b> Ongoing. Industry safety continues to be a risk associated with the network. Ausgrid will continue to support safety messages to drive awareness of these risks with this audience group.</p>
<p>NRMA Advertising Campaign (<i>carry over from last report due to timings FY2020</i>)</p>	<p><b>At risk group:</b> General Public / Children</p> <p><b>Program Overview:</b> On August 2019, NRMA insurance aired TV advertising campaign called 'Every Home is Worth Protecting'. The ad showed a child using a metal ladder to climb a power pole to rescue a Koala. An Ausgrid District Operator at Castle Cove saw the ad while watching TV with his family and immediately reported to Ausgrid Health and Safety team.</p>

Network operator public safety programs / campaigns	Details
	<p><b>Key messages areas:</b> N/A</p> <p><b>Analysis:</b> Ausgrid with support of industry partners Essential Energy, Endeavour Energy and Energy Networks Australia was successful in getting NRMA to agree to take the long version of the TVC off television and social media channels.</p> <p><b>Program Status:</b> NRMA agreed to revised advertisement with new version that does not compromise public safety.</p>

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<sup>a</sup> clause 4.5.4)**

Audit scope	Identified non-compliances	Actions
<p><b>Fatigue Management</b> - assessed whether the processes outlined within the Be Safe Hazard Guideline 16: Managing Fatigue are being applied in practice and are effective in managing the fatigue levels of field-based staff.</p>	<p>An issue with fatigue management risk assessment changes during the course of work was identified. The changes were being reflected in the electronic documentation during a job. The audit identified an error with data not saving correctly within the final electronic version of the Hazard Assessment Conversation.</p> <p>Other improvement opportunities were recommended</p>	<p>Management updated the platform and reissued a revised version of the electronic Hazard Assessment Conversation. This has improved functionality and corrected the capture of data from the field.</p>
<p><b>Bushfire Season Preparedness and Vegetation Contract Management</b> - assessed whether preparation processes for the bushfire season were operating effectively.</p>	<p>It was identified that:</p> <ol style="list-style-type: none"> <li>1. Final decisions on historic significant trees or limbs within required clearances, was required.</li> <li>2. Hazardous trees identification training needs to be implemented.</li> </ol> <p>Other improvement opportunities were also identified.</p>	<p>Management are in the process of finalising a risk assessment of all historic significant trees or limbs within required clearances, which will underpin whether further actions are required.</p> <p>The hazardous trees identification training package has been developed and initial training completed.</p>
<p><b>ISO14001 Environmental Management System</b> - Elements 4 &amp; 5 of the ISO standard were reviewed to ascertain how they have been implemented in practice. The clearance of prior audit recommendations was reviewed along with the processes for the testing of water sampling within CBD tunnels.</p>	<p>No non-compliances were identified however, improvement opportunities were recommended</p>	<p>There were no non-compliances that required actioning.</p>

Audit scope	Identified non-compliances	Actions
<b>ISO55001 Asset Management System</b> – assess the compliance with and application of selected ISO55001 standard sections	No non-compliances were identified however, improvement opportunities were recommended	There were no non-compliances that required actioning
<b>Asbestos Compliance review</b> - reviewed the effectiveness of the program to remediate asbestos issues in Ausgrid buildings and for the ongoing management of this risk	No non-compliances were identified however, improvement opportunities were recommended	There were no non-compliances that required actioning
<b>Heavy Vehicle Fatigue Management</b> - assessed the processes around management of fatigue in drivers / operators of Ausgrid heavy vehicles, both the adequacy of procedures and compliance with them	No non-compliances were identified however, improvement opportunities were recommended	There were no non-compliances that required actioning
<b>Incident Reporting</b> – assessment of the WHS incident investigation processes	No non-compliances were identified however, improvement opportunities were recommended	There were no non-compliances that required actioning
<b>Contractor Safety Management</b> - assessed the internal control environment governing Contractor Safety	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

**Table A.15 External audits performed on any aspect of the ENSMS (as per AS 5577<sup>a</sup> clause 4.5.4)**

Audit scope	Identified non-compliances	Actions
<p>ENSMS Bushfire management (29 August 2019)</p> <p><b>Asset Bushfire Risk Management Controls</b></p> <p>Assess the planning and preparation of Ausgrid's amended bush fire risk management strategy and implementation of asset bushfire risk management controls by Ausgrid with respect to all network assets on lands subject to bushfire risk, and aerial consumers mains on bushfire prone land that is private land.</p> <p><b>Vegetation Bushfire Risk Management Controls</b></p> <p>Assess the planning and preparation of Ausgrid's amended bush fire risk management strategy and implementation of vegetation bushfire risk management controls by Ausgrid with respect to all network assets on lands subject to bushfire risk, and aerial consumers mains on bushfire prone land that is private land</p>	<p><i>Non-material non-compliance - NCR1</i></p> <p>Ausgrid prescribes a higher standard for the installation of low voltage spreaders on private consumers mains (refer NS 262 Cl. 6.8.3) than on the shared network (refer NS 179 Cl. 6.6.3 and Annexure C). It is not apparent why a lower standard is applied to the shared network and it is therefore unlikely that requirements outlined in NS 179 meets the Regulation.</p>	<ol style="list-style-type: none"> <li>1. Ausgrid will undertake risk assessment/s of the installation of low voltage spreaders on Network Mains and Private Consumer Mains specified in its Network Standards. This risk assessment will establish the control required to mitigate bushfire risk so far as is reasonably practicable with particular regard given to the installation of spreader bars.</li> <li>2. Following the completion of risk assessments Ausgrid will make necessary updates to its Network Standards.</li> </ol>
	<p><i>Non-material non-compliance - NCR2</i></p> <p>Ausgrid has not adequately demonstrated that their practice of not drilling private poles as part of the inspection process has mitigated risk so far as is reasonably practicable, as is done with network poles as per NS 145 Pole Inspection and Treatment). It is noted that peer NSW networks drill private poles as part of their inspection process.</p>	<ol style="list-style-type: none"> <li>1. Ausgrid will undertake risk assessment/s of its Private Pole inspection process specified in its Network Standards to establish whether the approach taken not to drill private poles mitigates the risk so far as is reasonably practicable.</li> <li>2. Following the completion of risk assessments Ausgrid will make necessary updates to its Network Standards.</li> </ol>
	<p><i>Non-material non-compliance - NCR3</i></p> <p>Ausgrid has not adequately demonstrated that the exceptions for vegetation clearance requirements provided in NS 179 Vegetation Management, are in accordance with alternate vegetation clearance requirements outlined in ISSC3 Schedule 1. Furthermore, for private consumers mains, Ausgrid has a different clearance requirement (NS 262 Cl. 6.9.2). Ausgrid has not demonstrated that the vegetation clearance requirements outlined in NS 179 (specifically the exceptions covered in Cl. 6.6) meet the requirements of the Regulation.</p>	<ol style="list-style-type: none"> <li>1. Ausgrid will undertake a risk assessment/s of the vegetation clearance requirements specified for Network Mains and Private Consumer Mains in its Network Standards to establish whether these exceptions yield an equivalent or improved risk and safety outcome compared to the clearances provided in ISSC3 Schedule 1.</li> <li>2. Following the completion of risk assessments Ausgrid will make necessary updates to its Network Standards.</li> </ol>

<sup>a</sup> 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 2020 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).

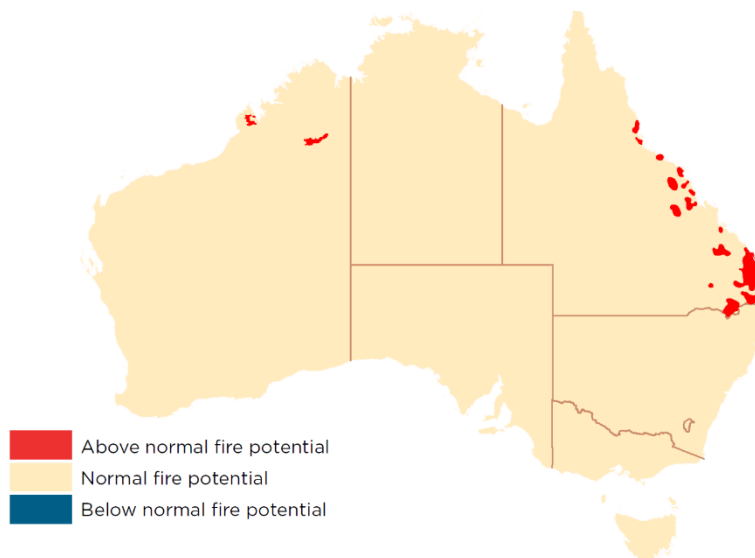
### B.1 Bushfire risk profile across network operator's supply area

Seasonal fire conditions are a function of the volume of fuel (vegetation), the state of that fuel and seasonal weather conditions. 2019 was the warmest and driest year on record for Australia. To date 2020 has seen a shift away from these drier conditions towards average rainfall patterns for large parts of the country. The 2020/21 fire season (Figure 1) will be driven by vastly different climate patterns than the previous two fire seasons. With a La Niña alert now active, large areas of eastern Australia are expecting wetter than average conditions through spring. While these wetter conditions in eastern Australia will help in the short-term, they may lead to an increase in the risk of fast running fires in grasslands and cropping areas over summer. These conditions will be monitored closely over the coming months.

Whilst the current bushfire outlook is forecast as normal for Ausgrid's supply area (Figure 2), 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 a risk to the network from fires ignited away from the network impacting the network.

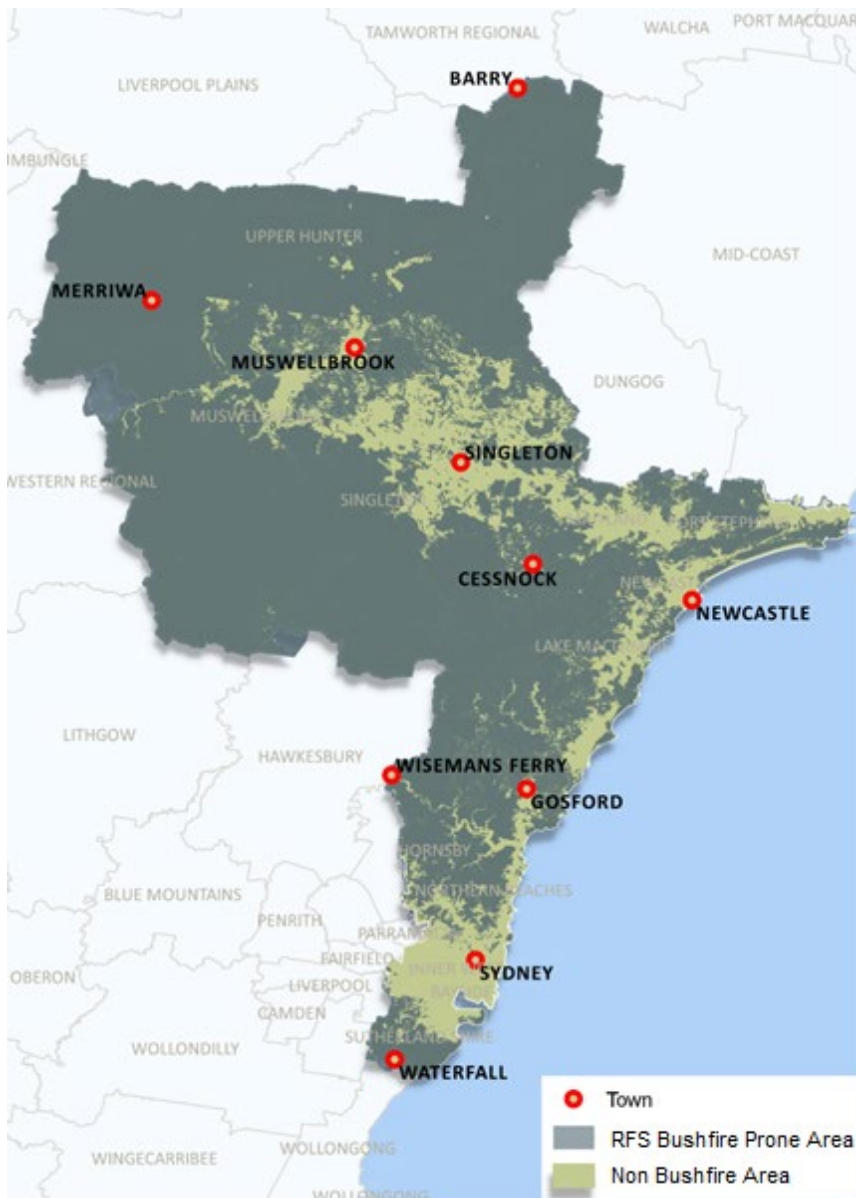
The Weather zone report commissioned by Ausgrid also notes the potential of average to above average thunderstorm activity associated with the La Niña weather patterns. Severe thunderstorms remain a risk through spring and summer, specifically the associated increased chance of lightning events and localised damaging winds.

**Figure 1: Australian Seasonal Bushfire Outlook: September – November 2020<sup>2</sup>**



<sup>2</sup> Australian Seasonal Bushfire Outlook: August 2020 Issue 77 Hazard Notes, [www.bnhcrc.com.au/hazardnotes/77](http://www.bnhcrc.com.au/hazardnotes/77)

**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.**

<b>NSW LGA reference</b>	<b>Permanent or Temporary Date</b>	<b>Commencement of BFDP</b>
<b>Bayside</b>	<b>Permanent</b>	1 October 2020
<b>Burwood</b>	<b>Permanent</b>	1 October 2020
<b>Canada Bay</b>	<b>Permanent</b>	1 October 2020
<b>Canterbury-Bankstown</b>	<b>Permanent</b>	1 October 2020
<b>Central Coast</b>	<b>Permanent</b>	1 October 2020
<b>Cessnock</b>	<b>Permanent</b>	1 October 2020
<b>Cumberland</b>	<b>Permanent</b>	1 October 2020
<b>Dungog</b>	<b>Permanent</b>	1 October 2020
<b>Georges River</b>	<b>Permanent</b>	1 October 2020
<b>Hawkesbury</b>	<b>Permanent</b>	1 October 2020
<b>Hornsby</b>	<b>Permanent</b>	1 October 2020
<b>Hunter’s Hill</b>	<b>Permanent</b>	1 October 2020
<b>Inner West</b>	<b>Permanent</b>	1 October 2020
<b>Ku-ring-gai</b>	<b>Permanent</b>	1 October 2020
<b>Lake Macquarie</b>	<b>Permanent</b>	1 October 2020
<b>Lane Cove</b>	<b>Permanent</b>	1 October 2020
<b>Maitland</b>	<b>Permanent</b>	1 October 2020
<b>Mosman</b>	<b>Permanent</b>	1 October 2020
<b>Muswellbrook</b>	<b>Permanent</b>	1 September 2020
<b>Newcastle</b>	<b>Permanent</b>	1 October 2020
<b>North Sydney</b>	<b>Permanent</b>	1 October 2020
<b>Northern Beaches</b>	<b>Permanent</b>	1 October 2020
<b>Parramatta</b>	<b>Permanent</b>	1 October 2020
<b>Port Stephens</b>	<b>Permanent</b>	1 October 2020
<b>Randwick</b>	<b>Permanent</b>	1 October 2020
<b>Ryde</b>	<b>Permanent</b>	1 October 2020
<b>Singleton</b>	<b>Permanent</b>	1 September 2020
<b>Strathfield</b>	<b>Permanent</b>	1 October 2020
<b>Sutherland</b>	<b>Permanent</b>	1 October 2019
<b>Sydney</b>	<b>Permanent</b>	1 October 2020
<b>Upper Hunter</b>	<b>Permanent</b>	1 September 2020
<b>Waverley</b>	<b>Permanent</b>	1 October 2020
<b>Willoughby</b>	<b>Permanent</b>	1 October 2020
<b>Woollahra</b>	<b>Permanent</b>	1 October 2020

### **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 2020 to August 2020. 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 the preferred option is that the customer addresses the defect. 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 Act if there is an imminent safety hazard or the customer prevents access by Ausgrid to clear the defect.

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
<b>Private LV lines<sup>a</sup> checked by the network operator</b>	22,122 <sup>d</sup>	22,122	34,273	34,273	33,438	33,438	44,296	44,296	n/a	n/a
<b>Number of directions for bushfire risk mitigation issued to LV customers by the network operator</b>	n/a	1,366	n/a	3,502	n/a	2,931	n/a	1,994	n/a	n/a
<b>Number of directions for bushfire risk mitigation issued to LV customers by the network operator that are outstanding by more than 60 days</b>	n/a	0	n/a	0	n/a	0	n/a	0	n/a	n/a
<b>HV customers (metering point count) advised to undertake preseason bushfire checks in accordance with ISSC31<sup>b</sup></b>	96	96	77	77	69	69	n/a	n/a	n/a	n/a
<b>HV customers (metering point count) providing statements of compliance in accordance with ISSC31</b>	96	96	77	77	69	69	n/a	n/a	n/a	n/a
<b>HV customers (metering point count) requiring additional risk mitigation prior to start of the reporting year<sup>c</sup></b>	0	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a
<b>HV customers (metering point count) where additional risk mitigation has been completed prior to start of the reporting year</b>	0	0	0	0	n/a	n/a	n/a	n/a	n/a	n/a

**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.

**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** For the current reporting period, Ausgrid has changed its inspection approach to be only inspecting private LV lines that are not XLPE plus 20% of those that are XLPE resulting in reduced inspections compared to previous years.

**Table B.2 Pre-Summer bushfire inspections**

Pre-summer bushfire inspections	Population (spans / poles)	Target	Achieved	Outstanding	Comments
Aerial Vegetation	120,229 / 123,935 <sup>a</sup>	124,176	124,176	0	n/a
Aerial Hardware	n/a / 115,559 <sup>b</sup>	40,648	40,648	0	n/a
Service Mains <sup>c</sup>	137,028 / n/a	7,673 <sup>d</sup>	7,673	0	n/a
Pole Inspections	n/a / 115,559	0	0	0	Ausgrid does not specifically identify poles for pre-summer bushfire inspections. Refer to Table A.12 for Pole Inspections.
<b>Total</b>		<b>184,629</b>	<b>184,629</b>	<b>0</b>	n/a

**a.** Total number of bays and poles in Bushfire Prone area

**b.** Total number of Network Poles in Bushfire Prone area. 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.** For the current reporting period, Ausgrid has changed its inspection approach to be only inspecting private LV lines that are not XLPE plus 20% of those that are XLPE resulting in reduced inspections compared to previous years. Previously all service mains were inspected.

**Table B.3 Vegetation tasks**

Bushfire risk category	Status	Encroachment Classification A1 <sup>a</sup>	Encroachment Classification A2 <sup>b</sup>	Encroachment Classification A3 <sup>c</sup>	Encroachment Classification A4 <sup>d</sup>	Hazard trees <sup>e</sup>
Bushfire prone land	Identified <sup>g</sup>	9,094	16,415	1,365	2,242	348 <sup>h</sup>
	Completed <sup>g</sup>	8,665	15,534	3,152	22,225	214 <sup>h</sup>
	Open <sup>f,g</sup>	485	978	26,991	22,253	55 <sup>h</sup>
	Outstanding <sup>f,g</sup>	0	0	0	0	0 <sup>h</sup>
Total	Identified	9,094	16,415	1,365	2,242	348
	Completed	8,665	15,534	3,152	22,225	214
	Open <sup>f</sup>	485	978	26,991	22,253	55
	Outstanding <sup>f</sup>	0	0	0	0	0

**a** A1 – vegetation has encroached as far as 75-100% into the minimum vegetation clearance.

**b** A2 – vegetation has encroached as far as 50-75% into the minimum vegetation clearance.

**c** A3 – vegetation has encroached as far as 25-50% into the minimum vegetation clearance.

**d** A4 – vegetation has encroached as far as 0-25% into the minimum vegetation clearance.

**e** Hazard trees are blow-in vegetation hazards as defined in ISSC3 *Guide for the Management of Vegetation in the Vicinity of Electricity Assets*.

**f** See glossary for definitions of open and outstanding.

**g** 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 4,612 Completed 4,315 Open 376 Outstanding 0. 'Open' and 'Outstanding' tasks are those tasks categorised as such at the end of the reporting period.

**h** 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.

**Table B.4 Asset tasks**

Bushfire risk category	Status	Category 1 <sup>a</sup>	Category 2 <sup>a</sup>	Category 3 <sup>a</sup>	Category 4 <sup>a</sup>	Totals
Bushfire prone land	Identified	2,596	1,775	490	28	4,889
	Completed	2,610	1,983	694	94	5,381
	Open <sup>b</sup>	1	25	443	72	541
	Outstanding <sup>b</sup>	0	0	0	0	0
Total	Identified	2,596	1,775	490	28	4,889
	Completed	2,610	1,983	694	94	5,381
	Open	1	25	443	72	541
	Outstanding	0	0	0	0	0

**a** 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

**b** See glossary for definitions of open and outstanding.



# Glossary

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.
Fire	<p>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.</p> <p>Network Scope: Applicable to any fire caused by, or impacting, a network asset.</p>
Functional failure	<p>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.</p> <p>Note: operation of protection equipment (e.g. fuse) within its design characteristics is not a functional failure.</p>
Incident	Defined in accordance with IPART's Electricity networks reporting manual - Incident reporting, available on the IPART website.
Major incident	Defined in accordance with IPART's Electricity networks reporting manual - Incident reporting, available on the IPART website
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.
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.
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.
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.
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.
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.



### **Correspondence**

All correspondence in relation to  
this document should be directed to:

Chief Executive Officer  
Ausgrid  
GPO Box 4009  
SYDNEY NSW 2001  
Telephone: 131 365  
Facsimile: (02) 9394 6546

Published and printed by Ausgrid  
© Ausgrid, October 2020

This publication may only be reproduced with  
the permission of Ausgrid.