

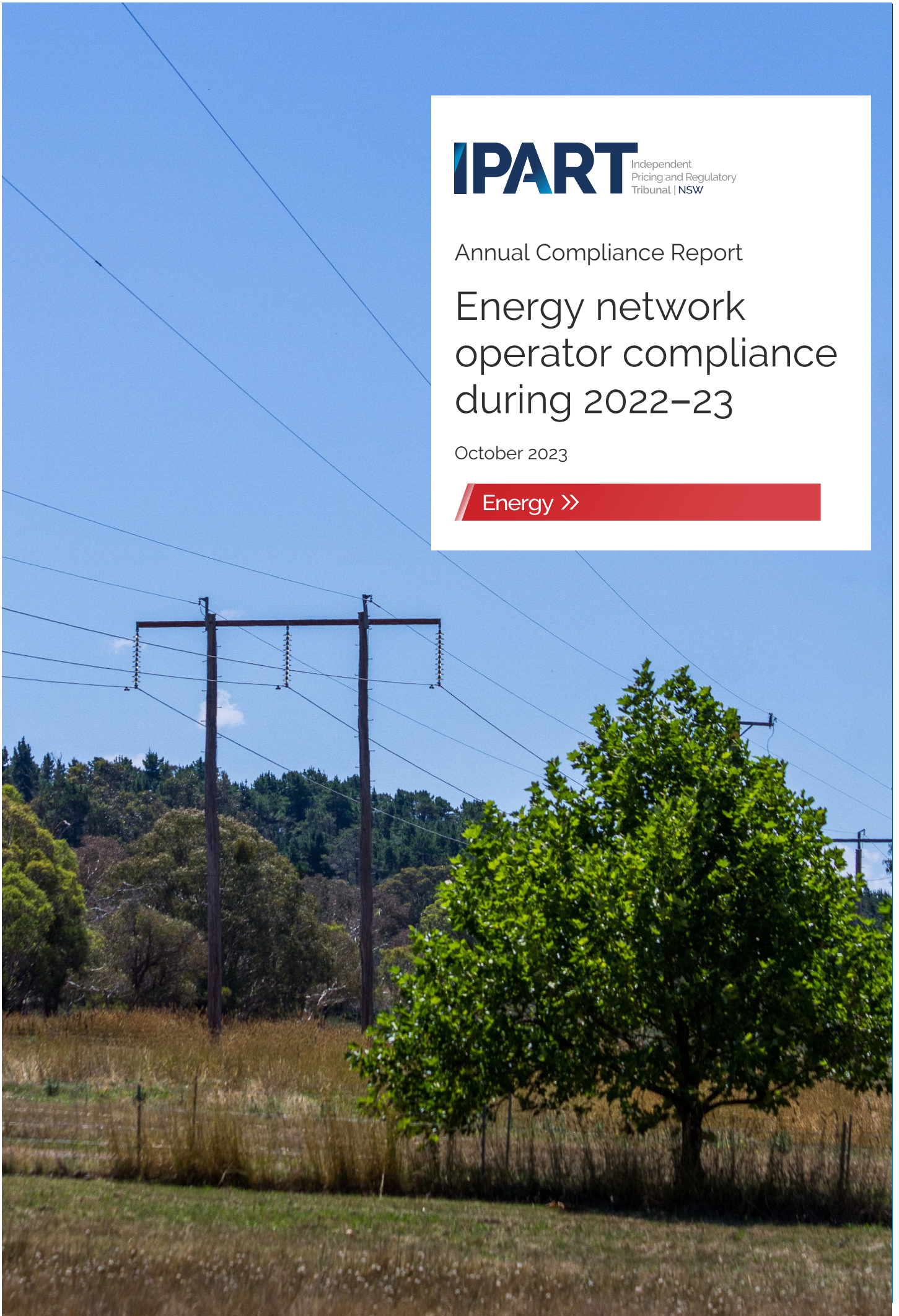


Annual Compliance Report

Energy network operator compliance during 2022–23

October 2023

Energy >>



Acknowledgment of Country

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders both past and present.

We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

Tribunal Members

The Tribunal members for this report are:

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The Independent Pricing and Regulatory Tribunal

IPART's independence is underpinned by an Act of Parliament. Further information on IPART can be obtained from [IPART's website](#).

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Chapter 1 >>

Executive Summary

01

This is the Independent Pricing and Regulatory Tribunal of NSW's (IPART) annual report on the NSW energy network operators^a compliance with relevant obligations for the year 2022–23.^b

A summary of the energy network operators' performance against their respective licence conditions in 2022–23 is detailed below.

Box 1.1 Energy network operators' compliance during 2022–23

In summary, in respect of electricity network operators:

- Transgrid, Ausgrid and Essential Energy were compliant with their critical infrastructure licence obligations. Endeavour Energy had a number of non-material non-compliances which related to a single incident (refer to section 2.1)
- Ausgrid and Endeavour Energy had a number of non-material non-compliances with their reliability and performance licence obligations. Essential Energy had one non-material non-compliance with its reliability and performance licence obligations (refer to section 2.2)
- Ausgrid, Endeavour Energy and Essential Energy reported non-compliances against the requirements of the *NSW Public Lighting Code* (Public Lighting Code) (refer to section 2.3)
- Transgrid, Ausgrid and Endeavour Energy reported no non-compliances with their obligations against the *NSW Code of Practice for Authorised Network Operators* (Code of Practice) for environmental impact statements (refer to section 2.4)
- Ausgrid, Endeavour Energy and Essential Energy reported that they were compliant with their distribution district licence conditions (refer to section 2.5)
- all network operators had one or more non-material non-compliances in relation to reporting requirements, but otherwise were generally compliant with reporting and auditing requirements.

The natural gas reticulators and most gas distribution operators reported that they were compliant with their authorisation or licence conditions. There is no requirement for gas network operators to be audited against their licence and authorisation conditions. Refer to Chapter 3 for details of the gas reticulators and licence holders, and their compliance.

^a Refer to Appendix B for details of energy network operators covered by this report.

^b Refer to Box A.1 for details of the statutory requirements for this report.

We also found that network operators with electricity network assets in NSW (licensed, non-licensed, and interstate)^c took reasonable steps to ensure the safety of their networks during the year, in line with the *Electricity Supply (Safety and Network Management) Regulation 2014* (ESSNM Regulation). However, network operators were unable to complete all necessary vegetation and assets inspections and rectify defects, prior to the start of the bush fire season. This was mostly due to wet weather conditions and access difficulties.

We will continue to proactively engage with all electricity network operators to identify opportunities for continued improvement.

1.1 How we regulate energy networks

We continue to take a risk-based approach to monitoring compliance.

During 2022–23, we were generally able to improve compliance through administrative actions. However, we issued a formal direction to Endeavour Energy to rectify non-compliances with the Public Lighting Code and the ESSNM Regulation.

In accordance with our *Energy Networks Regulation strategic plan*, we publish our *Compliance and enforcement priorities* annually, with a view of the next 3 years. Our priorities for 2022–23 were:

- bush fire risk management (vegetation management)
- critical infrastructure (licence condition compliance)
- climate change adaptation, and
- public safety (contact with the network).

Full details are provided in section 5.1.

1.2 Energy Networks Regulation Committee

The Tribunal delegated certain responsibilities in relation to the electricity networks' assets, relevant licensing, technical and safety functions under the *Electricity Supply Act 1995* and the *ESSNM Regulation* to the Energy Networks Regulation Committee (ENR Committee). The ENR Committee is currently comprised of Carmel Donnelly PSM (Chair), Deborah Cope and Andrew Nicholls PSM. The ENR Committee meets regularly, exercises statutory decision-making powers as appropriate, and provides strategic direction to IPART officers in relation to energy network regulation.

^c Refer to Table 4.1 for details of all network operators with assets in NSW.

Box 1.2 IPART's role

IPART is responsible for administering the licensing regimes for electricity transmission and distribution network operators, natural gas reticulation network operators and gas distribution network operators in NSW. We are also responsible for regulating the reliability and safety of NSW electricity assets. A further overview of the legal framework for energy network operators can be found in Appendix A.

Under the *Gas Supply Act 1996*, IPART monitors, reports and make recommendations to the Minister on action/sanctions in respect of any contravention of conditions of gas authorisations/licences. Some conditions relate to the safety of gas reticulation and distribution systems. IPART does not otherwise regulate the safety or reliability of the gas reticulation or gas distribution networks.^d

We are not the economic regulator for the energy industry, and we have no role in determining network charges.

1.3 Licensed electricity network operators' licence conditions

An overview of the licence conditions pertaining to critical infrastructure, reliability and performance standards, the Public Lighting Code and other licence conditions are set out in Appendix B.

Compliance with these conditions is set out in Chapter 2 of this report.

1.4 Electricity network operators' safety management obligations

The *ESSNM Regulation* requires network operators to have a safety management system in place in accordance with *AS 5577-2013 Electricity network safety management systems* and, among other things, takes into account the primary objective of safety management systems.^e That is to assist network operators to take all reasonable steps to ensure the design, construction, commissioning, operation and decommissioning of its network is safe. And, in particular, to support the management of safety risks arising from protection of the environment (including preventing bush fires that may be ignited by network assets), as well as the safety of the public, people working on the network, protection of property and safety risks arising from the loss of electrical supply.^f

^d We do not regulate electricity generators, gas transmission pipelines or processing or bulk storage facilities for gas, or electricity or gas retailers.

^e Cl 5 of the ESSNM Regulation.

^f Cl 6 of the ESSNM Regulation.

We assessed the electricity network operators' compliance with safety obligations using information we gathered and reports from the network operators.

While focussed on addressing risks, no safety management system can guarantee that network assets or private aerial consumers mains will not provide an ignition source for a fire.

Given the nature of electricity assets and the extensive network of overhead lines that operate within NSW, this risk cannot realistically be eliminated.

Refer to section 4.1 for further details of safety management system obligations, and the network operators' compliance.

1.5 Summary of licensed electricity network operators' compliance and performance during 2022–23

Transgrid

Safety and bush fire risk management



Transgrid reported 10.7% outstanding pre-summer bush fire inspections, 1.6% outstanding asset tasks and no outstanding vegetation tasks. The outstanding actions were due to wet weather conditions and access constraints. Transgrid reported that the outstanding inspections were assessed as low bush fire risk, whereas for outstanding asset tasks, work orders were prioritised to ensure high bush fire risk works were completed first.

In 2022–23, we did not direct an audit of Transgrid's Electricity Network Safety Management System (ENSMS). This was determined based on Transgrid not having non-compliances in its previous bush fire risk management audit and considering the risk of a bush fire initiating from its transmission assets.



Critical infrastructure

Transgrid reported no non-compliances against its critical infrastructure licence conditions. An independent audit did not identify any non-compliances against these licence conditions.



Reliability

Transgrid reported no non-compliances against its transmission reliability licence conditions.



Incident reporting

Transgrid reported in its annual compliance report that 3 incident reports were submitted outside reporting timeframes.



Environmental impact assessments

Transgrid reported no non-compliances with the Code of Practice for conducting environmental assessments.

Ausgrid

Safety and bush fire risk management

Ausgrid reported no outstanding pre-summer bush fire inspections, private main inspections, asset tasks, and 7 outstanding vegetation tasks against its pre-summer bush fire activities. Ausgrid later reported completion of the outstanding tasks in November 2022.



An audit of Ausgrid's bush fire risk management found 2 material non-compliances and 1 non-material non-compliance. However, the auditor noted that Ausgrid has carried out a significant amount of work to improve management of its bush fire risk since the previous audit, and the risk of a bush fire being initiated by Ausgrid's network is well managed.

There were no other audits of Ausgrid's ENSMS during 2022–23.



Critical infrastructure

Ausgrid reported no non-compliances against its critical infrastructure licence conditions. An independent audit did not identify any non-compliances against these licence conditions.



Public lighting

Through working with Ausgrid, we have seen a significant improvement in its level of compliance against the Public Lighting Code during 2022–23. This includes the average repair standard being met for all councils that Ausgrid services. However, Ausgrid was non-compliant in its obligation to repair all individual faults within the timeframes specified by the Public Lighting Code. In addition, Ausgrid reported it was non-compliant with the requirement to provide Public Lighting Services requested by customers within 90 days (or within a timeframe mutually agreed with the customer).

Ausgrid also reported non-compliance in relation to its 2021–22 Public Lighting Code annual performance report due to not submitting 5 required schedules of information and using the incorrect version of IPART's *NSW Public Lighting Code Reporting Template*.



Reliability

While most requirements were met, Ausgrid reported that it did not meet the reliability standards that apply to its 'Long-rural' feeders'. This was primarily caused by an outage from storm conditions and further flooding which affected restoration activities. Ausgrid supplies 2,458 customers through its Long-rural feeders.

An independent audit found that Ausgrid was also non-compliant with customer service standards due to 1 claim not being determined within the required timeframe. The auditor found the non-compliances to be non-material.



Incident reporting

Ausgrid reported that 3 incident reports were submitted outside reporting timeframes. These non-compliances were confirmed by an independent audit.



Distribution districts

Ausgrid reported that it was compliant with its distribution district licence conditions. Ausgrid reported 2 new low voltage service connections that have arisen out of properties with existing Ausgrid out of area connections being redeveloped into multiple dwellings.



Environmental impact assessments

Ausgrid reported no non-compliances with the Code of Practice for conducting environmental assessments.

Endeavour Energy

Safety and bush fire risk management

Endeavour Energy reported no outstanding private main inspections, asset tasks and hazard tree vegetation tasks against its pre-summer bush fire activities. However, it reported 0.3% outstanding pre-summer bush fire inspections and a significant number of outstanding vegetation tasks due to wet weather conditions.



A bush fire risk management auditor noted several non-compliances for Endeavour Energy including:

- 1 material non-compliance relating to the rectification of 5 previous non-material non-compliances
- 3 non-material non-compliances with Endeavour Energy's bush fire Formal Safety Assessment and risk treatments
- 2 non-material non-compliances related to the accuracy and readability of the 2022 bush fire preparedness reports.

The auditor did acknowledge the effort of Endeavour Energy staff who constructively participated in the audit with a positive focus on evidencing its efforts in improving its ENSMS.

There were no other audits of Endeavour Energy's safety management system during 2022–23.

Critical infrastructure

Endeavour Energy reported that it was not compliant with licence conditions 9.2(a) and 10.1(a) due to an incident caused by a third-party contractor establishing a "remote tunnel" from Endeavour Energy's distribution system to an overseas-based server of another Endeavour Energy contractor between 19 February 2023 and 10 March 2023.



Endeavour Energy reported that the third-party contractor was not clear on the requirements of remote access protocols and the contractor with the overseas-based server did not understand that Endeavour Energy is a critical infrastructure site with only anonymised data allowed to be shared for troubleshooting purposes.

An independent audit also found that Endeavour Energy was non-compliant with its Protocol agreement as it did not notify the Commonwealth Representative of the instance of offshore remote access involving the incident described above. The auditor assessed the non-compliances as non-material.

Public lighting

Through working with Endeavour Energy, we have seen a steady improvement in its level of compliance against the Public Lighting Code during 2022–23. This included the repair of many long-standing faulty lights. Nevertheless, Endeavour Energy reported that it was non-compliant with the Service Standards under the Public Lighting Code due to not repairing faults within the timeframes specified by the Public Lighting Code.



In addition, an independent auditor found Endeavour non-compliant with the Public Lighting Code in the following areas:

- having deficient processes in respect of ensuring the accuracy of its 2021–22 annual performance report.
- not processing payments to customers for 2021–22 in accordance with clause 10(d)(ii) of the Public Lighting Code.
- not having a process in place for the 2021–22 period to identify and report on Faults to which Service Standards do not apply under clause 10 of the Public Lighting Code.

Endeavour Energy was also non-compliant with the requirement to provide Public Lighting Services requested by customers within 90 days (or within a timeframe mutually agreed with the customer).

Reliability

Endeavour Energy reported that it was non-compliant with licence condition 5.2(b) related to *individual feeder standards* as it did not complete feeder investigations on time. It also reported non-compliance with licence condition 5A.4(c) related to *individual customer standards* as it did not complete operational actions identified in the investigation report on time. Endeavour Energy reported that these non-compliances were caused by internal staff resourcing constraints.



Endeavour Energy also reported that it was non-compliant with licence condition 7.4 related to incorrect reporting of the number of claims made under the *customer service standards* in its quarterly reporting.

An independent audit found that Endeavour Energy was also non-compliant with licence condition 5A.4(b) as it did not complete investigation reports within the required timeframe under the *individual customer standards*. The auditor found the non-compliances to be non-material.

**Incident reporting**

Endeavour Energy reported that 6 incident reports were submitted outside reporting timeframes. These non-compliances were confirmed by an independent audit.

**Distribution districts**

Endeavour Energy reported 1 new low voltage service wire connection and that it was compliant with its distribution district licence conditions.

**Environmental impact assessments**

Endeavour Energy reported no non-compliances with the Code of Practice for conducting environmental assessments.

Essential Energy

**Safety and bush fire risk management**

Essential Energy reported no outstanding pre-summer bush fire inspections, 11.7% outstanding private main inspections, 28.3% outstanding asset tasks and a 20% outstanding vegetation tasks against its pre-summer bush fire activities. Essential Energy reported that wet weather conditions and access difficulties resulted in a vegetation treatment task backlog.

A bush fire risk management audit identified 4 non-material non-compliances and 3 non-compliances related to the accuracy and readability of the 2022 bush fire preparedness report.

There were no other audits of Essential Energy's safety management system during 2022–23.

**Critical infrastructure**

Essential Energy reported no non-compliances against its critical infrastructure licence conditions. An independent audit did not identify any non-compliances against these licence conditions.

**Public lighting**

Through working with Essential Energy, we have seen a solid improvement in its level of compliance against the Public Lighting Code during 2022–23. This included the repair of many long-standing faulty lights. Nevertheless, Essential Energy reported that it was non-compliant with the Service Standards under the Public Lighting Code due to not repairing faults within the timeframes specified by the Public Lighting Code.

In addition, Essential Energy reported non-compliance with reporting requirements due to:

- not including details of 2 requests from Customers for Public Lighting Services in its 2022–23 quarter 2 and quarter 3 reports.
- not reporting on the details of widespread non-conformity in its 2022–23 quarter 1 and quarter 2 reports.

Essential Energy also reported non-compliance in relation to not notifying customers within 20 business days of completion of Public Lighting Services.

**Reliability**

Essential Energy reported no non-compliances against its reliability and performance licence conditions. An independent audit did not identify any non-compliances against these licence conditions.

**Incident reporting**

Essential Energy reported that 11 incidents were reported outside reporting timeframes. These non-compliances were confirmed by an independent auditor.

**Distribution districts**

Essential Energy reported it was compliant with its distribution district licence conditions and reported no extensions or disconnections outside of its distribution district.

Environmental impact assessments

Essential Energy is not required to comply with the Code of Practice for conducting environmental assessments.

1.6 Report structure

The remainder of this report discusses the compliance performance of the network operators during 2022–23 in more detail, as set out below:

Chapter

2	Licensed electricity network operators' compliance with their licence conditions.
3	Gas network operators' compliance with their authorisation or licence conditions.
4	Electricity network operators' compliance with the ESSNM Regulation and other legislated obligations.
5	Our compliance approach and activities.

Appendix

A	Legal frameworks applicable to electricity and gas networks operating within NSW.
B	Who we regulate and how we assess their compliance.
C	Electricity distribution network operators' reliability and performance.

Chapter 2 >>

Licensed electricity network operators' compliance with their licence conditions

02

NSW transmission network operator Transgrid and distribution network operators Ausgrid, Endeavour Energy and Essential Energy hold operating licences.

New licences were issued to the network operators in September 2023. These licences are available on the [Licence conditions and regulatory instruments](#) page of IPART's website. The [superseded licences](#) (and any subsequent variations) are also available on our website. References and links to licence conditions throughout this report are to the superseded licences that were applicable during 2022–23, unless otherwise indicated.

These licences set out the licensed network operators' conditions and standards of operation, which relate to some or all of the following areas: critical infrastructure, reliability and performance standards, compliance with the NSW Public Lighting Code, distribution districts, compliance reporting and auditing, a requirement to follow a framework for undertaking environmental impact assessments and a requirement to pay a licence fee.

Under the [Electricity networks reporting manual – Annual compliance reporting](#), Transgrid, Ausgrid, Endeavour Energy and Essential Energy must report to IPART on all non-compliances against licence conditions no later than 31 August of each year. The licences also require audits against critical infrastructure licence conditions and the reliability and performance standards licence conditions (Ausgrid, Endeavour Energy and Essential Energy only).

2.1 Critical infrastructure licence conditions

Transgrid, Ausgrid, Endeavour Energy and Essential Energy have critical infrastructure licence conditions in their operating licences.

These conditions require the network operators to:

- have a substantial presence in Australia, including having:
 - maintenance, operation and control of the transmission or distribution system undertaken within Australia
 - directors who are Australian citizens
 - senior officers who hold security clearances and are responsible officers for operational technology, network operations and security operations
- have data security measures on load data and privacy of personal information, and
- comply with reporting and auditing requirements.

Each year, the network operators are required to self-report any non-compliances with their critical infrastructure licence conditions and have their compliance with these conditions independently audited.

Ausgrid, Transgrid and Essential Energy did not report any non-compliances with their critical infrastructure licence conditions. The independent audits of Ausgrid, Essential Energy and Transgrid did not identify any non-compliances for the 2022–23 audit period.

The independent audit of Ausgrid assessed its rectification of the non-material non-compliance with licence condition 9.1(b) that was identified in its 2021–22 audit. The non-compliance related to Ausgrid not providing sufficient evidence that the Senior Officer Responsible for Network Operations had provided approval for maintenance to be performed on community batteries forming part of its distribution system. The auditor reported that Ausgrid had rectified the non-compliance.

Endeavour Energy reported non-compliances with 2 critical infrastructure licence conditions. The independent audit confirmed these non-compliances and found that Endeavour Energy was also non-compliant with its Protocol agreement, which is an agreement under its licence with the Commonwealth Representative.^a The auditor reported that all non-compliances resulted from the same incident. The auditor also confirmed that Endeavour Energy had rectified a non-material non-compliance from 2021–22. Refer to section 2.1.1 for further details.

Throughout the reporting period, IPART officers continued to liaise extensively with the Cyber and Infrastructure Security Centre (within the Commonwealth Department of Home Affairs) regarding these non-compliances, and other critical infrastructure security matters.

2.1.1 Endeavour Energy and Essential Energy's compliance with critical infrastructure licence conditions

Endeavour Energy was not compliant with licence conditions 9.2(a), 10.1(a) and its Protocol agreement

Endeavour Energy reported that it was not compliant with licence conditions 9.2(a) and 10.1(a) due to the same incident. Licence condition 9.2(a) states:

Except to the extent that the Licence Holder is undertaking steps in accordance with, and for the duration of, a Protocol agreed with the Commonwealth Representative, the Licence Holder must, by using best industry practice for electricity network control systems, ensure that operation and control of its distribution system, including all associated ICT infrastructure, can be accessed, operated and controlled only from within Australia, and that its distribution system is not connected to any other infrastructure or network which could enable it to be controlled or operated by persons outside Australia.

Licence condition 10.1(a) states:

The Licence Holder must ensure that all of its information (being design specifications, operating manuals and the like) as to the operational technology (such as the SCADA system) and associated ICT infrastructure of the operational network is held solely within Australia, and that such information is accessible only by a Relevant Person who has been authorised by the Licence Holder and only from within Australia.

^a Endeavour Energy's licence defines 'Commonwealth Representative' as the First Assistant Secretary within the Cyber and Infrastructure Security Centre.

Endeavour Energy reported that a third-party contractor (Contractor 1) established a "remote tunnel" (i.e. a connection) from Endeavour Energy's distribution system to the US-based server of another Endeavour Energy contractor (Contractor 2) between 19 February 2023 and 10 March 2023.

Upon discovering the breach, Endeavour Energy directed Contractor 2 to securely delete all copies of configuration data downloaded and stored on its system, which Contractor 2 confirmed as complete. The remote tunnel was disconnected^b, and firewall rules were set to deny any Virtual Private Network (VPN) connection to Contractor 2. Endeavour Energy also communicated and confirmed remote access and data storage protocols with both contractors.

Endeavour Energy reported the following reasons for the non-compliances:

- Contractor 1 was not clear on the requirements of remote access protocols – specifically, the requirement for written permission from Endeavour Energy before providing remote access to a Contractor or other Operational Technology (OT) systems.
- Contractor 2 did not understand that Endeavour Energy was to be considered a critical infrastructure site with only anonymised data allowed to be provided to the firm for the purposes of troubleshooting.

The independent audit assessed the non-compliances with conditions 9.2(a) and 10.1(a) as non-material. In addition, the auditor identified that Endeavour Energy was also non-compliant (non-material) with its Protocol agreement.^c As noted, the non-compliance resulted from the incident described above.

Endeavour Energy's licence states:

Protocol means a document of the type referred to in conditions 9.1 and 9.2, that is required by the Commonwealth and which must be agreed to between the Commonwealth Representative and the Licence Holder, the document may set out (among other things) the:

- i specified purpose for which maintenance of distribution system equipment may be conducted offshore and the circumstances in which it may be conducted offshore;
- ii methodology and activities to be undertaken to allow for maintenance and repairs of distribution system equipment to be carried out involving remote access from offshore;
- iii exceptional circumstances in which the Protocol applies; and
- iv activities and processes which achieve requisite levels of cyber security.

The auditor reported that Endeavour Energy did not notify the Commonwealth Representative of the instance of offshore remote access involving Contractors 1 and 2 described above. This was a contravention of condition 6 of the Protocol agreement.

^b Endeavour Energy did not state when the disconnection occurred in its annual compliance report. However, based on the non-compliance dates reported and the audit report, we understand the disconnection occurred on 10 March 2023.

^c The Protocol was in effect from 14 May 2021 to 14 May 2023.

We proactively notified the Cyber and Infrastructure Security Centre (within the Commonwealth Department of Home Affairs) of the auditor's potential findings of non-compliance in September 2023 (while the audit was in progress).

The auditor made one recommendation in relation to the 3 non-compliances. We will consider Endeavour Energy's response to the non-compliances and the auditor's recommendation and decide if any further action is appropriate. If any further action is taken, we will report this in next year's report to the Minister.

The auditor also assessed Endeavour Energy's rectification of a previous non-material non-compliance with licence condition 10.1(b)(ii) for the 2021–22 period. The non-compliance related to a limited number of former Endeavour Energy staff being able to access to bulk and personally identifiable customer data through the 'Plus ES MBS' system. The auditor reported that Endeavour Energy had rectified the non-compliance.

Essential Energy was compliant because it undertook the steps in its approved plan

Critical infrastructure obligations were introduced into Essential Energy's licence in 2019. Under the critical infrastructure licence conditions, Essential Energy was required to develop a transition plan which was approved by the Tribunal on 26 June 2019 (Approved Plan). Provided that Essential Energy undertakes steps in accordance with the Approved Plan, Essential Energy will be taken to have satisfied its critical infrastructure licence conditions for the duration of the Approved Plan. The Approved Plan applies until 30 June 2024.

Essential Energy reported no non-compliances with its critical infrastructure licence conditions for the 2022–23 reporting period. The independent audit also found that Essential Energy was compliant with its critical infrastructure conditions during this period due to it undertaking the steps in its Approved Plan.

2.2 Reliability and performance standards licence conditions

Transgrid reports annually on its performance against the transmission reliability and performance standard licence conditions. These conditions require it to plan its network to meet expected levels of unserved energy at each bulk supply point, and to show that it had the prescribed level of redundancy built into its network to manage supply to the distribution networks.

Ausgrid, Endeavour Energy and Essential Energy report quarterly on performance against the reliability and performance standards licence conditions and are also subject to annual independent audits. Their reliability and performance standards licence conditions require each of them to:

- satisfy the requirements of the network overall reliability standards
- investigate each individual feeder that exceeds the individual feeder performance standards, and consider both network and non-network solutions to improve performance
- where appropriate, implement a solution to improve reliability of the feeder
- satisfy the requirements of the reliability standards for individual customers

- investigate each instance where individual customer standards are not met, and consider both network and non-network solutions to improve performance
- make payments to customers if the interruption duration standard or interruption frequency standard is exceeded at the customers' premises, and
- comply with certain reporting and auditing requirements.

Further information on the electricity distribution network operators' reliability and performance data for 2022–23 is at Appendix C.2. Compliance against the reliability and performance standards is outlined in the following section.

2.2.1 Compliance with reliability and performance standards

Transgrid reported full compliance with the *NSW Transmission Reliability and Performance Standard 2017*.^d
















Ausgrid, Endeavour Energy and Essential Energy submitted their reliability and performance standards quarterly reports by the required due dates. They also submitted their independent audit reports by the required due dates as required by their licence conditions.

Ausgrid, Endeavour Energy and Essential Energy self-reported non-compliances against the reliability and performance licence conditions as part of their annual compliance reports. Ausgrid and Endeavour Energy's independent auditor identified an additional non-compliance.

A summary of the non-compliances is in Table 2.1.

^d The *NSW Electricity Transmission Reliability and Performance Standard 2017* is now Appendix 2 in [Transgrid's new licence \(issued September 2023\)](#).

Table 2.1 Summary of distributor's 2022–23 reliability and performance licence condition audit results

Licence condition	Ausgrid	Endeavour Energy	Essential Energy
Clause 4 – Network overall reliability standards	Non-compliant (Non-material) 4.1  Did not meet SAIDI average standards for its long-rural feeders.	Compliant 	Compliant 
Clause 5 – Individual feeder standards	Compliant 	Non-compliant (Non-material) 5.2(b)  Completion of feeder investigation reports did not meet timeframes.	Compliant 
Clause 5A – Individual customer standards	Compliant 	Non-compliant (Non-material) 5A.4(b) and 5A.4(c)  1 Completion of feeder investigation reports did not meet timeframes. 2 Completion of operational actions did not meet timeframes.	Compliant 
Clause 6 – Customer service standards	Non-compliant (Non-material) 6.3  Did not meet timeframes for determining claims.	Compliant 	Compliant 
Clause 7 – Performance monitoring and reporting	Non-compliant (Non-material) 7.5  Incident reporting did not meet timeframes	Non-compliant (Non-material) 7.4, 7.5  1 Incorrect number of customer service standard claims reported. 2 Incident reporting did not meet timeframes	Non-compliant (Non-material) 7.5  Incident reporting did not meet timeframes

Source: 2022–23 reliability and performance audit reports, September 2023.

Ausgrid did not meet the SAIDI average standards for its long rural feeders

The licences of Ausgrid, Endeavour Energy and Essential Energy contain reliability standards. These standards exclude some types of interruptions. After excluded interruptions are removed from the data, each financial year the licence holder is required to meet:

- the System Average Interruption Duration Index (SAIDI) standards that apply to its feeder types.^e SAIDI is the average derived from the sum of the durations of each sustained customer interruption (measured in minutes), divided by the total number of customers (averaged over the financial year) of the licence holder.
- the System Average Interruption Frequency Index (SAIFI) standards that apply to its feeder types.^f SAIFI is the average derived from the total number of sustained customer interruptions divided by the total number of customers (averaged over the financial year) of the licence holder.

Feeder types are defined in the operating licences as shown in Table C.1.

Endeavour Energy and Essential Energy were compliant with the network overall reliability standards licence obligations.

Ausgrid was non-compliant with licence condition 4.1 for not meeting the SAIDI average standards that apply to its feeder types for the 'Long-rural SAIDI' (refer to Table C.2 for further details). This was primarily caused by an outage from storm conditions affecting 141 customers and further flooding which affected restoration activities. Ausgrid was also non-compliant with this condition in 2021–22 for not meeting the Long-rural SAIDI standard which was caused by extensive flooding which affected the fault identification and restoration of widespread outages.

Ausgrid reported that it progressed and reviewed its previous action plan to rectify the 2021–22 non-compliance which remained suitable for 2022–23. It provided an update of these actions including:

- a project to better segment the impacted feeder to limit the impact of faults (expected completion end of 2023)
- commencement of communications trial to improve the reliability of status and controllability of remote controllable switches. Switches have been identified to implement communications solutions where cost effective
- investigation into the use of light detection and ranging helicopters and drones for patrolling lines. 'Beyond Visual Line of Sight' application lodged with the aviation authority in early April 2023 is pending.

^e Refer to licence conditions 4.1 of each of the Distributors' licences applicable for 2022–23.

^f Refer to licence conditions 4.2 of each of the Distributors' licences applicable for 2022–23.

Endeavour Energy did not complete all feeder investigations and operational actions on time

The licences of Ausgrid, Endeavour Energy and Essential Energy contain individual feeder performance conditions. These conditions apply where one or more of the feeders or low-voltage stand-alone power systems of a licence holder does not meet the relevant individual SAIDI and SAIFI feeder standards for each feeder type requiring it to undertake a number of actions including:

- investigate the causes for each feeder exceeding the individual feeder standards and identify any action required to improve the performance
- complete any operational actions identified in the investigation to improve performance within the timeframes specified by the licence
- consider any non-network strategies which provide reliable outcomes for customers that are equal or more cost-effective than the network option, and
- develop a project plan and commence the implementation of any non-operational actions within the timeframes specified by the licence and ensure the implementation is as short as reasonably practicable.

Endeavour Energy was non-compliant with:

- licence conditions 5.2(b) and 5A.4(b) as it did not complete feeder investigations on time, and
- licence condition 5A.4(c) as it did not complete operational actions identified in the investigation report on time.

Licence condition 5.2(b) relate to feeders under the *individual feeder standards* whereas 5A.4(b) and 5A.4(c) relate to feeders under the *individual customer standards*. As Endeavour Energy performs the same processes for feeders under both the individual customer standards and the individual feeder standards, this has resulted in multiple non-compliances.

Endeavour Energy reported that these non-compliances were due to internal staff resourcing constraints. In its annual compliance report, Endeavour Energy reported that as the staff recruitment process was completed towards the end of 2022–23, feeder investigations were not completed in time. However, it reported a feeder tracking dashboard to assist with the ongoing management of investigation reports.

Endeavour Energy was also non-compliant with 5.2(b) in 2021–22. The auditor noted Endeavour Energy had taken actions since the 2021–22 non-compliance to improve investigation timeframes including resolving the resource constraint and improvements to its systems for calculating the required timeframes.

Ausgrid was non-compliant with customer service standards

The licences of Ausgrid, Endeavour Energy and Essential Energy contain customer service standards, including requirements to:

- pay \$80 to a customer if the interruption duration standard or interruption frequency standard is exceeded at the customer's premises, and the customer makes a claim within the required timeframe^g
- determine the claim for payment and notify the customer within one month of receipt of the claim^h
- take reasonable steps to make customers aware of the availability of these payments, including, at a minimum, publishing this information on its website and annual newspaper advertisements.ⁱ

Ausgrid was non-compliant with licence condition 6.3 requiring it to determine a claim for payment under the customer service standards and notify the customer within one month of receipt of the claim. The auditor found that of the 379 claims, 1 claim was resolved in 32 days, exceeding the timeframe required for determining claims.

Endeavour Energy was not fully compliant with performance monitoring and reporting

The licences of Ausgrid, Endeavour Energy and Essential Energy contain performance monitoring and reporting conditions. Each licence holder must submit to IPART quarterly, information on its performance against the network overall reliability standards, the individual feeder standards and the customer service standards including details of how it met the conditions.

Endeavour Energy was non-compliant with licence condition 7.4 related to incorrectly reporting the number of claims made under the customer service standards in its quarterly reporting. Endeavour Energy self-reported this in its annual compliance report. Refer to section 2.6 for further details.

Ausgrid, Endeavour Energy and Essential Energy were not fully compliant with incident reporting obligations

Ausgrid, Endeavour Energy and Essential Energy also self-reported non-compliances against the reliability and performance licence conditions for incident reporting as part of their annual compliance reports. Refer to section 4.4.3 for further details.

2.3 NSW Public Lighting Code

Public lighting is an important contributor to a safe, secure and attractive visual environment for pedestrians and vehicular traffic during times of inadequate natural light. The Public Lighting Code supports the reliable and efficient provision of public lighting services.

^g Licence condition 6.1 and 6.2 of the licences applicable for 2022–23.

^h Licence condition 6.3 of the licences applicable for 2022–23.

ⁱ Licence condition 6.4 of the licences applicable for 2022–23.

The [Public Lighting Code \(version 1.2\)](#) that was in force in 2022–23 was published by the Office of Energy and Climate Change (OECC) in March 2021 and took effect on 1 July 2021. OECC published a revised version of the [Public Lighting Code \(version 1.3\)](#) in December 2022, which took effect on 1 July 2023.^j As such, it will apply for the 2023–24 reporting period and beyond. References in this report relate to version 1.2 of the Public Lighting Code which applied during 2022–23, unless otherwise indicated.

Ausgrid, Endeavour Energy and Essential Energy, are defined as Service Providers^k under the Public Lighting Code. They have been required to comply with the Public Lighting Code under their licences since 1 July 2019. The Service Providers own and maintain a large majority of NSW public lighting assets, with local councils and Transport for NSW being their primary Customers.^l

The Public Lighting Code includes:

- standards of service (Service Standards) that a Service Provider must meet in the delivery of public lighting services,^m including requirements to repair Faults with public lighting assets within certain timeframes
- requirements for the provision of public lighting servicesⁿ by Service Providers
- a mechanism that allows Services Providers and Customers to agree to the installation of non-standard luminaires
- a requirement for Service Providers to have a management plan on the operation, maintenance, refurbishment, replacement, repair and disposal of public lighting assets.

2.3.1 Compliance with the Public Lighting Code

All Service Providers submitted the reports required by the Public Lighting Code and IPART's *Electricity networks reporting manual - NSW Public Lighting Code compliance reporting* (Reporting Manual – Public Lighting Code).^o

All Service Providers reported non-compliances against the Public Lighting Code's service standards, which include target timeframes for repairing faults affecting public lighting assets.

We have detailed the Service Providers' compliance with the Public Lighting Code in Table 2.2, Table 2.3, Table 2.4, Figure 2.1, Figure 2.2 and Table 2.5, and their reported non-compliances in section 2.3.4. Please note that all Fault repair times are measured in business days.

^j Refer to section 5.3.1 of this report for details of OECC's review of the Public Lighting Code and IPART's involvement in the review.

^k Ausgrid, Endeavour Energy and Essential Energy are referred to as Service Providers in section 2.3 of this report. Other terms defined in the Public Lighting Code are also used in Section 2.3.

^l Clause 17 of the Public Lighting Code defines Customer to mean 'a Council (as defined by the *Local Government Act 1993*) or a Public Authority of a Local, State or Federal Government.'

^m Service Standards are specified in Schedule 1 clause 1 of the Public Lighting Code

ⁿ Clause 17 of the Public Lighting Code defines Public Lighting Services to mean 'any of the following services that are provided for the purpose of lighting public places:

- (a) the operation, maintenance, repair and replacement of Public Lighting Assets;
- (b) the alteration and relocation of Public Lighting Assets; and
- (c) the installation and provision of new Public Lighting Assets.'

^o Endeavour Energy did not submit all reports on time.

General Fault and General (Priority) Fault definitions

We have included General Fault and General (Priority) Fault definitions below:

- General Faults means all Faults that are not Complex Faults and are not subject to an Excluded Fault Condition.
- Priority Fault means a Fault relating to lighting at pedestrian crossings or groups of 3 or more consecutive lights on 'Category V roads' (as defined in AS/NZS 1158).
- A General (Priority)^P Fault is both a 'General Fault' and a 'Priority Fault'.

We have summarised the Service Providers' performance in repairing General Faults and General (Priority) Faults in Table 2.2.

Table 2.2 General Fault and General (Priority) Fault repairs

Statistic	Ausgrid	Endeavour Energy	Essential Energy
Number of General Faults repaired within 10 business days ^a	15,684 out of 15,998 (98.04%)	14,595 out of 17,219 (84.76%)	3,475 out of 3,781 (91.91%)
Number of Customers for which General Faults were repaired within 8 business days on average ^b	34 out of 34 (100%)	18 out of 22 (81.82%)	75 out of 83 (90.36%)
Average repair timeframe for all General Faults (business days)	3.28	5.39	4.65
Number of General (Priority) Faults repaired	2070	1460	25
Number of Customers for which General (Priority) Faults were repaired more quickly than the average repair target for General Faults ^c	17 out of 30 (56.67%)	19 out of 20 (95.00%)	5 out of 12 (41.67%)
Average repair timeframe for all General (Priority) Faults (business days)	3.44	1.61	4.16

a. General Faults must be repaired within 10 business days.

b. General Faults must be repaired within 8 business days on average for each Customer for the financial year.

c. Service Providers are required to take reasonable steps to repair General (Priority) Faults more quickly than the average repair target for General Faults (of 8 business days on average for each Customer for the financial year).

Note: Service Providers were required to repair all Faults within the timeframes specified in footnotes a to c above to be compliant with these Public Lighting Code obligations in 2022–23.

Complex Fault and Complex (Priority) Fault definitions

We have included Complex Fault and Complex (Priority) Fault definitions below:

- Complex Faults means Faults related to Repairs not subject to an Excluded Fault Condition:
 - where a site-specific traffic management plan and an additional dedicated traffic control crew are required; and/or
 - where a site-specific Road Occupancy Licence or other specific authority for road occupancy is required; and/or
 - where identification of an underground Fault is required; and/or
 - where access to private property is required.

^P We have used this term for convenience, noting that it is not defined in the Public Lighting Code.

- Priority Fault means a Fault relating to lighting at pedestrian crossings or groups of 3 or more consecutive lights on 'Category V roads' (as defined in AS/NZS 1158).
- A Complex (Priority) Fault^a is both a 'Complex Fault' and a 'Priority Fault'.

Table 2.3 Complex Fault and Complex (Priority) Fault repairs

Statistic	Ausgrid	Endeavour Energy	Essential Energy
Number of Complex Faults repaired within 30 business days ^a	1,191 out of 1,213 (98.19%)	2,974 out of 4,845 (61.38%)	1,736 out of 2,013 (86.24%)
Number of Customers for which Complex Faults were repaired within 25 business days on average ^b	34 out of 34 (100%)	3 out of 21 (14.29%)	74 out of 81 (91.36%)
Average repair time for all Complex Faults (business days)	9.57	42.40	15.36
Number of Complex (Priority) Faults ^c repaired	492	275	123
Number of Customers for which Complex (Priority) Faults were repaired more quickly than the average repair target (of 25 business days) for Complex Faults	24 out of 28 (85.71%)	7 out of 18 (38.89%)	38 out of 41 (92.68%)
Average repair time for all Complex (Priority) Faults (business days)	7.44	25.56	5.89

a. Complex Faults must be repaired within 30 business days.

b. Complex Faults must be repaired within 25 Business Days on average for each Customer for the financial year.

c. Service Providers are required to take reasonable steps to repair Complex (Priority) Faults more quickly than the average repair target for Complex Faults (of 25 business days for each Customer for the financial year).

Note: The Service Providers were required to repair all Faults within the timeframes specified in footnotes a to c above to be compliant with these Public Lighting Code obligations in 2022-23.

Faults with an excluded fault condition

Faults with an excluded Fault condition are excluded from the individual and average repair targets. The 'Fault condition' that applies to each Fault determines the permitted repair standard (i.e. target repair timeframe). We have included details of the Fault conditions and their associated permitted repair standards below.

Table 2.4 Excluded Fault conditions

Fault condition	Permitted repair standard
Where there is a Fault to a Non-Standard luminaire, and the Service Provider does not have spare parts available and where the Service Provider has taken all reasonable steps to source those parts as soon as practicable	100
Where the Service Provider must give notice to third parties as required by the Regulatory Requirements or otherwise	As agreed ^a
Where there are delays in undertaking the Repairs as agreed with the Customer or as requested by the Customer	As agreed ^a

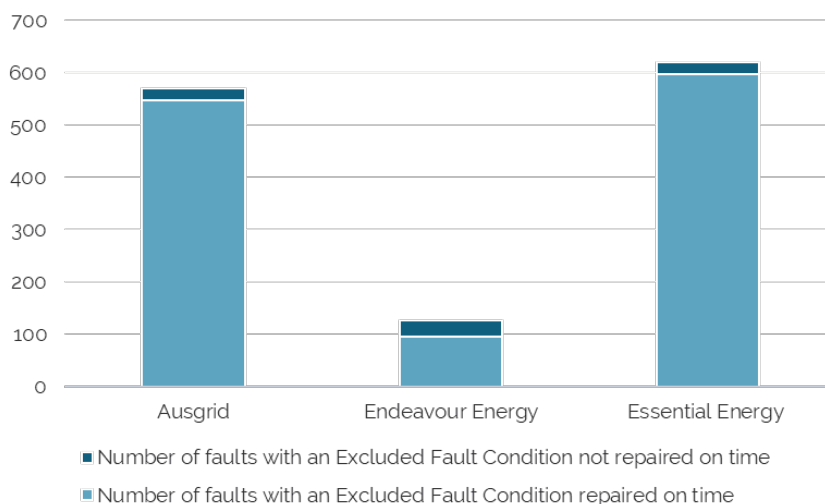
a. Refers to agreement between the Service Provider and relevant Customer on the permitted repair standard.

Source: Public Lighting Code.

^a We have used this term for convenience, noting that it is not defined in the Public Lighting Code.

We have summarised the Service Providers' performance in repairing Faults with an excluded Fault condition in the figure below.

Figure 2.1 Faults with an excluded fault condition



Note: Ausgrid repaired 547 out of 569 (96.13%) of faults on time, Endeavour Energy repaired 95 out of 127 (74.80%) of faults on time and Essential Energy repaired 597 out of 620 (96.29%) of faults on time. The Service Providers were required to repair all Faults with an Excluded Fault Condition on time to be compliant with this Public Lighting Code obligation in 2022-23.

Source: Service Providers' 2022-23 Public Lighting Code annual performance reports.

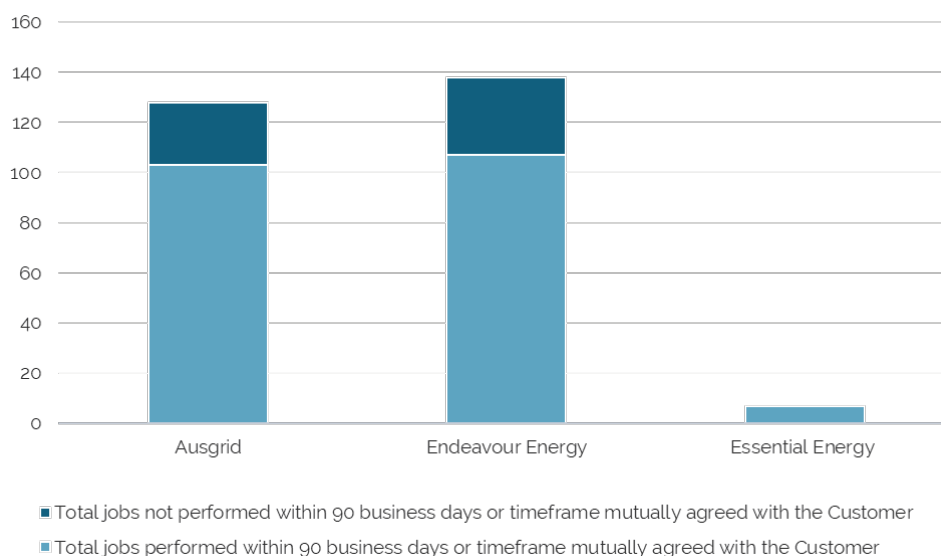
Public Lighting Services

If a Customer requests in writing that its Service Provider perform Public Lighting Services involving the installation of up to 10 Standard Luminaires, a Service Provider must perform the required services:

- in a timely fashion and in any event within 90 business days, or
- at a time mutually agreed between the Service Provider and Customer.

We have summarised the Service Providers' performance in providing Public Lighting Services in the figure below.

Figure 2.2 Public Lighting Services



Note: Ausgrid completed 103 out of 128 (80.47%) of installations on time, Endeavour Energy completed 107 out of 138 (77.54%) of installations on time and Essential Energy completed 7 out of 7 (100.00%) of installations on time. The Service Providers were required to complete all installations on time to be compliant with this Public Lighting Code obligation in 2022-23.

Source: Service Providers' 2022-23 Public Lighting Code annual performance reports.

Faults to which Service Standards do not apply

The Service Standards do not apply where compliance with the Service Standards is affected by:

- a Force Majeure Event that did not result in a loss of electricity supply to electricity customers; or
- a Force Majeure Event that resulted in a loss of electricity supply to electricity customers; or
- a Fault which required replacement of the electricity distribution pole.

Where no Service Standards apply to a Public Lighting Service for one of the above reasons, a Service Provider must document the level of service (i.e., a target repair timeframe) in the relevant Management Plan and report on its performance against the level of service.^r We have summarised the Service Providers' performance in repairing Faults to which Service Standards do not apply in the table below.

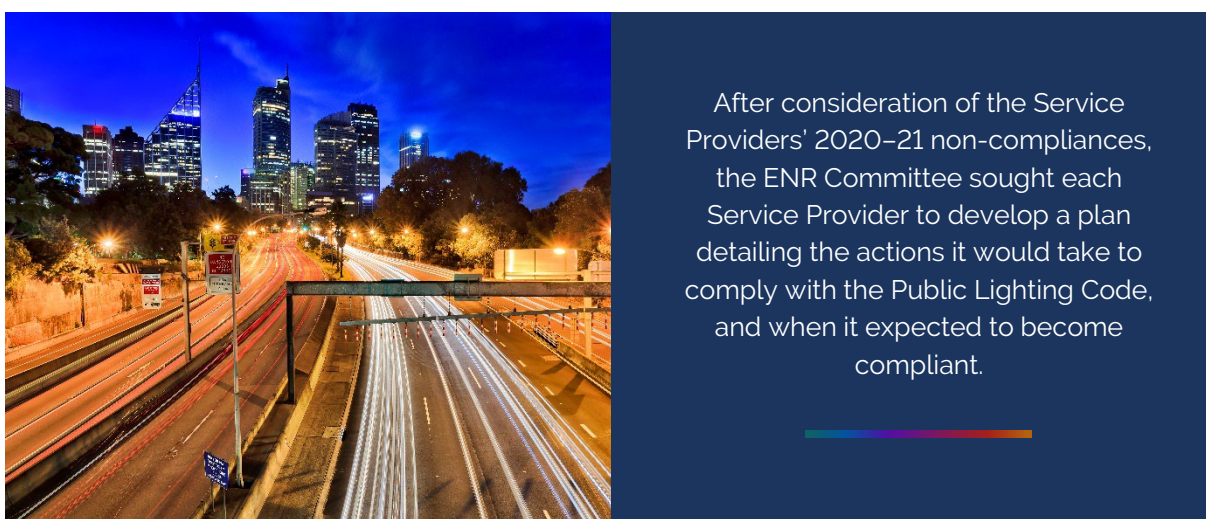
^r We require the Service Providers to report on the level of service and their performance against it in quarterly and annual reports.

Table 2.5 Faults to which Service Standards do not apply

Statistic	Ausgrid	Endeavour Energy ^a	Essential Energy
Total number of Faults affected by a Force Majeure Event (that did not result in a loss of electricity supply) that were repaired on time	138 out of 138 (100.00%)	0 out of 0	96 out of 127 (75.59%)
Total number of Faults affected by a Force Majeure Event (that resulted in a loss of electricity supply) that were repaired on time	0 out of 0	0 out of 0	0 out of 0
Total number of Faults that required replacement of the electricity distribution pole that were repaired on time	135 out of 135 (100.00%)	0 out of 0	0 out of 0

a. An independent audit of Endeavour Energy's compliance with the Public Lighting Code this year (that was directed by IPART) found that Endeavour Energy did not have a process in place to identify and report on Faults to which Service Standards do not apply. Please refer to details of Endeavour Energy's reported non-compliances below for further information.

2.3.2 Service Provider compliance plans



The establishment of service provider compliance plans were part of our strategy to improve the Service Providers' compliance with the Public Lighting Code. Each Service Provider responded in November 2021 with a plan to become compliant (Compliance Plans) with the Public Lighting Code. The Service Providers followed their Compliance Plan for the remainder of the 2021–22 reporting period and into the 2022–23 reporting period.

After failing to become compliant with the Public Lighting Code under its Compliance Plan, Endeavour Energy submitted a revised Compliance Plan to IPART on 31 October 2022, which targeted compliance with the Public Lighting Code by April 2023.

The Service Providers' Compliance Plans (including Endeavour Energy's revised Compliance Plan) targeted compliance by the following dates.

Figure 2.3 Service Providers' Compliance Plans



Note: Endeavour Energy's original Compliance Plan targeted compliance with the Public Lighting Code by 2022-23 quarter 1.

Source: Service Providers' Compliance Plans.

Under the Public Lighting Code, Faults only contribute to repair targets once they have been repaired. Due to this, Service Providers' performance against repair targets decreased as they repaired aged Faults in line with their Compliance Plans.

Overall, the Service Providers' performance under the Public Lighting Code has significantly improved since they commenced their Compliance Plans at the end of 2021.

2.3.3 Audit of Endeavour Energy's compliance with the Public Lighting Code

On 12 February 2023, the ENR Committee directed Endeavour Energy to undertake an independent audit of its compliance with the Public Lighting Code (pursuant to condition 19A.2 of Endeavour Energy's distributor's licence).⁵

The ENR Committee took this action due to concerns about Endeavour Energy's compliance with the Public Lighting Code, particularly in relation to the accuracy and reliability of its reporting.

The auditor identified:

- 3 material non-compliances and 1 non-material non-compliance relating to the completeness and accuracy of Endeavour Energy's 2021-22 annual performance report and annual customer reports.
- 1 non-material non-compliance with 10(d)(ii) of the Public Lighting Code in 2021-22 due to not processing public lighting customer payments in accordance with the Public Lighting Code.
- 1 non-material non-compliance with clause 10(j) of the Public Lighting Code due to not having a process in place for 2021-22 to identify and report on faults to which Service Standards do not apply.

⁵ Condition 19A.2 of Endeavour Energy's licence that was in effect for the 2022-23 audit period provides that it must comply at its own expense and within a reasonable timeframe nominated by the Tribunal, with any direction from the Tribunal to have its compliance with condition 19A.1 audited by an Approved Auditor.

On 21 July 2023, Endeavour Energy submitted a rectification plan to IPART outlining actions to address the non-compliances from the audit by 31 December 2023. Following this, the ENR Committee directed Endeavour Energy to rectify the non-compliances identified in its Public Lighting Code audit by 31 December 2023.^t

We will report on Endeavour Energy's progress to rectify the audit non-compliances in our 2023–24 Annual Compliance Report.

2.3.4 Service Provider non-compliances

All Service Providers submitted their quarterly reports and annual performance reports to IPART by the deadlines specified by the Public Lighting Code and IPART's [Reporting Manual – Public Lighting Code](#). However, Ausgrid and Endeavour Energy did not submit their 2021–22 annual performance reports in accordance with the Reporting Manual – Public Lighting Code. These reports were due to IPART by 31 August 2022. As such, the resulting non-compliances occurred in the 2022–23 reporting period. We have discussed these non-compliances in further detail below:

- Ausgrid submitted its 2021–22 annual performance report fault data in a draft version of the NSW Public Lighting Code Reporting Template (Reporting Template) and it failed to submit 5 schedules of information required under the Reporting Manual – Public Lighting Code. After IPART highlighted these issues to Ausgrid, it resubmitted its fault data in the correct version of the Reporting Template and submitted the 5 schedules of information. Ausgrid cited human error as the reason for the misreporting.
- Endeavour Energy did not provide permitted repair standards^u for 42 faults with an excluded fault condition in its 2021–22 annual performance report. In addition, Endeavour Energy did not submit a schedule of information detailing its non-compliances with the Public Lighting Code. Endeavour Energy submitted the missing information after IPART highlighted these issues to it.

In addition, Ausgrid did not submit its 2022–23 annual performance report in accordance with the Reporting Manual – Public Lighting Code. We will report details of this non-compliance in our 2023–24 Annual Compliance Report.

All Service Providers reported non-compliances with the Service Standards. We expected the Service Providers to report non-compliances (to varying extents) during the 2022–23 reporting period because:

- Ausgrid and Essential Energy were following plans to become compliant with the Public Lighting Code for some of the reporting period, and
- Endeavour Energy was following a plan to become compliant with the Public Lighting Code for most of the reporting period.

^t The ENR Committee issued the direction under Schedule 2, clause 8A(1)(a) of the *Electricity Supply Act 1995*.

^u This refers to a repair time agreed between Endeavour Energy and relevant public lighting customers for the repair of certain faults with an excluded fault condition under Schedule 1 clause 1 Table B of the Public Lighting Code.

We have summarised the Service Providers' reported non-compliances and their responses to them below. We have also outlined any other non-compliances with the Public Lighting Code that we identified in the Service Providers' 2022–23 annual performance reports.

Ausgrid

Ausgrid reported non-compliance with clause 9(b)^v of the Public Lighting Code due to not performing all Public Lighting Services requested by Customers on time (Ausgrid completed 103 out of 128 installations requested by Customers on time).

Ausgrid noted the following in response to the non-compliance:

- Ausgrid has worked with Customers to develop tailored delivery timeframes by agreement for complex installations. It has also implemented system enhancements to improve project management and tracking and an increase in delivery resources.
- Most non-compliances occurred in 2022–23 quarter 1. Improved processes have contributed to reduced non-compliances in subsequent quarters.

Ausgrid was also non-compliant with clause 10(c) of the Public Lighting Code. This was due to Ausgrid not repairing General Faults, General (Priority) Faults, Complex Faults, Complex (Priority) Faults and Faults with an Excluded Fault Condition in accordance with the Service Standards (as outlined in the tables and figures above).

Endeavour Energy

Endeavour Energy reported non-compliance with clause 10(c) of the Public Lighting Code due to not meeting the Service Standards for Complex Faults and General Faults (as outlined in the tables above).

Endeavour Energy was also non-compliant with:

- clause 10(c) of the Public Lighting Code due to not meeting the Service Standards for Complex (Priority) Faults, General (Priority) Faults and Faults with an Excluded Fault Condition (as outlined in the tables above).
- clause 9(b) of the Public Lighting Code due to not performing all Public Lighting Services requested by Customers on time (Endeavour Energy completed 107 out of 138 of installations requested by Customers on time).

Endeavour Energy also reported the following non-compliances that were identified in the independent audit of its compliance with the Public Lighting Code that was undertaken in 2022–23:

- Non-compliance with clause 8 of the Public Lighting Code due to having deficient processes in respect of ensuring the accuracy of its 2021–22 annual performance report.
- Non-compliance with clause 10(d)(ii) of the Public Lighting Code due to not processing payments to customers for 2021–22 in accordance with this clause.

^v Clause 9(b) of the Public Lighting Code specifies requirements for Service Providers in relation to performing Public Lighting Services involving the installation of up to 10 standard luminaires.

- Non-compliance with clause 10(m) of the Public Lighting Code due to not having a process in place for the 2021–22 period to identify and report on Faults to which Service Standards do not apply.

In relation to the non-compliance with clause 10(c) of the Public Lighting Code, Endeavour Energy noted it completed actions to address this non-compliance by 1 April 2023, including repairing aged faults and accelerating repair times.

As noted, on 21 July 2023 Endeavour Energy submitted a rectification plan to IPART outlining actions to address the non-compliances by 31 December 2023 and the ENR Committee subsequently directed Endeavour Energy to rectify the non-compliances by the same date.

Essential Energy

Essential Energy reported:

- Non-compliance with clause 10(c) of the Public Lighting Code due to not repairing 306 General Faults and 277 Complex Faults in accordance with the Service Standards (as outlined in the tables above).
- Non-compliance with the Reporting Manual – Public Lighting Code due to not including details of 2 requests from Customers for public lighting services under clause 9 of the Code in its 2022–23 quarter 2 and quarter 3 reports.
- Non-compliance with clause 8(g) of the Public Lighting Code due to not reporting on the details of widespread non-conformity^w in its 2022–23 quarter 1 and quarter 2 reports.
- Non-compliance with clause 9(b)(iv) of the Public Lighting Code in relation to not notifying customers within 20 business days of completion of Public Lighting Services.

Essential Energy was also non-compliant with clause 10(c) of the Public Lighting Code due to not meeting the Service Standards for Complex (Priority) Faults, General (Priority) Faults and Faults with an Excluded Fault Condition (as outlined in the tables above).

Essential Energy submitted a rectification plan to IPART on 14 April 2023 outlining actions to address non-compliance with clause 10(c) of the Public Lighting Code by 1 January 2023.

Essential Energy noted the following in response to the 3 other non-compliances:

- Non-compliance with the Reporting Manual – Public Lighting Code:
 - Essential Energy has correctly reflected the number of customer requests for Public Lighting Services in its 2022–23 annual performance report.
 - Essential Energy staff will complete a peer review of quarterly reporting prior to approval to ensure data reported is accurate.
- Non-compliance with clause 8(g) of the Public Lighting Code:
 - Essential Energy implemented additional checks to ensure the details of widespread non-conformity are included when the threshold has been exceeded.

^w Under clause 17 of the Public Lighting Code, Widespread Non-conformity means where 5 per cent or more of General Faults in the relevant period have not been Repaired within the maximum Repair time allowed under the Individual Repair Standard as a result of, or in connection with, a specific factor or reasonably related factors.

- Essential Energy included details of widespread non-conformity in its 2022–23 quarter 3 report.
- In relation to the non-compliance with clause 9(b)(iv) of the Public Lighting Code Essential Energy reported it will investigate and implement a process to monitor completion of installation projects to allow timely notification to its Customers.

2.4 NSW Code of Practice for environmental impact assessments

It is a condition of the licences of Transgrid, Ausgrid and Endeavour Energy that they comply with the NSW Code of Practice for Authorised Network Operators (Code of Practice).^{*} The Code of Practice provides a framework for undertaking environmental impact assessments under Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).

The Code of Practice aims to:

...ensure that assessments under Part 5 are conducted appropriately and in a manner that supports proper environmental assessment including appropriate community consultation.

2.4.1 Compliance with the Code of Practice

Transgrid, Ausgrid and Endeavour Energy reported no non-compliances with the Code of Practice.

2.5 Distribution Districts

In accordance with their licence conditions, the distribution network operators (Ausgrid, Endeavour Energy and Essential Energy) need to obtain approval and authorisation from IPART before they extend their network outside of their distribution districts. The distribution network operators are also required to report in accordance with IPART's *Electricity networks reporting manual - Where Ausgrid, Endeavour Energy and Essential Energy operate outside their distribution districts*.

^{*} See ES Act, Sch 2, clause 6A; *Environmental Planning and Assessment Act 1979*, section 5.6; *Environmental Planning and Assessment Regulation 2021*, Part 8, Div 6, and the Code of Practice.

These reporting requirements state that the distribution network operators must report to IPART:

- all new network extensions outside of their respective distribution districts, and
- any disconnection or removal of existing network assets that were previously approved by IPART or were in existence before the distribution district licence condition came into effect.

The distribution network operators were compliant with this reporting requirement and licence condition. Details of extensions outside of the distribution network operators' distribution districts are shown in Table 2.6.

Table 2.6 Activity outside network operators' distribution districts

Network operator	Activity outside distribution district
Ausgrid	Two new low voltage service connections as permitted under IPART's standing Instrument of Agreement and Authorisation. In both instances, the new services have arisen out of properties with existing Ausgrid out of area connections being redeveloped into multiple dwellings.
Endeavour Energy	One new low voltage service wire connection as permitted under IPART's standing Instrument of Agreement and Authorisation.
Essential Energy	No extensions or disconnections.

Source: Ausgrid, Endeavour Energy, and Essential Energy annual distribution district reports 2022–23.

2.6 Reporting in accordance with reporting manuals

Transgrid, Ausgrid, Endeavour Energy and Essential Energy's licences require that they must prepare and submit reports in accordance with any reporting manual issued by IPART. Failure to report in accordance with IPART's reporting manuals constitutes a non-compliance with the applicable licence condition.

Transgrid, Ausgrid, Endeavour Energy and Essential Energy all failed to report one or more incidents in accordance with the timeframes stipulated in IPART's *Incident reporting - Electricity networks reporting manual*. Refer to section 4.4.3 for further details.

Ausgrid and Endeavour Energy also failed to report in accordance with IPART's reporting manuals, as described below.

2.6.1 Ausgrid and Endeavour Energy did not report in accordance with the Public Lighting Code Reporting Manual

Refer to section 2.3.4 for further details.

2.6.2 Endeavour Energy incorrectly reported the total number of claims in its customer service standards report

Endeavour Energy did not report in accordance with IPART's *Electricity Networks Reporting Manual - Distribution reliability and performance reporting*. The non-compliance was identified in an independent annual audit of Endeavour Energy's reliability and performance standards licence conditions.

The auditor identified discrepancies in the reported rolling 12 months number of claims in Endeavour Energy's quarterly reliability and performance reports for FY23. This was due to discrepancies between actuals and reported total number of claims denied and reason for claims denied. The auditor classified this as a non-material non-compliance.

Endeavour Energy will implement enhancements to internal automation and validation processes and anticipates full compliance and accurate reporting from Q1 2023–24.

2.6.3 Licenced network operators provided their Annual Performance Reports

Transgrid, Ausgrid, Endeavour Energy and Essential Energy all provided their safety management system performance reports in accordance with IPART's *Electricity networks reporting manual - Safety management system performance measurement* (SMS Reporting Manual).

During bush fire risk management audits of Ausgrid, Endeavour Energy and Essential Energy, auditors also assessed the network operators' requirement to comply and "... submit reports in accordance with any Reporting Manuals issued by the Tribunal".^y Auditors were asked to assess whether the information relating to bush fire risk controls reported in the network operators' annual performance report is complete and accurate and meets the requirements set out in the SMS Reporting Manual.

The auditors identified that each network operators' report would benefit from additional information to facilitate better understanding by some readers and identified other minor issues for Endeavour Energy and Essential Energy. Refer to see section 4.3 for full details of the auditors' findings and the network operators' responses.

2.7 Payment of Licence Fees

Ausgrid did not pay its 2022–23 annual network operator's licence fee on time due to human error.

Payment was made when IPART notified Ausgrid of the outstanding payment.

^y Licence condition 14 of the licences applicable for 2022–23.

Chapter 3

Gas network operators' compliance
with their authorisation or licence
conditions

03

The gas network operators have each been issued with either a reticulator authorisation or a distributor licence. The authorisations/licences set out their conditions of operation:

- a reticulator authorisation authorises the operation of a distribution pipeline for the purpose of conveying natural gas
- a distributor licence authorises the operation of a distribution system for the purpose of conveying gases specified in the licence (other than natural gas), such as liquid petroleum gas (LPG).^a

IPART is responsible for administering the licensing regimes for natural gas reticulation network operators and distribution network operators and monitoring compliance against authorisation and licence conditions. However, we do not otherwise regulate the safety or reliability of the gas reticulation or gas distribution networks.^b We also note that gas network operators' licences do not require the network operator to audit against licence conditions.

3.1 Gas network operators' compliance

3.1.1 Natural gas reticulators

The natural gas reticulators are required to provide an annual compliance report to IPART at the end of each financial year (by no later than 31 August). They are also required to provide their operating statistics as part of their annual compliance reports.^c

The natural gas reticulators submitted their annual compliance reports by the due date and reported no non-compliances in 2022–23. We did not identify any non-compliances with the conditions of the reticulator authorisations.

Table 3.1 provides a list natural gas reticulators and details of their 2022–23 operating statistics.

^a Distribution pipelines and distribution systems exclude any pipelines regulated under the *Pipelines Act (NSW) 1967*.

^b The Office of Energy and Climate Change is the safety regulator of the gas industry.

^c A reticulator must provide operating statistics and performance indicators as required under clause 8 of the *Reticulator's Authorisation*.

Table 3.1 Overview of natural gas reticulators and operating statistics, 2022–23

Reticulator	DPIs ^a supplied as at 30 June 2023 ^b	DPIs ^a taking less than 1 TJ ^b	DPIs ^a taking more than 1 TJ ^b	Kilometres of gas mains
Allgas Energy Pty Ltd	1,370	1,358	12	39
Australian Gas Networks (Albury) Ltd	31,203	31,134	69	805
Australian Gas Networks (NSW) Ltd	32,036	31,981	55	1,261 ^c
Central Ranges Pipeline Pty Ltd	4,459	4,425	34	275
Evoenergy ^d	21,692	21,655	37	741
Jemena Gas Networks (NSW) Ltd.	1,538,356	1,534,904	3,452	26,314
Total	1,629,116	1,621,457	3,659	29,435

a. Delivery Point Identifier.

b. Number of customers.

c. Excludes 64 km for the Tumut Valley pipeline.

d. Formerly ActewAGL Distribution Ltd.

Source: 2022–23 annual compliance reports of the natural gas reticulators.

3.1.2 Gas distributors

The distributor licence holders are:

- Elgas Limited
- Elgas Reticulation Pty Ltd
- Jemena Gas Networks (NSW) Ltd,^d and
- Origin Energy LPG Ltd.

Annual compliance reporting for gas distribution licence holders is exception-based.

Elgas Pty and Origin Energy LPG Ltd reported no non-compliances in 2022–23, and we did not identify any non-compliances with the conditions of their distributor licences. We did not receive an annual compliance report from Jemena Gas Networks for its distributor licence as reporting was exception based.

^d Jemena Gas Networks distributor's licence authorises the distribution of a mixture of natural gas and hydrogen through an existing distribution system.

Chapter 4

Electricity network operators'
compliance with the ESSNM
Regulation and other legislated
obligations

04

Since 2015, IPART has had a function to monitor licensed and non-licensed electricity network operators' compliance with legislated obligations in relation to safety management systems (including bush fire risk management) and incident reporting.^a This chapter summarises the network operators' compliance with these obligations for 2022–23.

4.1 Safety management system obligations

The *Electricity Supply (Safety and Network Management) Regulation 2014* (ESSNM Regulation) requires all electricity network operators to have a safety management systems (SMS) in place that complies with the *AS 5577–2013 Electricity network safety management systems (AS 5577)* and covers certain areas of safety risk.

Box 4.1 Requirements of AS 5577

Compliance with AS 5577 requires that a network operator:

- identify risks
- where reasonably practicable, eliminate the source of the risk, and
- where not reasonably practicable to eliminate the risk, identify treatments and controls so that residual risks are reduced to as low as reasonably practicable.

Source: AS 5577 clause 4.3.2.

^a IPART became the regulator of these safety management obligations in June 2015. The Department of Industry previously administered SMS and incident reporting obligations.

SMS obligations apply to all licensed and non-licensed network operators with electricity assets in NSW. Table 4.1 provides details of the network operators with assets in NSW.

Table 4.1 Electricity network operators with assets in NSW, 2022–23

Licences electricity network operators	
Transgrid (transmission network operator)	Ausgrid (distribution network operator)
Endeavour Energy (distribution network operator)	Essential Energy (distribution network operator)
Other NSW electricity network operators	
Sydney Trains (non-licensed distribution network operator)	Directlink (non-licensed transmission network operator)
Lord Howe Island Board (non-licensed distribution network operator)	Metro Trains Sydney (non-licensed distribution network operator)
ALTRAC - Sydney light rail (non-licensed distribution network operator)	Keolis Downer - Newcastle light rail (non-licensed distribution network operator)
Interstate electricity network operators with network assets in NSW	
Evoenergy (Australian Capital Territory)	Ausnet Services (Victoria)
Powercor (Victoria)	Energy Queensland (Queensland)

The primary objective of an electricity network operator's SMS is to assist a network operator to ensure that the design, construction, commissioning, operation and decommissioning of its network (or any part of its network) is safe. In particular, a SMS is to support:

- the safety of members of the public and people working on or near a network
- the protection of property
- the management of safety risks arising from the protection of the environment (for example, preventing bush fires that may be ignited by network assets), and
- and the loss of electricity supply.

Box 4.2 Bush fire risk management obligations

The ESSNM Regulation requires network operators to have a SMS in place that complies with AS 5577 and deals with the management of bush fire risk related to electricity lines, aerial consumers mains and other assets that are capable of starting a fire.

Source: ESSNM Regulation clause 7

4.2 SMS performance measurements

Each electricity network operator with assets in NSW is required to measure its performance against its SMS and publish the results of its performance measurements annually.^b

The licensed network operators are also required to report in accordance with the *Electricity Networks Reporting Manual – Safety Management Systems Reporting* (SMS Reporting Manual) by 31 October each year.

We undertook a high-level assessment of the reports by:

- comparing the number of completed maintenance tasks against the number that were planned for the year
- comparing the failure rates against 5-year averages, and
- using the experience of IPART's engineers.

Based on our analysis of the SMS performance reports:

- for safety performance, Ausgrid and Endeavour Energy reported some performance measures that appear to be abnormal. We sought clarification on certain safety performance measures. Ausgrid and Endeavour Energy provided responses which we consider addressed our concerns.
- for bush fire preparedness, Ausgrid, Endeavour Energy and Essential Energy reported varying volumes of outstanding vegetation and/or asset tasks. We wrote to Ausgrid, Endeavour Energy and Essential Energy seeking updated information on their bush fire preparedness. Transgrid also reported some outstanding tasks but we did not have any significant concerns with its bush fire preparedness. Refer to section 4.2.1 for further details.
- for non-licensed network operators, we did not identify any emerging safety risks and did not have any significant concerns against their SMS performance and preparedness for the bush fire season.

Interstate network operators

Four interstate network operators have a small number of electricity distribution and transmission assets in NSW. We maintained the previous exemptions granted to Energy Queensland, Evoenergy, AusNet and Powercor from publishing their annual SMS performance because they:

- report to regulatory authorities in their own jurisdiction, and IPART is seeking to minimise any unnecessary regulatory burden, and
- have minimal operations within NSW.

However, we required Energy Queensland, AusNet, Evoenergy and Powercor to provide annual bush fire preparedness reports to IPART by 31 October each year.

^b The Tribunal may however exempt network operators from reporting and publishing requirements under clause 10(4) of the *ESSNM Regulation*. The Energy Networks Regulation Committee (ENR Committee), as a delegate of the Tribunal, provided exemptions to Lord Howe Island Board, ALTRAC, Keolis Downer and the interstate network operators from complying with reporting and publishing requirements under clauses 10(2) and 10(3) of the *ESSNM Regulation*.


We also monitor the compliance of the interstate network operators' SMS with the requirements of the ESSNM Regulation by reviewing audits and reports prepared for their jurisdictional regulator (Queensland and Australian Capital Territory), or by reviewing annual safety performance reports issued by Energy Safe Victoria. We also review any serious electricity works accidents reported involving their NSW electricity assets.^c

4.2.1 Bush fire preparedness reports

In accordance with IPART's SMS Reporting Manual, Transgrid, Ausgrid, Endeavour Energy, and Essential Energy submitted reports by 31 October 2022 detailing their preparedness for the 2022–23 bush fire season.

All the interstate network operators, except Energy Queensland, also submitted bush fire preparedness reports for the 2022–23 bush fire season. Energy Queensland provided its bush fire risk management plan containing high-level policy and procedural information.

In the bush fire preparedness reports, network operators reported on their targeted pre summer bush fire inspections which identify asset and vegetation defects that could impact the network during the bush fire season. Network operators also reported on the progress of managing these asset and vegetation defects.



Some network operators reported outstanding inspections and unrectified defects due to wet weather conditions and access difficulties.

Ausgrid

Ausgrid reported no outstanding pre-summer bush fire inspections, private main inspections and asset tasks. Ausgrid reported 7 outstanding vegetation tasks related to hazard trees in bush fire prone land. In response to IPART's request for a progress update, Ausgrid reported completion of the outstanding tasks in November 2022.

^c Interstate network operators did not report any serious electricity works accidents reported involving their NSW electricity assets during 2022–23.

Endeavour Energy

Endeavour Energy reported no outstanding private main inspections, asset tasks and hazard tree vegetation tasks. However, Endeavour Energy reported 0.3% outstanding pre-summer bush fire inspections and a significant number of outstanding vegetation tasks. Endeavour Energy indicated that wet weather had prevented rectification of the outstanding tasks.

In response to IPART's request for a progress update, Endeavour Energy reported completion of all pre-summer bush fire inspections as of 30 November 2022. In addition, Endeavour Energy noted that any outstanding vegetation tasks were inspected on a weekly basis to confirm they remained inaccessible, continued to pose a low risk of fire start, and were remediated as soon as access was possible.

Essential Energy

Essential Energy reported no outstanding pre-summer bush fire inspections, 11.7% outstanding private main inspections, 28.3% outstanding asset tasks and 20% outstanding vegetation tasks. Essential Energy stated that tasks were outstanding due wet weather and access constraints. Wet weather conditions also led to rapid vegetation growth and access difficulties slowed progress and increased workload, resulting in a vegetation treatment task backlog. Although we acknowledged the challenges reported by Essential Energy affecting its vegetation management program we were concerned about the possible implications of the outstanding tasks. We therefore sought progress updates from Essential Energy to ensure they were continuing to focusing on reducing the backlog of inspections and remediation tasks.

In response, Essential Energy reported:

- an improved position in completing outstanding private main inspections as more poles were inspected in December 2022
- progress in completing asset tasks due to improved access conditions, and
- fewer outstanding tasks in fire risk areas.

In addition, Essential Energy reported a consistent reduction in the number of outstanding vegetation tasks, between 30 September 2022 and 24 January 2023, across all encroachment categories.

Transgrid

Transgrid reported 10.7% outstanding pre-summer bush fire inspections. The outstanding inspections were associated with non-summer critical climbing inspections or access to many areas restricted by wet ground and assessed as low bush fire risk.

Transgrid also reported 1.6% outstanding asset tasks and no outstanding vegetation tasks. Transgrid stated that work orders for the outstanding asset tasks were scheduled in a prioritised manner to ensure high bush fire risk works were completed first.

Other network operators

We did not require a bush fire preparedness report from Lord Howe Island Board, Metro Trains Sydney, ALTRAC and Keolis Downer for the 2022–23 bush fire season because of the low-risk of bush fire ignition due to the design of these networks and the limited environments in which they operate.

We received bush fire preparedness reports from Sydney Trains, AusNet Services, Powercor, Direct Link and Evoenergy.

The bush fire preparedness reports provided by these network operators did not present any significant concerns as detailed below:

- **Sydney Trains** completed all its pre-summer target bush fire inspections of its poles in preparation for the 2022–23 bush fire season. Sydney Trains reported 7 outstanding medium-to-high risk vegetation defects and later provided an update to IPART noting that the outstanding vegetation defects were completed on 30 October 2022.
- **AusNet Services** performed all necessary vegetation inspections for its distribution and transmission easements in NSW, performed majority of necessary asset inspections for its distribution assets, and scheduled asset inspections of its transmission assets to be completed by 7 October 2022. Prior to the commencement of the bush fire danger period, AusNet completed all necessary rectification works to address defects found. Some open vegetation tasks of lower priority were scheduled to be completed in late 2022. AusNet later updated IPART noting that, as of January 2023, all necessary asset inspections were completed.
- **Powercor** reported completion of all vegetation and asset inspections, and all maintenance items identified during the inspection of the assets were being managed in accordance with priority policy timeframes.
- **Direct Link** did not report any events or incidents associated with bush fire risk management.
- **Evoenergy** performed all necessary asset and vegetation inspections and completed all necessary rectification works to address any defects found, prior to the commencement of the bush fire danger period. No hazardous trees affecting the NSW portion of the network were identified.

Energy Queensland

Energy Queensland did not submit a bush fire preparedness report to IPART and instead submitted its *Bushfire Risk Management Plan 2022–24* after the due date for the annual bush fire preparedness report. The document contained high-level policy and procedural information but did not provide information on Energy Queensland's preparedness for the 2022–23 bush fire season. Energy Queensland also advised IPART that final works on customer defects on bush fire prone land in NSW, which were identified in previous years, were completed on 13 October 2022.

The Secretariat sought further information from Energy Queensland on new inspections carried out on private consumers mains ahead of the 2022–23 bush fire season and the outcomes from those inspections. Energy Queensland responded with high-level information on bush fire preparedness activities for its NSW assets. However, the information still did not provide sufficient information for IPART to assess the adequacy of Energy Queensland's bush fire preparedness, nor the bush fire risk of its assets in NSW.

We wrote to Energy Queensland drawing attention to the lack of specificity in its bush fire preparedness information and that it failed to meet reporting timeframes. We drew attention to the relevant IPART reporting manual to better clarify expectations and sought further discussions with Energy Queensland staff to clarify reporting requirements in preparation for the 2023–24 bush fire season.

We expect Energy Queensland to submit its bush fire preparedness report this year in accordance with the relevant IPART reporting manual. This will allow IPART to adequately assess Energy Queensland's bush fire preparedness activities for its NSW assets prior to the 2023–24 bush fire season. If we do not receive adequate information from Energy Queensland this year, the Energy Networks Regulation Committee (ENR Committee) will consider what further compliance action is required. We will provide an update on this matter in IPART's annual compliance report to the Minister next year.

4.3 Bush fire risk management audits of network operators

In 2021 we directed audits of the bush fire risk management component of all licensed network operators Electricity Network Safety Management System (ENSMS). The auditors found that the licensed electricity network operators had reasonable systems in place to manage bush fire risks on their networks. As we did not expect their systems to change significantly during a 12-month period, we did not consider it necessary to propose another full audit of the bush fire risk management component of the ENSMS in 2022–23.

We therefore directed bush fire risk management audits of Ausgrid, Endeavour Energy and Essential Energy which focused on specific aspects of their ENSMS. The audits assessed whether the network operators were managing the risk of fall-in vegetation hazards in the vicinity of their network assets to as low as reasonably practicable (ALARP). The audits specifically assessed the network operators' bush fire Formal Safety Assessment (FSA) and risk treatments relating to fall-in vegetation hazards.

Other matters assessed in the audits were:

- network operators' responses to the:
 - [General Inquiry](#) report into the fire at Reedy Swamp Tarraganda Bega/Tathra (Tathra Inquiry Report)
 - reports related to [Victoria's Powerline Bushfire Safety Program](#)
- rectification of non-compliances identified by previous ENSMS audits
- accuracy and readability of the 2022 bush fire preparedness reports submitted to IPART.

As these audits had a targeted scope, auditors were able to spend more time assessing each of the scope items and reviewing supporting evidence.

The audits were conducted between December 2022 and March 2023.

We did not direct an audit of Transgrid because:

- many of Transgrid's transmission towers and poles are located in wide easements and are often above the tree line. Due to the higher transmission voltages, larger clearances are maintained from vegetation for all of its power lines. We therefore consider that bush fire risks from transmission assets are less than those from distribution assets
- Transgrid had no non-compliances in its previous bush fire audit
- some recommendations and findings in the Tathra Inquiry Report and the reports related to Victoria's powerline bush fire safety program do not apply to Transgrid's transmission network.

4.3.1 Ausgrid's bush fire risk management audit

Ausgrid's auditor noted:

Ausgrid has carried out a significant amount of work to improve its management of bush fire risk since the previous audit of its bush fire FSA. The field inspection provided assurance that bush fire risk management activities are being implemented and the risk of a bush fire being initiated by Ausgrid's network is well managed.

The auditor identified the following non-compliances for Ausgrid:

- 2 material non-compliances with Ausgrid's bush fire FSA and risk treatments
- 1 non-material non-compliance related to the accuracy and readability of the 2022 bush fire preparedness reports.

Although the auditor found Ausgrid's bush fire FSA non-compliant in relation to fall-in vegetation hazards, it is evident from other parts of the audit findings that Ausgrid demonstrated it is generally managing the risk of its electricity network causing bush fires to ALARP.

Refer to Table 4.2 and Table 4.4 for further details of non-compliances and Ausgrid's responses.

Table 4.2 Summary of non-compliances and Ausgrid's response

Auditor's description of non-compliance	Ausgrid's proposed rectification action
<p>Non-compliance 1 - Material Ausgrid have not adequately identified all the causes and contributing factors that may result in fall-in vegetation hazards contacting the network, specifically inadequate training.</p>	<p>Ausgrid has undertaken significant work in reviewing training for identifying fall-in vegetation risk however, the auditor felt this was not sufficiently referenced. Ausgrid does not agree with all aspects of the auditor's recommended remediation action. A more sustainable and effective approach is to undertake a review and improve the ENSMS Framework and Formal Safety Assessment processes to detail how Ausgrid manages network safety risks. For example, including reference to our approach to manage competency with workers for risks such as fall-in vegetation.</p>
<p>Non-compliance 2 - Material Ausgrid have not adequately evaluated the risk associated with fall-in vegetation hazards contacting the network, nor determined that this risk is being managed so far as is reasonably practicable (SFAIRP).</p>	<p>Ausgrid does not agree with all aspects of the auditor's recommendation. This non-compliance is also addressed in the rectification plan for non-compliance 1 above.</p>
<p>Non-compliance 3 - Non-Material Ausgrid's Annual ENSMS Performance Report does not contain sufficient contextual information to enable stakeholders who may not have specialist knowledge, such as customers and members of the public, to understand the information.</p>	<p>Ausgrid will engage with its internal Customer Communications team to benchmark and recommend improvements to the format and review process of its Annual ENSMS Performance Measurement Report. These recommendations will be applied to improve the wider context of the reported information from the perspective of customer and public. The outcomes of the review will be incorporated into future publications of the Annual ENSMS Performance Measurement Report and its accompanying Basis of Preparation document.</p>

After consideration of the audit report and Ausgrid's proposed rectification plan, the ENR Committee sought an update from Ausgrid on its rectification plan detailing:

1. Ausgrid's progress in reviewing and improving the ENSMS Framework and FSA, and
2. actions identified by the review to address the material non-compliances identified by the auditor.

Ausgrid responded with an initial update on its rectification plan, and later provided a further update (October 2023), which indicated that it has effectively addressed the non-compliances identified in Table 4.2 above. Ausgrid's rectification of non-compliances from the previous bush fire risk management audit will be tested in an upcoming audit and will be reported in next year's report to the Minister.

4.3.2 Endeavour Energy's bush fire risk management audit

Endeavour Energy's auditor noted:

The auditor acknowledges the effort of Endeavour Energy staff who constructively participated in the audit with a positive focus on evidencing its efforts in improving its ENSMS. The efforts of staff to further enhance the Bushfire FSA by improving the visibility that potential new controls such as Rapid Earth Fault Current Limiter technology have been assessed and the development of structured procedures to assist in providing improved information in the annual performance report are key achievements to recognise.

The information systems and supporting business documentation, such as the Basis of Preparation, used in compiling the Annual ENSMS Performance Report are considered substantive.

The field inspection observed that bush fire risk management activities are implemented and that the risk of a bush fire being initiated by Endeavour Energy's network is well managed.

The auditor identified several non-compliances for Endeavour Energy including:

- 1 material non-compliance relating to the rectification of 5 previous non-material non-compliances
- 3 non-material non-compliances with Endeavour Energy's bush fire FSA and risk treatments
- 2 non-material non-compliances related to the accuracy and readability of the 2022 bush fire preparedness reports.

Refer to Table 4.3 for further details of non-compliances and Endeavour Energy's response.

Table 4.3 Summary of non-compliances and Endeavour Energy's response

Auditor's description of non-compliance	Endeavour Energy's proposed rectification action
<p>Non-compliance 1 – Material Endeavour Energy has not satisfactorily amended and implemented its ENSMS, nor has there been reasonable progress towards amending and implementing its ENSMS, to address the non-compliances identified in the <i>Endeavour Energy ENSMS Audit - Bushfire Risk Management audit report</i> by AMCL, dated 23 March 2022; specifically in relation to 4 (of) 5 non-compliances. Endeavour Energy's progress against the rectification plan and timeframes that Endeavour Energy provided to IPART on 25 March 2022 is not adequate.</p>	<p>a) Review FSA & risk register format and update where appropriate to address recommendations. b) Fire start risk review to be performed to asset group level & included in 2023 update of FSA & Risk Register.</p>
<p>Non-compliance 2 – Non-Material Endeavour Energy has not identified competence of persons scoping vegetation management for fall-in hazards as a foreseeable risk in its FSA or Risk register.</p>	<p>Review risk register and update as required to clearly identify controls that rely on worker competence for effectiveness e.g. Vegetation scoping, vegetation control, overhead line inspection and ground line inspection.</p>
<p>Non-compliance 3 – Non-Material Endeavour Energy's supervisory staff perform site inspections and safety observations. However, we did not observe assurance activities for the competence of vegetation personnel. The issue appears broader than assurance of vegetation personnel competency, in that there does not appear to be a systematic audit plan for the ENSMS holistically.</p>	<p>a) Implement annual refresher & quality feedback debrief with vegetation scopers and Tree Management Officers. b) Annual audit plan to be presented to the ENSMS committee each year, with ENSMS related audit reports shared for information of the committee.</p>
<p>Non-compliance 4 – Non-Material The tree observed during the field visit presented a fall-in and/or grow-in risk. Evidence could not be provided that a risk assessment had been undertaken. It remains unclear whether the tree was not risk assessed, or whether it was but it was not recorded. Whilst Endeavour Energy's procedures may not require a visual tree assessment to be recorded if it is determined it is not a fall-in hazard, if it is considered low risk, then this assessment needs to be stored appropriately.</p>	<p>Consider amending procedures to address assessment and record keeping for objects inside clearance.</p>
<p>Non-compliance 5 – Non-Material Endeavour Energy's Annual ENSMS Performance Report does not contain sufficient contextual information to enable stakeholders who may not have specialist knowledge, such as customers and members of the public, to understand the information.</p>	<p>Annual performance report drafting process to include review by internal communications team to improve readability.</p>

Auditor's description of non-compliance	Endeavour Energy's proposed rectification action
<p>Non-compliance 6 – Non-Material Endeavour Energy was unable to furnish samples of data to verify the figures reported in its Annual ENSMS Performance Report.</p>	<p>Annual performance report preparation process to include formal section review and endorsement of content by SME/process owner.</p>

We issued a direction to Endeavour Energy to modify its ENSMS

After consideration of the audit report and Endeavour Energy's proposed rectification plan, and in accordance with our *Compliance and Enforcement Policy*, the ENR Committee issue a proposed direction to Endeavour Energy to modify its ENSMS. The proposed direction to Endeavour Energy to modify its ENSMS applied only to the 4 non-compliances from the 2022 bush fire audit that it had failed to adequately rectify. The ENR Committee also sought additional information on Endeavour Energy's proposed rectification actions.

Endeavour Energy provided a revised rectification plan and did not object to the proposed direction. The ENR Committee issued Endeavour Energy a direction under section 13 of the ESSNM Regulation in July 2023 to rectify the 4 outstanding non-compliances from the 2022 audit. Endeavour Energy must comply with any direction given to, or requirement imposed on it under clause 13 of the ESSNM Regulation.

Rectification of the non-compliances will be tested in an upcoming audit.

4.3.3 Essential Energy's bush fire risk management audit

Essential Energy's auditor noted:

Based on the evidence sighted and on discussions during the field audit with the personnel responsible for managing vegetation and asset defect rectifications, in our opinion, Essential Energy's preparations for the bush fire danger period were as reported and are being implemented as planned for in the ENSMS.

The auditor also noted that based on the evidence sighted during the field visit, discussions with the personnel responsible for managing bush fire, and review of the documentation provided as part of the audit, the auditor was of the opinion that Essential Energy has the controls and systems in place to manage bush fire risk to ALARP.

The auditor also identified several non-compliances for Essential Energy including:

- 4 non-material non-compliances with Essential Energy's bush fire FSA and risk treatments
- 3 non-compliances related to the accuracy and readability of the 2022 bush fire preparedness reports.

The auditor noted that whilst the non-compliances have been identified, they do not impact on the SMS achieving its primary objective with respect to bush fire safety. The auditor also found that Essential Energy's SMS is considered appropriate and is being properly implemented.

Refer to Table 4.4 for further details of non-compliances and Essential Energy's response.

Table 4.4 Summary of non-compliances and Essential Energy's response

Auditor's description of non-compliance	Essential Energy's proposed rectification action
<p>Non-compliance 1 – Non-Material The auditor found that the 'Training and Competence' control in the FSA, which was identified as a critical control, was rated as being 'Satisfactory'. The auditor noted the FSA stated that, an effectiveness rating of satisfactory or below is indicative of weakness in the control effectiveness and the implementation of a Treatment Action Plan is required to move towards a level of SFAIRP. A Treatment Action Plan was not presented.</p>	<p>Essential Energy stated in its rectification plan that it will implement the auditor's recommendation and update its bush fire FSA to describe the reasons for the 'Satisfactory' rating and develop a Treatment Action Plan to address any gaps.</p>
<p>Non-compliance 2 – Non-Material Essential Energy stated in its Annual Performance Report that there has been an increase in fall-in and blow in interruptions year on year from FY2020 due to soft ground and high winds associated with storm events. The auditor found that Essential Energy had not incorporated this finding into its Bushfire FSA despite having identified a new hazard.</p>	<p>Essential Energy noted that:</p> <ol style="list-style-type: none"> 1 Fall-in vegetation as a result of water-logged ground affecting structural stability was unlikely to result in a bush fire being initiated due to the inherent wet conditions. 2 Vegetation affected by water-logged ground does not necessarily fall under the definition of visually defective vegetation and they cannot be "visually identified from the perspective of the network asset <p>Essential Energy stated in its rectification plan that it will implement the auditor's recommendation and incorporate the fall-in risk arising from vegetation affected by water-logged ground and consider practicable controls to manage the risk in its bush fire FSA.</p>
<p>Non-compliance 3 – Non-Material The auditor found that both Essential Energy's Bushfire FSA and detailed bowtie lack a clear line-of-sight for the risks posed by fall-in vegetation hazards. This makes it difficult to trace the relevant controls to prevent bush fires arising from fall-in vegetation. Therefore, the auditor was unable to come to a conclusion as to whether the risk is reduced to SFAIRP.</p>	<p>Essential Energy stated in its rectification plan that it will implement the auditor's recommendation and update the bush fire FSA to provide a clear line-of-sight between fall-in vegetation hazards and the risk controls.</p>
<p>Non-compliance 4 – Non-Material The auditor found that Essential Energy lacks a process by which to risk assess visually defective vegetation that has not been rectified within required timeframes, and do not have a system for prioritising outstanding fall-in tasks, even though the risks are likely to vary.</p>	<p>Essential Energy stated in its rectification plan that it will implement the auditor's recommendation and implement a process to risk assess fall-in vegetation hazards that become overdue.</p>
<p>Non-compliance 5 – Non-Material The auditor identified a number of data inaccuracies reported in Essential Energy's Annual Performance Report. The auditor was informed this was due to Essential Energy not reporting to IPART near misses that occur behind the customer meter, leading to less incidents being reported to IPART than those presented in the Annual Performance Report. Based on the 'significant near misses' description in IPART's incident reporting manual, the auditor is of the view that Essential Energy should be reporting all near misses that it is aware of to IPART. The auditor also identified 2 other data inaccuracies in Essential Energy's annual performance report.</p>	<p>Essential Energy stated in its rectification plan that it will implement the auditor's recommendation and implement improved governance and assurance of the data that informs the annual ENSMS performance and bush fire preparedness reports.</p>
<p>Non-compliance 6 – Non-Material The auditor identified sections of the Annual Performance Report that would benefit from additional information/explanatory text to facilitate understanding by readers.</p>	<p>Essential Energy stated in its rectification plan that it will implement the auditor's recommendation and provide additional commentary and diagrams to help facilitate the understanding of the report.</p>

Auditor's description of non-compliance	Essential Energy's proposed rectification action
<p>Non-compliance 7 – Non-Material The auditor identified a data reporting error and a data omission error in Essential Energy's Basis of Preparation report. This indicated to the auditor that Essential Energy's business procedures to compile and report data are not robust.</p>	<p>Essential Energy stated in its rectification plan that it will implement the auditor's recommendation and implement improved governance and assurance.</p>

After consideration of the audit report and Essential Energy's proposed rectification plan, the ENR Committee sought updates from Essential Energy on its rectification action for Non-compliance 4 to allow the ENR Committee to monitor progress in rectifying this non-compliance.

Essential Energy's rectification of non-compliances from the previous bush fire risk management audit will be tested in an upcoming audit and will be reported in next year's report to the Minister.

4.4 Incident Reporting

Under section 63R of the *Electricity Supply Act 1995* (ES Act), all network operators are required to report serious electricity works accidents (SEWAs) to IPART within 7 days of them occurring. SEWAs are defined as accidents "in which electricity works are involved, and as a consequence of which a person dies or suffers permanent disability, is hospitalised, receives treatment from a health practitioner or is unable to attend work for any period of time".^d

Licensed electricity network operators are also required to comply with IPART's *Incident reporting - Electricity networks reporting manual* (Incident Reporting Manual) as a condition of their operating licence.^e The Incident Reporting Manual defines the incident reporting requirements. In addition to SEWAs, the Incident Reporting Manual also requires licensed electricity network operators to report to IPART:

- reliability and power quality incidents, and
- significant near miss incidents.^f

Figure 4.1 and Figure 4.2 provides an overview of incidents reported to IPART by the licensed electricity network operators in 2022–23 in accordance with the Incident Reporting Manual.

4.4.1 Significant safety incidents

In 2022–23, the electricity network operators reported one incident that resulted in loss of life.^g Details of the incident is provided in Table 4.5.

No other incidents were reported to have occurred that resulted in permanent disability, permanent life changing injuries, or life threatening injuries.

^d Dictionary to the ES Act.

^e Clause 14 of Ausgrid, Endeavour Energy and Essential Energy and clause 11 of Transgrid's licences applicable for 2022–23.

^f Electrical shocks or electrical burns originating from network assets where there has been no medical treatment, or only diagnostic monitoring has been carried out (e.g., ECG). Also includes electric shock or electrical burns originating from network assets that cause fatalities only to household pets.

^g Excluding incidents involving motor vehicles.

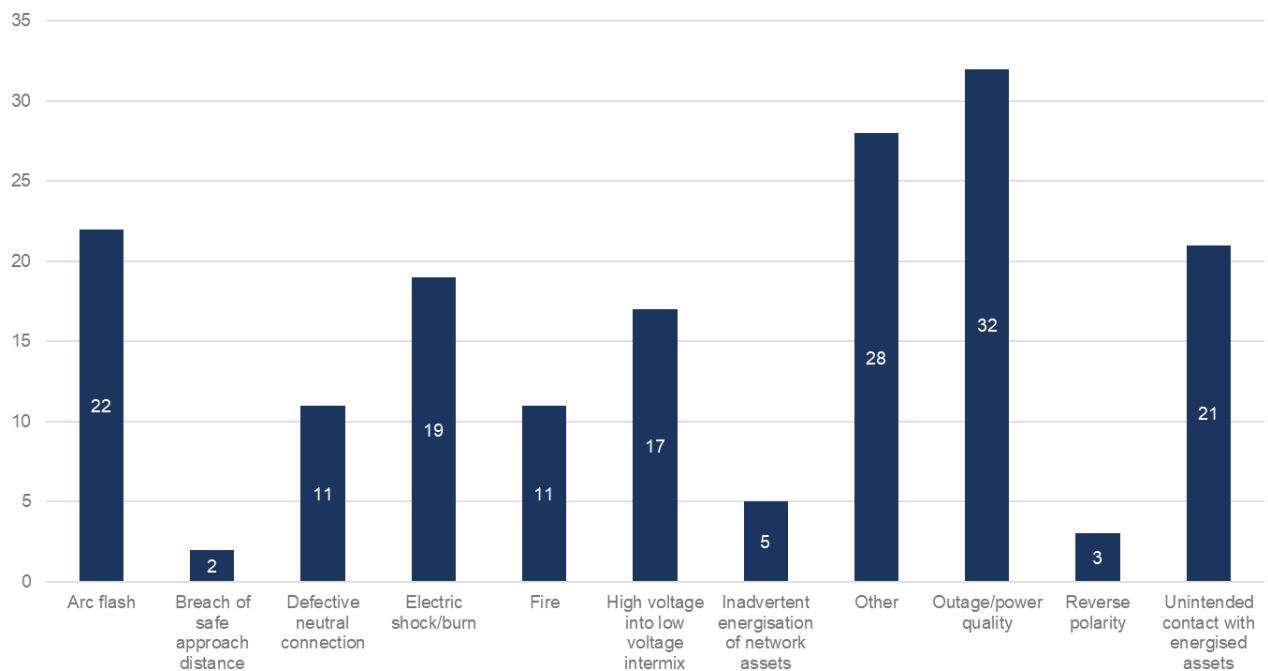
Table 4.5 Incidents resulting in loss of life, 2022–23

Parties involved	Type of incident	Incident details
Public workers	Other incident affecting people	<ul style="list-style-type: none"> Public worker flying a Gyrocopter and undertaking mustering activities contacted the network. Fatality to the pilot from impact. Damage to the network. Aerial marker has now been installed at incident location to increase visibility of network for future activities.

4.4.2 Types of incidents reported, and parties affected

In 2022–23, 171 incidents were reported to IPART by the electricity network operators.^h Figure 4.1 shows the types of incidents that occurred, and shows the parties that were affected by these incidents.

Figure 4.1 Types of incidents reported



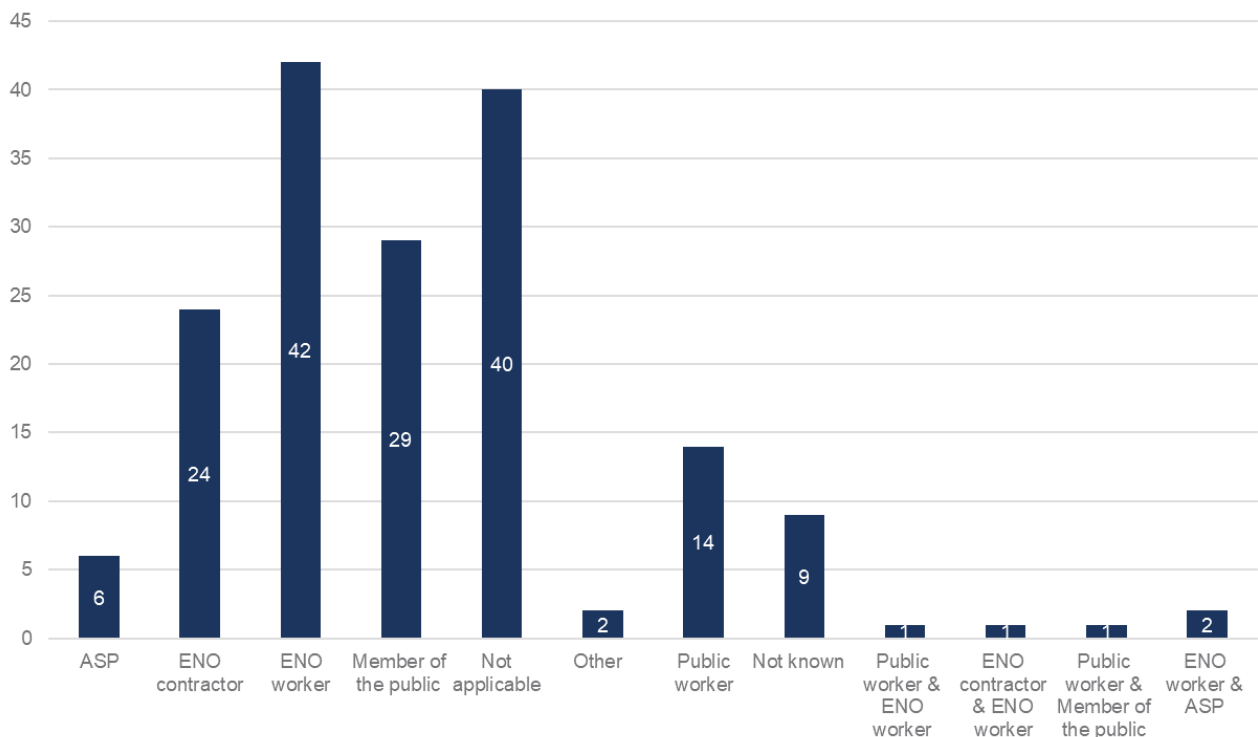
Note: 'Breach of safe approach distance' and 'Unintended contact with energised assets' by network operator employee or contractor.

Source: Stage 1 incident reports submitted to IPART for incidents that occurred in 2022–23.

^h Includes Category 3 incidents which are minor SEWAs incidents that do not meet the Category 1 or Category 2 incident categories in our Incident Reporting Manual. Example of a Category 3 incident:

- ENO worker was working on the network with a knife when the knife slipped and cut his hand. The worker was transported to a medical facility for treatment and received stitches.

Figure 4.2 Parties affected by incidents in 2022–23



Note: Incidents marked 'Not applicable' are those caused by animals or the weather.

Note: Electricity network operator (ENO)

Source: Stage 1 incident reports submitted to IPART for incidents that occurred in 2022–23.

The highest number of safety incidents reported include arc flashes, and unintended contact with energised assets. A summary of the networks' proposed mitigative and preventive measures for these incidents are detailed below.

Arc flashes

- Involved workers temporarily suspended from working on the network (pending investigation) and returned to active duties only after disciplinary actions, refresher trainings and competency assessments.
- Reviewed procedures and processes from opportunities identified in post incident reviews.
- Safety briefs developed and distributed to communicate the awareness of possible hazards identified from incidents.
- Reminders issued to all Field Operating teams on the importance of wearing the required and approved PPE when operating, testing/measuring or completing visual inspections on or near live exposed low voltage mains and apparatus as per the Electrical Safety Rules.
- Continued public safety plan with stakeholders, focussing on plant and equipment use in proximity to powerlines, across traditional media platforms and social media campaigns.
- Public Safety education and awareness materials updated to include certain incidents as case studies to show the extent of arc flash energy and contact with electrical infrastructure.
- Targeted communication campaign for regional areas.

Unintended contact with energised assets (by network operator employee or contractor)

- Involved workers from the contracted company were stood down until incident investigation was completed and clearance to return to work approved by network operator. Verification of competency performed on crew members involved.
- Contracted company conducted toolbox talk with workers to outline the ability to identify hazards and the importance of the positioning of the Observer.
- Network operator reviewed the Contractor's investigation findings and accepted corrective actions proposed. Network operator will continue to monitor the performance of involved contractors through assurance activities.
- Review of existing arrangements with contract partner to improve controls when moving equipment to site and/or working on site.

4.4.3 Compliance with incident reporting obligations

Network operators mostly reported electricity works incidentsⁱ in accordance with the legal framework and our [Incident Reporting Manual](#) requirements. In a number of instances, they failed to report within the time required, but were generally compliant with our other reporting requirements.

Table 4.6 Incident reports submitted outside reporting timeframes, 2022–23

Network operator	Number of reports outside reporting timeframes ^a
Transgrid	3
Ausgrid	3
Endeavour Energy	6
Essential Energy	11

a. Most incident types require multiple reports to present information at different stages of investigation. The total number of reports therefore exceeds the number of incidents.

Source: Network operators' incident reports and Annual Compliance Reports.

Most of the late reports were due to mitigating circumstances. In some cases, the network operator may not have been initially aware of the incident. Some of the reasons provided by network operators for submitting incident reports outside of reporting timeframes are summarised below:

- very minor safety incidents (non-reportable) where an injured person does not initially seek medical treatment, but later receives medical treatment after their injury worsens
- incorrect categorisation of incident identified during assurance checks
- weather conditions caused delays in restoration, incident completion and calculation of major event day outage calculations
- restructuring, resourcing constraints and/or new staff not up to speed
- process and human errors.

ⁱ We use information provided by SafeWork NSW to check that incidents that are reportable to SafeWork are also reported to IPART where they meet our reporting requirements.

Chapter 5 >>

Our compliance approach and activities

05

We monitor the electricity network operators' compliance with their obligations using a risk-based reporting and auditing regime which is detailed in our [Compliance and Enforcement Policy](#). We apply a risk-based regulatory model which allows us to make the best use of our resources to minimise excessive costs to ourselves and the regulated entities, and therefore to the people of NSW.^j

In some cases, the regulatory framework restricts our ability to apply a risk-based approach in full – for example, where the legislation mandates the frequency or scope of an audit, reporting, or other compliance action. In those cases, we apply the risk-based approach where we can, such as when determining the scope of an audit.

We focus our efforts on informing, educating and supporting the regulated entities to comply with their obligations, and holding them to account by monitoring compliance through reporting and our risk-based audit process.

We consider the materiality of any non-compliance when determining what enforcement actions might be appropriate. Our enforcement actions may include issuing directions or enforceable undertakings or imposing a monetary penalty.

We also undertake additional activities to enhance our approach and increase our effectiveness. We consider that this is important to maintain visibility of, and address, issues that are pertinent to our role.

During 2022–23, we:

- submitted our [Review of electricity network operators' licences – Final Report](#) (September 2022) to the previous Minister for Energy and provided revised draft licences for consideration.^k The new network operators' licences were issued by the current Minister in September 2023.
- directed an audit of Endeavour Energy's compliance with the public lighting code and other matters. Refer to Section 2.3.3 for further details
- directed bush fire risk management audits of Ausgrid, Essential Energy and Endeavour Energy to assess their preparation for the 2022–23 bush fire season. Refer to Section 4.3 for further details on the audit outcomes
- directed bush fire risk management audits of Ausgrid, Essential Energy, Endeavour Energy and Sydney Trains to assess their preparation for the 2023–24 bush fire season^l
- amended the following reporting manuals:
 - [Annual compliance reporting - Electricity networks reporting manual](#) to clarify reporting requirements and provide a pro forma that the licence holders can use to report on their compliance with licence conditions for the financial year
 - [Critical infrastructure licence conditions - Electricity networks reporting manual](#) as part of a periodic update which included minor wording and formatting changes for clarity and aesthetics

^j Refer to Figure 3.1 in our [Compliance and Enforcement Policy](#) for details of our risk matrix.

^k The Minister for Energy directed IPART to conduct a review of the licences in force under the [Electricity Supply Act 1995](#). This included the licences held by Ausgrid, Endeavour Energy, Essential Energy and Transgrid. The review was conducted to assess whether the existing licences remained appropriate by ensuring that the licences reflect current public expectations and regulatory practice.

^l Final audit reports due in February 2024.

- *Safety management system performance measurement - Electricity networks reporting manual* to add reporting requirements for stand-alone power systems and update the reporting requirement regarding directions for bush fire risk mitigation work on private land
- *Incident reporting - Electricity networks reporting manual* to clarify and add new reporting requirements and make minor amendments to improve readability.





During 2022–23, we identified some emergent potential gaps in the regulatory framework applicable to licencing and safety of NSW electricity networks. The current legislative framework for the electrical supply system was put in place before the electricity supply system evolved to include the increasing number of unlicensed electricity power lines and associated equipment that is required for the connection of renewable generators and storage devices. These issues suggest that a review of the current regulatory framework for licensing and safety could be timely.

5.1 We published our 2023–24 Compliance Priorities

One of our strategic priorities is regulatory excellence. In pursuit of this, we have published our *2023–24 Compliance Priorities*.

Our anticipated compliance and enforcement priorities aim to draw attention to those areas that we see as the greatest risks. As a risk-based regulator, we expect to allocate compliance and enforcement resources towards these areas as a priority. However, we continue to also regulate other areas actively and react to events as they occur.

Our 2023–24 Compliance Priorities are:

 <p>Bush fire risk mitigation Field inspections</p> <p>Bush fire risk continues to present the greatest consequence for harm to the people of NSW</p>	 <p>Critical infrastructure Licence condition compliance</p> <p>Critical infrastructure conditions aim to address cyber security risk and overseas threats to electricity infrastructure</p>	 <p>Climate change adaptation Loss of supply risk</p> <p>Climate change is driving long term changes which threaten safety and resilience of supply to dependent communities</p>	 <p>Public lighting Licence condition compliance</p> <p>Public lighting is provided by the licensed distributors on behalf of the road authorities and mitigates public safety risks on our roads</p>
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5.2 Our mission and regulatory outcomes

We consider our mission and regulatory outcomes in conjunction with our compliance priorities, when deciding how we determine our compliance approach.

5.2.1 Our mission

For the people of NSW to benefit from safe, reliable and efficient energy networks.

5.2.2 Our regulatory outcomes

These outcomes are measurable and achievable. They enable us to demonstrate how our initiatives contribute to outcomes over time and they improve transparency and accountability to stakeholders.

- 01 Minimise safety incidents to the public and workers on or near the network by holding electricity network operators accountable for reducing safety risks to as low as reasonably practicable.
- 02 To achieve licenced electricity network operators' compliance with critical infrastructure licence conditions.
- 03 To develop a culture where electricity network operators proactively comply with all regulatory and licence obligations and achieve timely rectification of non-compliances.
- 04 Ensure that our regulatory activities are proportionate to manage the risks identified and outcomes sought.
- 05 To be recognised as an effective regulator through best practice regulation and engaging with stakeholders.
- 06 Ensure network operators understand climate change risk and are positioned to proactively and efficiently manage it.

5.3 Our engagement with other government departments and regulatory bodies

We continued to develop our working relationships with other NSW Government departments and regulators, as well as interstate and Commonwealth agencies to ensure effective and efficient regulation.

In particular, we worked closely with the Office of Energy and Climate Change (OECC), SafeWork NSW and the Cyber and Infrastructure Security Centre within the Commonwealth Department of Home Affairs. We also collaborated with:

- EnergyCo to discuss potential licencing arrangements regarding the renewable energy zones
- the Crown Lands, Forestry Corporation and NSW Rural Fire Service to consult on the audit scope of the NSW distribution network operators and Sydney Trains' bush fire risk management audits (in preparation for the 2023–24 bush fire season)
- the ACT Utilities Technical Regulator to share our experiences and learnings in relation to our Energy Networks Regulation activities, including current and emerging issues of concern
- the Southern Sydney Regional Organisation of Councils to discuss the draft Public Lighting Code and public lighting performance matters
- the Office of the National Rail Safety Regulator (ONRSR) to obtain feedback on the current and emerging performance of rail operators which we also regulate as network operators and discussed new rail works expanding operators' electrical networks. ONRSR and IPART also meet quarterly to discuss current and emerging issues with mutual regulated entities
- the Electrical Regulatory Authorities Council to share developments from peer regulators. Of particular note, we discussed the emerging issues of how renewable generator connection assets are regulated in other jurisdictions and the rollout of stand-alone power systems in other jurisdictions.
- Energy Safe Victoria to discuss current and emerging regulatory issues, share knowledge and establish a safety forum
- Queensland Electrical Safety Office (ESO) to share information and identify opportunities to collaborate and leverage from each other. We shared information on audit panels and discussed the possibility of the ESO conducting inspections of the Queensland network operators' electricity assets in NSW during its annual audits and explored collaborative methods to assess interstate network operators' compliance.

5.3.1 Public Lighting Code

The OECC completed its review of the Public Lighting Code. Ahead of the final consultation workshop (in December 2022), IPART's Secretariat conducted a comprehensive review of the draft Public Lighting Code to ensure the enforceability of it and provided extensive comments. The OECC adopted most of the recommendations made in our submission to the review.

OECC has published the revised *NSW Public Lighting Code*, which took effect on 1 July 2023.

5.3.2 Participation in the NSW Industry Safety Steering Committee

IPART participates in the NSW Industry Safety Steering Committee (ISSC), which was established to identify opportunities to improve electricity network safety. During 2022–23, IPART continued to provide summarised information to the ISSC on incidents and near misses reported by the licensed network operators and Sydney Trains and provided analysis of incidents to draw out emerging trends and issues. IPART's participation and collaboration with network operators has helped to facilitate solutions to improve safety in the electricity industry.

Appendices

Appendix A

Legal frameworks applicable to
electricity and gas networks
operating within NSW



A.1 IPART's role in monitoring compliance

IPART is responsible for administering the licensing regimes for energy network operators in NSW – including the electricity transmission and distribution network operators, natural gas reticulation network operators and gas distribution network operators. As part of this role, we are required to monitor the extent to which:

- electricity network operators comply with the conditions of their licences, which are imposed by the Minister for Energy (Minister) and the *Electricity Supply Act 1995* (ES Act)
- gas network operators comply with the conditions of their authorisations and licences, which are imposed by the Minister and the *Gas Supply Act 1996* (GS Act).

Box A.1 Statutory requirement for this report

Each year, we are required to prepare and forward to the Minister a report on the network operators' compliance with the conditions imposed on their licences or authorisations.

This report is required by section 88 of the ES Act and section 75A(3C) of the GS Act and covers the 12-month period ending on 30 June.

Since 2015, we have been responsible for regulating the safety of NSW electricity network assets. In this role, we monitor compliance with the requirements of the *Electricity Supply (Safety and Network Management) Regulation 2014* (ESSNM Regulation) by both licensed and non-licensed network operators with electricity network assets within NSW.^a There is no statutory requirement to report our findings, as compliance with the ESSNM Regulation is not a licence condition. However, given the potential safety risks that electricity network operations inherently present, we see value in us communicating this information to the Minister for transparency and to keep her informed of compliance levels of all electricity network operators and the work we undertake.

In addition, we monitor both licensed and non-licensed network operators' serious electricity works accidents under section 63R of the ES Act.

Section B.1 of Appendix B provides more detail on the electricity and gas network operators covered by this report, and the information we use to assess their compliance performance.

^a The functions of the Tribunal under the ESSNM Regulation form part of the Tribunal's regulatory functions conferred by the ES Act, section 77(1)(d) and ESSNM Regulation, clause 42B.

A.2 The energy network safety and reliability legal framework

A.2.1 ESSNM Regulation

The ESSNM Regulation requires all electricity network operators to have in place, and implement, safety management systems (SMS) that comply with *AS 5577–2013 Electricity network safety management systems (AS 5577)*. The ESSNM Regulation applies to Transgrid, Ausgrid, Essential Energy and Endeavour Energy, as well as non-licensed electricity network operators: Directlink, Sydney Trains, Metro Trains Sydney, ALTRAC (Sydney light rail), Keolis Downer (Newcastle Light Rail) and Lord Howe Island Board. It also covers interstate network operators that have assets located within NSW.

The ESSNM Regulation also requires network operators to measure their performance against their SMS and publish the results of their performance measurements annually.^b

IPART may require the network operators to audit their SMS or aspects of their SMS, and the network operators must provide us with the audit reports. We may, based on an audit report, direct an electricity network operator to modify or take specified actions to implement its SMS.

Summary of SMS obligations

Under Part 2 of the ESSNM Regulation:

- A network operator must take all reasonable steps to ensure that the design, construction, commissioning, operation and decommissioning of its network (or any part of its network) is safe.
- A network operator must have in place, and implement, a SMS that is in accordance with AS 5577, takes into account the primary objective of a SMS and any code, standard or guideline specified by the Minister, and deals with:
 - the safety and reliability of the network
 - advice to the public about electrical hazards related to the network
 - bush fire risk management:
 - where electricity lines and other assets are capable of initiating bush fire
 - relating to aerial consumers mains on bush fire prone land that is private land in respect of which the network operator may give directions^c.
- The primary objective of an electricity network operator's SMS is to assist a network operator to ensure that the design, construction, commissioning, operation and decommissioning of its network (or any part of its network) is safe. In particular, a SMS is to support:
 - the safety of members of the public and people working on networks
 - the protection of property, and

^b The Tribunal may however exempt network operators from reporting and publishing requirements under clause 10(4) of the *ESSNM Regulation*. The Energy Networks Regulation Committee (ENR Committee), as a delegate of the Tribunal, provided exemptions to Lord Howe Island Board, ALTRAC, Keolis Downer and the interstate network operators from complying with the reporting and publishing requirements under clauses 10(2) and 10(3) of the *ESSNM Regulation*.

^c Networks operators can direct the owner or occupier of premises on bushfire prone land that is private land to do bush fire risk mitigation work in certain circumstances under Division 2A of Part 5 of the ES Act.

- the management of safety risks arising from the protection of the environment and the loss of electricity supply.
- A network operator is to measure performance against its SMS and publish the results, giving prior notice to IPART of its intention to publish the results.
- Audits must be carried out as directed by IPART in writing to the network operator. We may require the audit concerned to relate to either specified aspects of a network operator's SMS, or to the SMS as a whole.

A.2.2 Licensed electricity networks

Ausgrid, Endeavour Energy and Essential Energy each hold a [distributor's licence](#), and Transgrid holds a [transmission operator's licence](#).^d All 4 network operators are required to comply with the conditions of their licences and to report to IPART on compliance with those conditions at the end of each financial year.

Critical infrastructure licence conditions apply to all licensed network operators. These licence conditions specifically require that compliance with critical infrastructure requirements be audited each year and the audit report provided to IPART.

The 3 licensed distribution network operators, Ausgrid, Endeavour Energy and Essential Energy have reliability and performance standards and customer service requirements specified in their licence conditions. The licensed distributors are required to report on compliance with those conditions quarterly, to conduct an independent compliance audit of those conditions at the end of each financial year, and to provide the audit report to IPART. Transgrid is also required to comply with a [NSW Electricity Transmission Reliability and Performance Standard 2017](#)^e and submit a compliance report to IPART annually.

Ausgrid, Endeavour Energy and Essential Energy are also required to comply with the [Public Lighting Code](#).^f

Additional obligations that relate to Transgrid, Ausgrid and Endeavour Energy

Transgrid, Ausgrid and Endeavour Energy must comply with the NSW Code of Practice for Authorised Network Operators for environmental assessment of activities they undertake. They must report to IPART on any non-compliance with the Code of Practice (or an immediate report if the breach is serious in nature).

A.2.3 Licensed gas networks

Allgas Energy Ltd, Australian Gas Networks (Albury and NSW), Central Ranges Pipeline Pty Ltd, Jemena Gas Networks (NSW) Ltd and Evoenergy hold gas authorisations that allow the supply of natural gas.

^d We have provided webpage links here to the superseded network operators' licences (and any subsequent variations) that were applicable for 2022–23. [New licences](#) were issued in September 2023.

^e The [NSW Electricity Transmission Reliability and Performance Standard 2017](#) is now Appendix 2 in [Transgrid's new licence](#).

^f A revised [Public Lighting Code](#) (version 1.3) was published and took effect on 1 July 2023. For 2022–23, Ausgrid, Endeavour Energy and Essential Energy were required to report against version 1.2 of the Public Lighting Code.

Origin LPG and Elgas Ltd hold 3 distributor licences that allow the supply of liquid petroleum gas (LPG). Jemena Gas Networks (NSW) Ltd holds a distributor licence to distribute a mixture of natural gas and hydrogen through an existing distribution system.

The licensees and authorisation holders are required to comply with the conditions of their licence or authorisation.

Appendix B

Who we regulate and how we assess their compliance

B

B.1 Network operators that we regulate

Table B.1 Overview of NSW licensed electricity network operators in 2022–23

Licence holder	Network type	Approximate number of customers	Area of operation
Transgrid	Transmission	20 directly connected customers	Transgrid owns and operates the major high voltage electricity transmission network in NSW and the ACT, connecting generators, distributors and major end users.
Ausgrid	Distribution	1.8 million customers	Sydney, the Central Coast and the Hunter Valley.
Endeavour Energy	Distribution	1.1 million customers	Sydney's Greater West, the Blue Mountains, the Southern Highlands, Illawarra and the South Coast of NSW.
Essential Energy	Distribution	More than 880,000 customers	95% of NSW (areas not covered by Ausgrid and Endeavour Energy).

Source: Transgrid website - 2019, Ausgrid website, 'About us', Endeavour Energy's Quarterly Distribution Reliability and Performance reports submitted to IPART, Essential Energy website, 'Our Network Area'.

Electricity network operator licences are available on [IPART's website](#).

Table B.2 Non-licensed electricity network operators with assets in NSW in 2022-23

Ausnet Services (Victoria)	Lord Howe Island Board
Directlink	Metro Trains Sydney
Energy Queensland	Powercor (Victoria)
Evoenergy (Australian Capital Territory)	Sydney Trains
ALTRAC (Sydney light rail)	Kelios Downer (Newcastle light rail)

Table B.3 Gas authorisation holders in NSW in 2022–23

Authorisation holder	Network type	Area of operation ^a
Evoenergy ^b	Natural gas reticulation	Eastern Capital City Regional, Greater Queanbeyan, Shoalhaven, Tumut
Allgas Energy Pty Ltd	Natural gas reticulation	Tweed, Narrabri
Australian Gas Networks (Albury) Ltd	Natural gas reticulation	Riverina and Murray regions
Australian Gas Networks (NSW) Ltd	Natural gas reticulation	Canberra Region (within NSW), Murrumbidgee and Riverina regions
Central Ranges Pipeline Pty Ltd	Natural gas reticulation	North Western, Northern and Central West Regions
Jemena Gas Networks (NSW) Ltd	Natural gas reticulation	Metropolitan Sydney, Murray, Central West, South West, North West, Northern, Illawarra, Canberra Region (within NSW), Murrumbidgee and Hunter regions
Elgas Ltd and Elgas Reticulation Pty Ltd	LPG distribution	Elgas: Adelong, Batlow, Gundagai, Tumut Elgas Reticulation: Hunter, Richmond-Tweed and Mid North Coast regions Murray Downs Estate, Shire of Tweed, City of Armidale
Allgas Energy Pty Ltd	LPG distribution	Glen Innes, Broken Hill, Banora Point, Jindabyne, Cooranbong, Lennox Head, Murrumbateman
Jemena Gas Networks (NSW) Ltd	Natural gas and hydrogen mixture distribution	Camden, Bankstown, Fairfield, Liverpool, and Penrith.

a. A general description of the area of operation is provided in this table. Detailed descriptions can be found in the respective licences and authorisations.

b. Formerly ActewAGL Distribution Ltd.

Source: Distributor licences, reticulator authorisations and information provided by licence/authorisation holders.

B.2 How we assess compliance

IPART takes a risk-based approach to prioritise how we target compliance. This means that we target our compliance resources toward the areas of risk that are most likely and have the highest consequence. We have continued to refine our risk-based approach to compliance regulation, and to our reporting frameworks and guidance materials. In line with this approach, we currently maintain a 5-year audit and reporting schedule for each electricity network operator which we amend to reflect any recently identified priority areas for improving their compliance with safety management requirements. We regularly update our audit schedule to reflect our *Energy Networks Regulation Strategic Plan* and the accompanying compliance and enforcement priorities.

The applicable compliance frameworks are detailed in section B.3-B.8.

IPART relies on information provided from self-reports from our regulated entities, from independent audits of the electricity network operators, and our own records of inquiries and investigations.

B.2.1 Self-reporting

Licensees are required to keep records relating to their activities, and to report any licence breaches to us. This information is primarily provided in licensees' annual compliance reports.

Electricity network operators and gas reticulators are required (as a condition of their licences) to provide annual compliance reports in accordance with our published reporting manuals. Gas distributors also provide reports that IPART requires.

Further, electricity network operators, including those that are non-licensed, report to us regarding:

- serious electrical works accidents and near misses
- the performance of their Safety Management System (SMS), except where an exemption has been provided, and
- bush fire risk mitigation activities.

Where non-compliances have been self-reported or have not been assessed as material or non-material by an auditor, IPART considers whether these are significant or minor in nature. Details of the compliance framework applicable to each licence condition is set out in this Appendix.

B.2.2 Audits of electricity network operators

Certain electricity network operator licence conditions are subject to an annual independent audit as follows:

- Compliance with the critical infrastructure licence conditions in the Transgrid, Ausgrid, Endeavour Energy and Essential Energy licences is subject to an annual audit which is to be conducted in accordance with IPART's *Electricity networks audit guideline – Audit fundamentals, process and findings* (Audit Fundamentals Guideline).
- Compliance with the distribution reliability and performance licence conditions in Ausgrid, Endeavour Energy and Essential Energy's licences is subject to annual audits which are to be conducted in accordance with the Audit Fundamentals Guideline.

In addition, we can, if satisfied that the licence holder has contravened a licence condition, direct an audit of other electricity network operator licence conditions.^a We also have a role in monitoring compliance with other relevant legislated obligations (beyond the licence conditions) of electricity network operators, and have the powers to direct ad hoc audits of compliance with the *Electricity Supply (Safety and Network Management) Regulation 2014* (ESSNM Regulation).

We have produced a number of audit guidelines for each audit category to inform the network operators and auditors of our expectations in the conduct of an audit, and this is available on the [Electricity Networks Auditing page](#) of our website.

^a Clause 8A of Schedule 2 to the ES Act.

Auditors must assess the network operators' compliance against all applicable obligations, and assign grades of compliance in accordance with IPART's electricity networks grading system detailed in our Audit Fundamentals Guideline. Refer to Table B.4 for details of the grading system.

Table B.4 IPART compliance gradings

Grades of compliance	Description
Compliant	Sufficient evidence to confirm that the requirements have been fully met.
Non-compliant (non-material)	Sufficient evidence to confirm that the requirements have generally been met apart from a number of minor shortcomings which do not compromise the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
Non-compliant (material)	Sufficient evidence has not been provided to confirm that all major requirements are being met and the deficiency adversely impacts the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
No Requirement	The requirement to comply with the licence condition or other regulatory obligation does not occur within the audit period or there is no requirement for the network operator to meet this assessment criterion.

Note: Reliability and performance standards audits have different compliance gradings. Refer to [Electricity networks audit guideline - Distribution reliability audits](#) for further details.

B.2.3 Audits of gas network operators

We do not have an audit function for the gas network operators.

B.3 Critical infrastructure

Under our [Electricity networks reporting manual – Critical infrastructure licence conditions](#), Transgrid, Ausgrid, Endeavour Energy and Essential Energy must report annually to IPART on whether or not they have complied with critical infrastructure licence conditions over the preceding financial year to 30 June. Reports are due by 30 September each year and must be accompanied by certification in writing supported by a resolution of the Board of Directors of the licence holder.

Transgrid, Ausgrid, Endeavour Energy and Essential Energy must also engage an approved critical infrastructure auditor and submit an audit report for the preceding financial year by 30 September each year.

B.4 Reliability and performance standards

Under IPART's *Electricity networks reporting manual – Transmission reliability standard – Annual reporting and additional information requirements*, Transgrid must report by 31 August each year for the preceding financial year. Audits against the reliability standard are only required if sought by IPART.

Under IPART's *Electricity networks reporting manual - Distribution reliability and performance reporting*, Ausgrid, Endeavour Energy and Essential Energy must report quarterly to IPART against the reliability and performance licence conditions over the preceding 12-month period. Reports are due within one month of the end of each quarter. Further details on these reports are at Appendix C.2.

Ausgrid, Endeavour Energy and Essential Energy must also engage an independent auditor from IPART's reliability audit panel (or have their nominated auditor approved by IPART) and submit an annual audit report for the preceding financial year by 30 September each year.^b Auditors must assess the network operators against all applicable reliability and performance licence conditions.

B.5 Public Lighting Code

Ausgrid, Endeavour Energy and Essential Energy are required to report in accordance with IPART's *Electricity networks reporting manual – NSW Public Lighting Code compliance reporting*. This includes the requirement to provide quarterly and annual performance reports. The annual performance reports are due to IPART no later than 31 August each year.

The annual performance report provided to IPART must provide details of non-compliances against the [Public Lighting Code](#), including performance against the Service Standards.^c Under the Service Standards, Ausgrid, Endeavour Energy and Essential Energy are required to repair:

- Complex Faults^d within 30 business days, and within 25 business days on average for each customer for the financial year
- General Faults^e within 10 business days, and within 8 business days on average for each customer for the financial year

^b From 2024–25, audits will be from time to time, as required by the Tribunal.

^c A revised [Public Lighting Code](#) (version 1.3) took effect on 1 July 2023. For 2022–23, Ausgrid, Endeavour Energy and Essential Energy were required to report against version 1.2 of the Public Lighting Code. Clause 17 of the Public Lighting Code (v1.2) defines Service Standards as the standards of service that the Service Provider must meet in the delivery of Public Lighting Services as specified in Schedule 1 clause 1.

^d Clause 17 of the Public Lighting Code (v1.2) defines Complex Faults as faults related to Repairs not subject to an Excluded Fault Condition:

- i. Where a site-specific traffic management plan and an additional dedicated traffic control crew are required; and/or
- ii. Where a site-specific Road Occupancy Licence or other specific authority for road occupancy is required; and/or
- iii. Where identification of an underground fault is required; and/or
- iv. Where access to private property is required.

^e Clause 17 of the Public Lighting Code (v1.2) defines General Faults as all Faults that are not Complex Faults and are not subject to an Excluded Fault Condition.

- Faults^f with an excluded fault condition within the permitted repair standard (which, depending on the 'fault condition' that applies to the fault, is either 100 business days or a timeframe agreed between the Service Provider and customer).

In addition, Service Providers are required to take reasonable steps to repair Priority Faults^g sooner than would otherwise be required for General Faults and Complex Faults under Schedule 1 of the Public Lighting Code.

B.6 Code of Practice for environmental impact assessments

As compliance with the Code of Practice for Authorised Network Operators (Code of Practice) is a condition of their licences, Transgrid, Ausgrid and Endeavour Energy are required to report any non-compliances with the Code of Practice, no later than 31 August each year, in accordance with IPART's *Electricity networks reporting manual - Annual compliance reporting*.

Under the Code of Practice, Transgrid, Ausgrid and Endeavour Energy can assess environmental impacts and self-determine activities that are not likely to significantly affect the environment and are conducted by, or on behalf of, the network operator for the purpose of electricity transmission or distribution. The Code of Practice describes a 5-stage process for assessing the environmental impact of an activity.

B.7 Safety management system

We may direct audits of the electricity network operators' safety management system (SMS). Auditors must assign a grade of compliant, non-compliant (non-material) or non-compliant (material).^h Based on the results of these audits, we can direct the network operators to modify or implement their SMS within a specified timeframe.

Bush fire risk management is an ongoing key focus for IPART, and each year we review the extent of compliance monitoring required to maintain visibility in this area. IPART closely monitors bush fire risk management through review of the annual bush fire risk management reports, information gathering and through audits which we direct.

Other ongoing areas of key risk management focus for IPART were:

- working on energised network assets, and
- contact with energised assets by members of the public and public workers.

Through our analysis of incident reports (see section B.8) and annual SMS performance reports, we determine if network operators have reduced the risks to as low as reasonably practicable for work on energised assets and contact with energised assets.

^f Clause 17 of the Public Lighting Code (v1.2) defines Fault to mean circumstances where the lumen output of a Luminaire has dropped below the standards set out in AS/NZS 1158, or a Luminaire is operating inconsistently with the operating times agreed with the Customer ("day-burner").

^g Clause 17 of the Public Lighting Code (v1.2) defines Priority Fault as a fault relating to lighting at pedestrian crossings or groups of three or more consecutive lights on 'Category V roads' (as defined in AS/NZS 1158).

^h Refer to Table B.4 and IPART's Audit Fundamentals Guideline for further details of IPART's compliance gradings.

B.8 Incident reporting

Transgrid, Ausgrid, Endeavour Energy and Essential Energy are required as a condition of their licences to report safety incidents, and incidents which affect reliability and third-party property under our *Electricity networks reporting manual- Incident reporting* (Incident Reporting Manual). IPART also expects that all network operators will comply with the reporting manuals where applicable to their specific reporting obligations.

Our Incident Reporting Manual details the types of safety, third party property and reliability incidents that licensed network operators must report. For each type of incident, the timeframes for reporting are detailed. For some incidents, details are reported in up to 3 stages, and our reporting manual details the timeframes for each stage.

IPART monitors the incidents reported to ensure:

- incidents are reported within the timeframes detailed in the Incident Reporting Manual, and
- adequate details are provided in the report, and where appropriate, preventive and mitigative actions are identified.

Failure to report incidents on time is considered a non-compliance against licence conditions.

IPART analyses the data from reported incidents to identify any emerging trends or repeat occurrences of some incident types, which may lead to further investigation and action.

Appendix C

Electricity network operators' reliability
and performance



C.1 Reporting requirements

The NSW electricity distribution network operators, Ausgrid, Endeavour Energy and Essential Energy (Distributors) are required to provide quarterly reports to IPART detailing their compliance with the reliability and performance standards set out in their [respective licences](#).^a

The quarterly reports provided by the Distributors must address compliance with licence conditions for:

- network overall reliability standards
- individual feeder performance
- customer service standards, and
- individual customer standards.

C.2 Distributors' performance against overall network reliability standards

The Distributors must not, when excluded interruptions are disregarded, exceed in a financial year the System Average Interruption Duration Index (SAIDI) standards that apply to its feeder types. SAIDI is the average derived from the sum of the durations of each sustained customer interruption (measured in minutes), divided by the total number of customers (averaged over the year) of the licence holder.

The Distributors must not, when excluded interruptions are disregarded, exceed in a financial year the System Average Interruption Frequency Index (SAIFI) standards that apply to its feeder types. SAIFI is the average derived from the total number of sustained customer interruptions divided by the total number of customers (averaged over the year) of the licence holder.

Feeder types are defined in the Distributors' licences as shown in Table C.1.

Table C.1 Feeder definitions as per the Distributors' licences

Feeder Type	Definition
Feeder	means: a) a high-voltage line operating at over 1kV and generally and generally at or below 22 kV that connects between a zone substation and a distribution substation; or b) except in the case of CBD Sydney feeders, lines operating at, or over, 1kV within a multiple-customer SAPS.
CBD Sydney	means a feeder forming part of the triplex 11kV cable system supplying predominantly commercial high-rise buildings, within the City of Sydney.

^a Refer to conditions 4 to 7 of each of the Distributors' [superseded licences](#) applicable for 2022–23. In addition to the quarterly reports, an independent audit of Distributors' performance against these standards is required at the end of each financial year. Audit findings are discussed in section 2.2.1.

Feeder Type	Definition
Low-voltage SAPS ^b	means a SAPS ^c but does not include lines operating at, or over, 1kV within a multiple-customer SAPS.
Long rural feeder	means a feeder with a total feeder length greater than 200 km which is not a Sydney CBD feeder or an urban feeder.
Short rural feeder	means a feeder with a total feeder route length less than 200 km, and which is not a CBD Sydney feeder or an urban feeder.
Urban feeder	means a feeder with actual maximum demand over the reporting period per total feeder route length greater than 0.3 MVA/km and which is not a CBD Sydney Feeder.

Table C.2 identifies network performance against the SAIDI average standards as reported by the Distributors for the 12-month period from 1 July 2022 to 30 June 2023. The data reported in each quarterly report is for the cumulative data of the current quarter and the previous 3 quarters. Therefore, the data reported in Q4 2022–23 is for the 12-month period up to 30 June 2023.

Table C.2 Performance against the SAIDI average standards (minutes per customer) for 2022–23

Distributor	Feeder type	Required standard	Reported performance	Compliant with licence condition
Ausgrid	Low-voltage SAPS	1817	N/A	N/A
	CBD Sydney	45	11.69	<input checked="" type="checkbox"/>
	Urban	80	52.96	<input checked="" type="checkbox"/>
	Short-rural	300	91.90	<input checked="" type="checkbox"/>
	Long-rural	700	909.35	<input checked="" type="checkbox"/>
Endeavour Energy	Low-voltage SAPS	1817	N/A	N/A
	Urban	80	61.30	<input checked="" type="checkbox"/>
	Short-rural	300	141.50	<input checked="" type="checkbox"/>
	Long-rural ^a	N/A	1085.70	N/A
Essential Energy	Low-voltage SAPS	1817	N/A	N/A
	Urban	125	78	<input checked="" type="checkbox"/>
	Short-rural	300	203	<input checked="" type="checkbox"/>
	Long-rural	700	496	<input checked="" type="checkbox"/>

Note: A feeder type is performing better or equal to the standard if its reported performance is equal to, or below the standard value. The SAIDI performance data is as per the figures reported by Ausgrid, Endeavour Energy and Essential Energy.

a. Endeavour Energy does not have a required SAIDI and SAIFI standard for the Long-rural feeder type. Approximately 0.3% of Endeavour Energy's customers comprise the Long-rural category.

Note: Performance data for low-voltage SAPS against the SAIDI average standards not available for the 12-month period.

Source: Q4 2022–23 quarterly reliability reports for Ausgrid, Endeavour Energy and Essential Energy.

^b Under the [variation to licence conditions](#) issued on 23 September 2022 (now superseded due to new licences being issued in September 2023), low-voltage SAPS are reportable under *individual feeder performance* standards from 1 October 2022.

^c SAPS means a 'regulated stand-alone power system' as defined at section 6B of the National Electricity (NSW) Law but does not include parts of the distribution system that have been temporarily isolated from the interconnected national electricity system due to an event or circumstance beyond the control of the Licence Holder such as bushfire or flood. Multiple-customer SAPS means a SAPS that supplies multiple customers.

Table C.2 shows that Ausgrid did not meet the SAIDI standard for long-rural feeders. This was due to a major outage, which contributed to over 254 minutes feeder category SAIDI. 141 customers were interrupted due to vegetation blown into overhead mains during storm conditions. The interruption lasted over 73 hours as severe flooding restricted access for work crews working to restore supply.

Ausgrid is undertaking a number of actions in an attempt to reduce outage times during future outages. These actions are due for completion by June 2024.

Table C.3 identifies performance against the SAIFI average standards as reported by the Distributors for the 12-month period from 1 July 2022 to 30 June 2023.

Table C.3 Performance against the SAIFI average standards (number per customer) for 2022–23

Distributor	Feeder type	Required standard	Reported performance	Compliant with licence condition
Ausgrid	Low-voltage SAPS	9.4	N/A	N/A
	CBD Sydney	0.3	0.05	<input checked="" type="checkbox"/>
	Urban	1.2	0.47	<input checked="" type="checkbox"/>
	Short-rural	3.2	0.79	<input checked="" type="checkbox"/>
	Long-rural	6.0	3.02	<input checked="" type="checkbox"/>
Endeavour Energy	Low-voltage SAPS	9.4	N/A	N/A
	Urban	1.2	0.58	<input checked="" type="checkbox"/>
	Short-rural	2.8	1.10	<input checked="" type="checkbox"/>
	Long-rural	N/A	4.01	N/A
Essential Energy	Low-voltage SAPS	9.4	N/A	N/A
	Urban	1.8	0.87	<input checked="" type="checkbox"/>
	Short-rural	3.0	1.57	<input checked="" type="checkbox"/>
	Long-rural	4.5	2.58	<input checked="" type="checkbox"/>

Note: A feeder type is performing better or equal to the standard if its reported performance is equal to, or below the standard value.

Note: Performance data for low-voltage SAPS against the SAIFI average standards not available for the 12-month period.

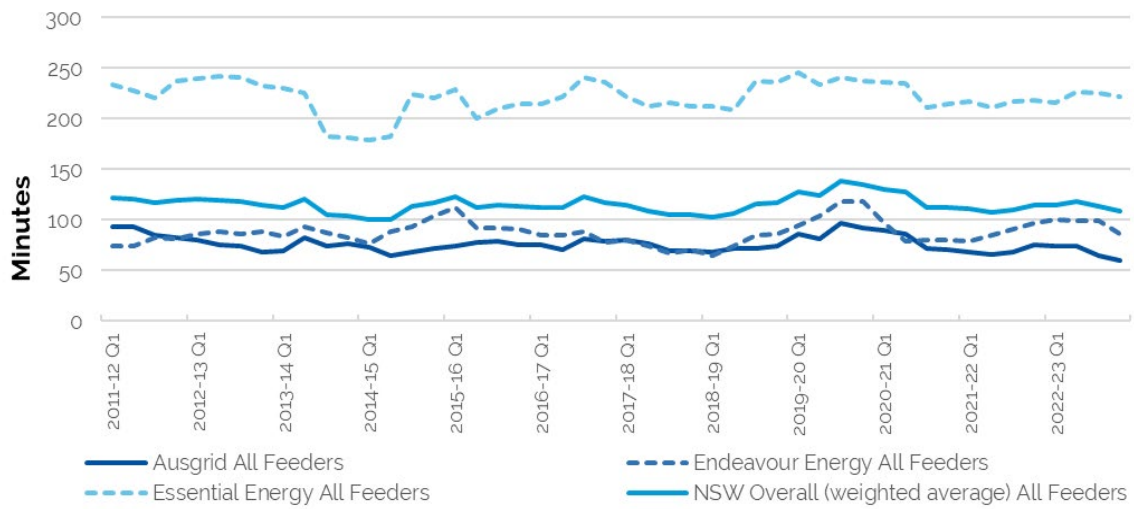
Source: Q4 2022–23 quarterly reliability reports for Ausgrid, Endeavour Energy, Essential Energy.

C.2.1 Long-term SAIDI and SAIFI trends

The Distributors have previously advised that variability in SAIDI and SAIFI occurs due to factors beyond their control, such as weather events, random asset failures, and other external factors. We recognise this, and therefore do not consider it useful to compare annual statistics or to attempt to identify short term trends.

Figure C.1 shows longer term trends of the SAIDI for each Distributor and a weighted average SAIDI for NSW.

Figure C.1 SAIDI, quarterly results by Distributor



Note: The NSW weighted average is calculated using the customer numbers from each of the Distributors.

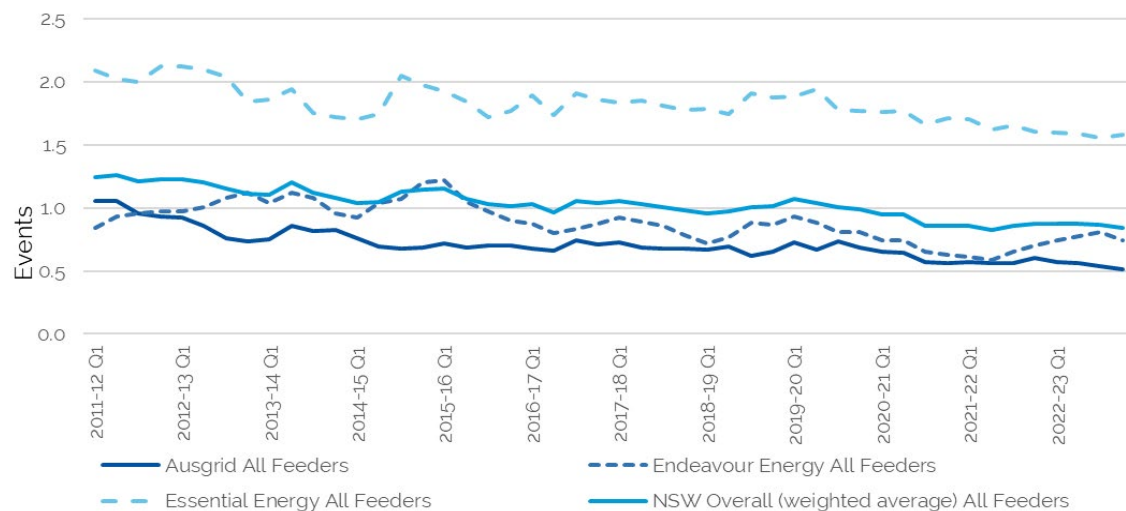
Source: Quarterly reliability reports for Ausgrid, Endeavour Energy, Essential Energy, and data provided to IPART by the then Department of Industry.

Overall, for NSW:

- the 5-year average interruption time is 118 minutes per customer, and
- there are no significant SAIDI trends over the graphed data period.

Figure C.2 shows longer term trends of the SAIFI for each Distributor and a weighted average SAIFI for NSW.

Figure C.2 SAIFI, quarterly results by Distributor



Source: Quarterly reliability reports for Ausgrid, Endeavour Energy, Essential Energy, and data provided to IPART by the Department of Industry.

Overall, for NSW:

- the 5-year average is 0.94 interruptions per NSW customer, and
- there are no significant SAIFI trends over the graphed data period.

C.3 Individual feeder performance reports

Where one or more of the feeders of a Distributor does not meet the relevant individual feeder standards,^d that Distributor must investigate the causes of the feeder not meeting the standard and take action to improve performance as appropriate.

Table C.4 shows the number of feeders that did not meet the performance standards in 2022–23. This data is provided for information only, as not meeting the individual feeder standard is not a breach of licence conditions but is a trigger for a Distributor to investigate and undertake remedial action under the licence. Auditors assessed the investigations and remedial actions that are being undertaken by the network operators.

Table C.4 Feeders not meeting performance standards by category in 2022–23

Feeder type	Ausgrid	Endeavour Energy	Essential Energy	Total
CBD	3 of 56 (5%)	N/A	N/A	3 of 56 (5%)
Urban	43 of 1,896 (2%)	21 of 1,076 (2%)	3 of 283 (1%)	67 of 3,255 (2%)
Short-rural	4 of 411 (1%)	10 of 485 (2%)	55 of 943 (6%)	69 of 1,839 (4%)
Long-rural	2 of 5 (40%)	0 of 1 (0%)	30 of 245 (12%)	32 of 251 (13%)
Total	52 of 2,368 (2%)	31 of 1,562 (2%)	88 of 1,471 (6%)	171 of 5,401 (3%)

Note: Data in brackets are percentages of underperforming feeders by type.

Note: No low-voltage SAPS were reported to exceed the relevant individual feeder standards.

Source: Q4 2022–23 Ausgrid, Endeavour Energy and Essential Energy reports.

C.4 Customer service standards

Customer service standards (interruption duration and frequency standards) are set out in Schedule 5 of the Distributors' licences. The interruption duration standard is the maximum allowable duration of an interruption to a customer's premises. The interruption frequency standard is the maximum number of interruptions in a financial year to a customer's premises.

^d Individual feeder standards are defined in Schedule 3 of the Distributors licences. These are SAIDI and SAIFI standards that apply to individual feeders of each of the Distributor's feeder types.

Different standard values are applicable depending on whether customers' premises are in metropolitan or non-metropolitan areas.

A Distributor is required to make payments to a customer when the Distributor does not meet the customer service standards. The customer is required to make a claim, and this claim must be processed within the defined timeframe in the Distributor's licence. Please note that claims are not paid if outages do not meet the eligibility criteria in the licence conditions or due to severe weather.

Table C.5 shows the customer claims paid and claims denied by the Distributors for 2022–23. The Distributors paid 63% of claims made in 2022–23.

Table C.5 Summary of customer claims paid and denied for 2022–23

Distributor	Claims paid (year)	Claims denied (year)	Total claims
Ausgrid	226	120	346
Endeavour Energy	10	20	30
Essential Energy	4	1	5
Total	240	141	381

Source: Q4 2022–23 reliability reports for Ausgrid, Endeavour Energy and Essential Energy.

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ISBN 978-1-76049-679-1