IPART Independent Pricing and Regulatory Tribunal | NSW

Annual Compliance Report

# Energy network operator compliance during 2023–24

October 2024

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:

Carmel Donnelly PSM, Chair
Dr Darryl Biggar
Jonathan Coppel
Sharon Henrick

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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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**Appendix B**



**Appendix C**

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'[1] compliance with relevant obligations for the year 2023–24.[2]

A summary of the energy network operators' performance against their respective licence conditions in 2023–24 is detailed below.

## Box 1.11 Energy network operators' compliance during 2023–24

Network operator compliance is based on the required self-reporting from network operators, annual self-assessed compliance reports signed by the Chair of the Board of Directors and the CEO, notification of particular events, and a program of audits conducted by IPART.

In summary, in respect of electricity network operators:

- Transgrid, Ausgrid, Endeavour Energy and Essential Energy were compliant with their critical infrastructure licence obligations (refer to section 2.1).
- Transgrid reported full compliance with the *NSW Transmission Reliability and Performance Standard 2017.* Ausgrid and Endeavour Energy and Essential Energy were compliant with their reliability and performance licence obligations except for their incident reporting obligations. Transgrid also reported non-compliances with its incident reporting obligations (refer to sections 2.2 and 4.4).
- Endeavour Energy and Essential Energy were compliant against the requirements of the *NSW Public Lighting Code* (Public Lighting Code), however Ausgrid was not fully compliant with all requirements (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 the reporting and auditing requirements of their licences.

The natural gas reticulators and most gas distribution operators self-reported that they were compliant with their authorisation or licence conditions. However, Allgas Energy Pty Ltd submitted its annual compliance report after the due date. 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.

[1] Refer to Appendix B for details of energy network operators covered by this report.
[2] Refer to Box A.11 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)[3] 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). Network operators completed most of the vegetation and asset defects identified during their pre-summer bush fire inspections, prior to the start of the bush fire season. All pre-summer bush fire inspections and resultant vegetation and asset tasks were completed as of 1 December 2023. However, Essential Energy had outstanding routine/cyclic vegetation inspections which it attributes to "a constrained national labour market, increased growth due to weather conditions and access issues due to wet weather". IPART is monitoring Essential Energy's rectification of the outstanding bush fire related tasks (refer to section 4.2.1).

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 2023–24, we were generally able to improve compliance through administrative actions. However, we issued formal directions to Endeavour Energy in relation to bush fire risk management, the NSW Public Lighting Code, and its critical infrastructure licence conditions.

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 2023–24 were:

- bush fire risk management (field inspections)
- critical infrastructure (licence condition compliance)
- climate change adaptation (loss of supply risk), and
- public lighting (licence condition compliance).

Full details are provided in section 5.1.

[3] Refer to Table 4.11 for details of all network operators with assets in NSW.

### Box 1.22 IPART's role

IPART is responsible for regulating licensed electricity transmission and distribution network operators, natural gas reticulation network operators and gas distribution network operators in NSW, against the conditions of their licence or authorisations. We are also responsible for regulating the 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.[4]

IPART does not have an economic regulation role for distributors or transmission operators. The Australian Energy Regulator makes distribution and transmission determinations that cap the revenue distributors and transmission operators can earn from the provision of network services.

However, IPART has some functions related to the retail energy market and prices in NSW. For example, IPART is required to monitor and report on the prices and competition in the electricity and gas markets annually. Further, from 2024-25, IPART has a new function of determining the median market electricity offer for each distribution district, which will cap electricity prices for customers living in residential land lease communities.

## 1.2 Energy Networks Regulation Committee

The Tribunal delegated certain responsibilities in relation to 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 meets regularly, exercises statutory decision-making powers as appropriate, and provides strategic direction to IPART officers in relation to energy network regulation.

The ENR Committee regularly reports to the Tribunal and escalates issues where appropriate. The ENR Committee has a clear strategic approach to regulation, and this is further outlined in Chapter 5.

[4] We do not regulate electricity generators, gas transmission pipelines or processing or bulk storage facilities for gas, or electricity or gas retailers.

## 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. 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.[5]

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[6] will not provide an ignition source for a fire.

This risk cannot realistically be eliminated, but network operators must take all reasonable steps to ensure that its network is safe.

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

5 Cl 6 of the ESSNM Regulation.

6 Aerial consumers mains means that part of an electrical installation consisting of overhead conductors and support structures between the main switchboard of an electrical installation and a support structure that is the connection point with the distribution system.

## 1.5 Summary of licensed electricity network operators' compliance and performance during 2023–24

### Transgrid

| | |
|---|---|
| ✓ | **Safety and bush fire risk management**<br>Transgrid reported no outstanding pre-summer bushfire inspections, vegetation maintenance tasks, and asset tasks.<br>In 2023–24. we did not direct an audit of Transgrid's Electricity Network Safety Management System (ENSMS). This was determined based on Transgrid having no 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**<br>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**<br>Transgrid reported no non-compliances against its transmission reliability licence conditions. |
| − | **Incident reporting**<br>Transgrid reported in its annual compliance report that 2 incident reports were submitted outside reporting timeframes. |
| ✓ | **Environmental impact assessments**<br>Transgrid reported no non-compliances with the Code of Practice for conducting environmental assessments. |

### Ausgrid

| | |
|---|---|
| − | **Safety and bush fire risk management**<br>Ausgrid reported no outstanding pre-summer bushfire inspections, private mains inspections, vegetation maintenance tasks, and asset tasks.<br>An audit of Ausgrid's bush fire risk management found 2 material non-compliances. There were no other audits of Ausgrid's ENSMS during 2023–24. |
| ✓ | **Critical infrastructure**<br>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**<br>Although Ausgrid were compliant with most requirements of the Public Lighting Code, they did not comply with Clause 14(a)(i) and Clause 14(a)(v). |
| ✓ | **Reliability (excluding Incident Reporting)**<br>Ausgrid 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**<br>Ausgrid reported that 7 incident reports were not submitted to the Minister within the required timeframes. These non-compliances were confirmed by an independent audit. |
| ✓ | **Distribution districts**<br>Ausgrid reported that it was compliant with its distribution district licence condition and did not report any activity outside of their distribution district for the period 1 July 2023 until 6 September 2023. |
| ✓ | **Environmental impact assessments**<br>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 pre-summer bushfire inspections, asset tasks, and private mains inspections. It reported 16 outstanding vegetation maintenance tasks which were cleared by 1 December 2023.

The audit of Endeavour Energy's ENSMS found that it had adequately addressed the non-compliances from its previous bush fire risk management audit. Field inspections identified 12 observations where bush fire preparation controls had not been effectively implemented in accordance with the ENSMS. This resulted in 2 material non-compliances. There were no other audits of Endeavour Energy's safety management system during 2023–24.

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

Endeavour Energy engaged an independent expert to investigate the circumstances which led to the non-material non compliances in 2022-23. Endeavour Energy has completed some remediation activities and has a plan to address additional recommendations made by the investigator.

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**Public lighting**
Endeavour Energy were compliant with the requirements of the Public Lighting Code.

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**Reliability (excluding Incident Reporting)**
Endeavour 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.

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**Incident reporting**
Endeavour Energy reported that 4 incident reports were submitted outside reporting timeframes. These non-compliances were confirmed by an independent audit.

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**Distribution districts**
Endeavour Energy reported that it was compliant with its distribution district licence condition and did not report any activity outside of their distribution district for the period 1 July 2023 until 6 September 2023.

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

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# Essential Energy

**Safety and bush fire risk management**
Essential Energy reported no outstanding pre-summer bushfire inspections and private mains inspections. It reported 7 outstanding vegetation maintenance tasks and 10 outstanding asset tasks, that were cleared by 1 December 2023. However, Essential Energy had outstanding routine/cyclic vegetation inspections in high-risk bush fire areas which it attributes to the poor performance, and termination of, a contractor. Essential Energy has provided IPART with a rectification plan with monthly progress updates to IPART.

The audit of Essential Energy's ENSMS found that it had adequately addressed the non-compliances from its previous bush fire risk management audit. Field inspections identified 25 observations where bush fire preparation controls had not been effectively implemented in accordance with the ENSMS. This resulted in 1 material non-compliance. There were no other audits of Endeavour Energy's safety management system during 2023–24.

**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**
Essential Energy were compliant with the requirements of the Public Lighting Code.

**Reliability (excluding Incident Reporting)**
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 10 incident reports were submitted outside reporting timeframes. These non-compliances were confirmed by an independent audit.

**Distribution districts**
Essential Energy reported that it was compliant with its distribution district licence condition and did not report any activity outside of their distribution district for the period 1 July 2023 until 6 September 2023.

**Environmental impact assessments**
Essential Energy reported no non-compliances 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 2023–24 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

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NSW transmission network operator Transgrid and distribution network operators Ausgrid, Endeavour Energy and Essential Energy held operating licences for 2023-24.[7] ACEREZ Partnership was granted a licence by the Minister on 19 September 2024 but did not hold a licence at any time during 2023-24.

The 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.[8]

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.

Transgrid, Ausgrid, Endeavour Energy and Essential Energy did not report any non-compliances with their critical infrastructure licence conditions. The independent audits of Transgrid, Ausgrid, Endeavour Energy and Essential Energy did not identify any non-compliances for the 2023–24 audit period.

7 Available on the Licence conditions and regulatory instruments page of IPART's website.
8 IPART is currently reviewing the Critical Infrastructure licence conditions for all licensed network operators.

### 2.1.1 We issued a direction to Endeavour Energy in relation to 2022-23 non-compliances

When Endeavour Energy submitted its 2022–23 critical infrastructure licence conditions annual compliance statement and report to IPART it self-reported two non-compliances with its licence conditions. Endeavour Energy reported that a third-party contractor established a "remote tunnel" (i.e. a connection) from Endeavour Energy's distribution system to the US-based server of another Endeavour Energy contractor.

The auditor assessed these non-compliances as non-material and identified an additional non-material non-compliance regarding not complying with a reporting obligation under its Remote Access Protocol (Protocol). The auditor reported that all non-compliances resulted from the same incident.

The Energy Networks Regulation Committee directed Endeavour Energy to engage an independent expert to investigate the circumstances which led to the non-material non-compliances in 2022-23.

In response to our direction, Endeavour Energy engaged CyberCX to conduct an independent investigation of the incident and submitted an investigation report to IPART by the required due date. At the time of the investigation, Endeavour Energy had already completed remediation activities. The investigation report identified root causes of the incident and noted that all organisations involved in the incident were authorised suppliers and there was no evidence of 'malicious cyber activity' during this incident.

The investigator noted that Endeavour Energy had already completed several technical security remediation changes to its operating technology environment and implemented other measures which the investigation considered appropriate.

The investigator also made 4 additional remediation recommendations to address the identified gaps and reduce the risk of a similar incident re-occurring. Endeavour Energy proposed actions to address the underlying issues associated with each recommendation.

During the 2024 Critical Infrastructure licence conditions audit, Endeavour Energy's auditor noted that the investigator's 4 recommendations had been divided into a total of 6 tasks. All of these tasks had been assigned a due date, and uncompleted tasks are listed as 'on track'. The auditor considers that completed tasks should be sufficient to prevent recurrence, and that remaining actions in progress will provide additional assurance once completed.

### 2.1.2 IPART liaises with the Cyber and Infrastructure Security Centre

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, including reviewing the critical infrastructure licence conditions.

## 2.2 Reliability and performance standards licence conditions

All licences include reliability and performance conditions. These conditions help ensure that licensed network operators design and maintain their systems to provide customers with an acceptable level of reliability. These licence conditions operate in a complimentary way to other reliability regimes, such as the Australian Energy Regulator's *Service target performance incentive scheme*.

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 2023–24 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*[9].

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.

[9] The *NSW Electricity Transmission Reliability and Performance Standard 2017* is at Appendix 2 of Transgrid's licence.

Ausgrid, Endeavour Energy and Essential Energy 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 for further details. Ausgrid's auditor also noted that Ausgrid had not yet completed actions recommended by last year's auditor in response to incident reporting obligations.

The audit of Ausgrid in 2022-23, identified that Ausgrid did not meet the timeframe for determining customer claims made against the customer service standards. The 2023-24 auditor noted that Ausgrid was compliant with the payment of customer service standard claims for 2023-24.

A summary of the non-compliances is in Table 2.11.

### Table 2.11 Summary of distributor's 2023–24 reliability and performance licence condition audit results

| Licence condition | Ausgrid | Endeavour Energy | Essential Energy |
|---|---|---|---|
| **Clause 4 – Network overall reliability standards** | ✓ | ✓ | ✓ |
| **Clause 5 – Individual feeder standards** | ✓ | ✓ | ✓ |
| **Clause 5A – Individual customer standards** | ✓ | ✓ | ✓ |
| **Clause 6 – Customer service standards** | ✓ | ✓ | ✓ |
| **Clause 7 – Performance monitoring and reporting** | ⊖ Incident reporting did not meet timeframes. | ⊖ Incident reporting did not meet timeframes. | ⊖ Incident reporting did not meet timeframes. |

IPART requires network operators to take actions to address any non-compliances identified by an auditor. We also check during future audits that the non-compliances have been adequately rectified.

## 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.

The Public Lighting Code (version 1.3) that was in force in 2023–24 was published by the then Office of Energy and Climate Change (OECC) in December 2022, and took effect on 1 July 2023.

Ausgrid, Endeavour Energy and Essential Energy, are defined as Service Providers[10] 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.[11]

In this section:

- Non-compliance with clause 14 of the current Public Lighting Code are referred to as 'breaches' of the Code, and
- There are other expectations set out in the Public Lighting Code that do not constitute a breach. Some of these expectations may result in customer (penalty) payments being made by Service Providers to Customers. Where these other expectations are not met, then we refer to these as 'findings'.

### 2.3.1 Compliance with the Public Lighting Code

All Service Providers submitted their quarterly and annual reports by the deadlines specified by the Public Lighting Code and IPART's *Electricity networks reporting manual - NSW Public Lighting Code compliance reporting* (Reporting Manual – Public Lighting Code).

Ausgrid reported two breaches of the Public Lighting Code's service standards (clause 14), where they:

- failed to successfully prioritise the repair of Priority Faults within the specified timeframe for three customers (4 days)
- did not submit the reports to more than 50% its customers within the required timeframe (one month) for quarters one and two of 2023-24.

Endeavour Energy and Essential Energy reported full compliance with clause 14 of the Public Lighting Code.

We have detailed the Service Providers' compliance with the Public Lighting Code in Table 2.2, and provided further details of Ausgrid's breaches of the Public Lighting Code in Table 2.55. Fault definitions are included in section 2.3.3.

#### Table 2.22 Breaches of Clause 14 of the Public Lighting Code

| Breach areas of the Code | Ausgrid | Endeavour Energy | Essential Energy |
|---|---|---|---|
| **Clause 14(a)(i)**<br>for a Priority Fault, in the event of:<br>A. Widespread Non-conformity for failure to Repair the Priority Fault within the average Repair Standard, or | ✓<br>32 out of 33 Customers 97.06% | ✓<br>19 out of 19 Customers 100% | ✓<br>36 out of 47 Customers 76.60% |

[10] Ausgrid, Endeavour Energy and Essential Energy are referred to as Service Providers in section 0 of this report. Other terms defined in the Public Lighting Code are also used in Section 0.

[11] Clause 19 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.'

| Breach areas of the Code | Ausgrid | Endeavour Energy | Essential Energy |
|---|---|---|---|
| **Clause 14(a)(i)**<br>for a Priority Fault, in the event of:<br>B. any failure to comply with Schedule 1, clause 1(c). | Ausgrid did not comply with this requirement for three priority faults[a] | No breaches reported | No breaches reported |
| **Clause 14(a)(ii)**<br>for a General Fault, in the event of Widespread Non-conformity of failure to Repair the General Fault within the Average Repair Standard; | 34 out of 34 Customers 100% | 22 out of 22 Customers 100% | 78 out of 84 Customers 92.86% |
| **Clause 14(a)(iii)**<br>for a Complex Fault, in the event of Widespread Non-conformity of failure to Repair the Complex Fault within the Average Repair Standard; | 34 out of 34 Customers 100% | 22 out of 22 Customers 100% | 75 out of 80 Customers 93.75% |
| **Clause 14(a)(iv)**<br>failure to comply with clause 8(d) or 11(h) of the Code (relating to a Service Provider's obligation to refund or credit a customer's account in the event of incorrect billing and exceeding the relevant repair standard); | No breaches reported | No breaches reported | No breaches reported |
| **Clause 14(a)(v)**<br>failure to comply with clause 9 of the Code (relating to reporting) for over 50% of Customers within a financial year | Ausgrid failed to provide their Q1 and Q2 reports to their customers | No breaches reported | No breaches reported |
| **Clause 14(b)**<br>A Service Provider must immediately notify IPART in writing upon becoming aware of any Breach of clause 14(a)(i)(B) or 14(a)(iv). | All breaches reported | No breaches reported | No breaches reported |
| **Overall compliance with the Code** | | | |

a. The faults crossed over the end of the 2022-23 financial year, which meant the timeframe required to rectify a priority fault reduced from 25 days to 4 days

### 2.3.2 Summary of payments and credits to Customers

As noted in Table 2.22, it is a breach of the Public Lighting Code for a Service Provider to fail to fully comply with the requirements to refund or credit all Customers' accounts as set out in the Public Lighting Code.[12] All Service Providers were compliant with this condition. Table 2.33 provides a summary of the payments and credits that each Service Provider has made during the 2023-24 year.

## Table 2.33 Summary of payments and credits to customers

| Statistic | Ausgrid | Endeavour Energy | Essential Energy |
|---|---|---|---|
| Payments for when the service provider exceeds the individual repair standard (clause 11(d)) | $500<br>20 customers | $1,200<br>48 customers | $2,025<br>80 customers |
| Payments for when the service provider exceeds the Average Repair Standard for **Complex Faults** (clause 11(f)) | Nil | $46,372.32<br>20 customers | $6,312.76<br>18 customers [a] |

[12] Clause 14(a)(iv) of the Public Lighting Code.

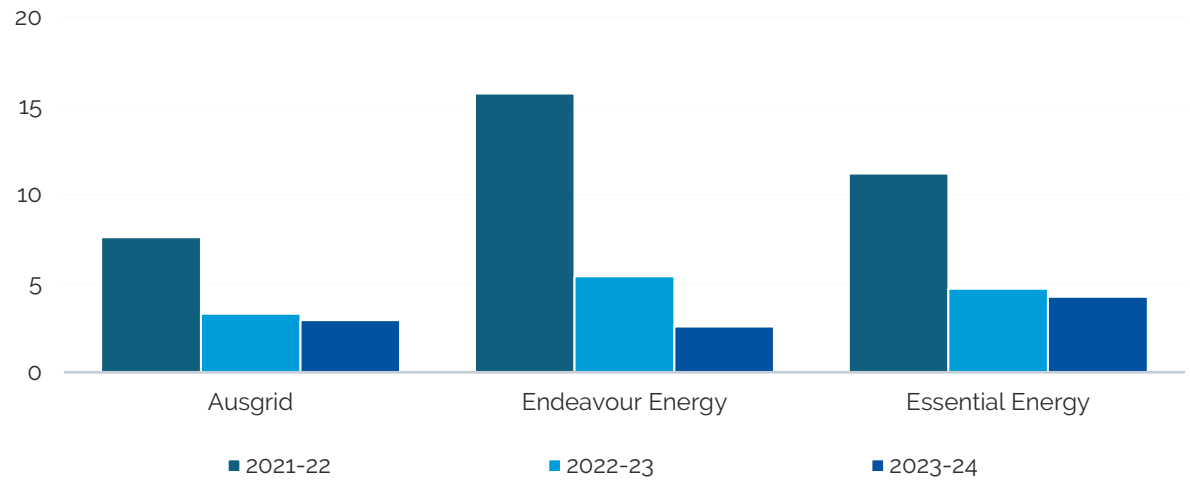
| | | | |
|---|---|---|---|
| Payments for when the service provider exceeds the Average Repair Standard for **General Faults** (clause 11(f)) | Nil | $6,047.62<br>4 customers | |
| Total | $500 | $53,619.94 | $8.337.76 |

a. Essential Energy reported both clause 11(f) and clause 11(g) as one number

### 2.3.3 Comparison to previous years

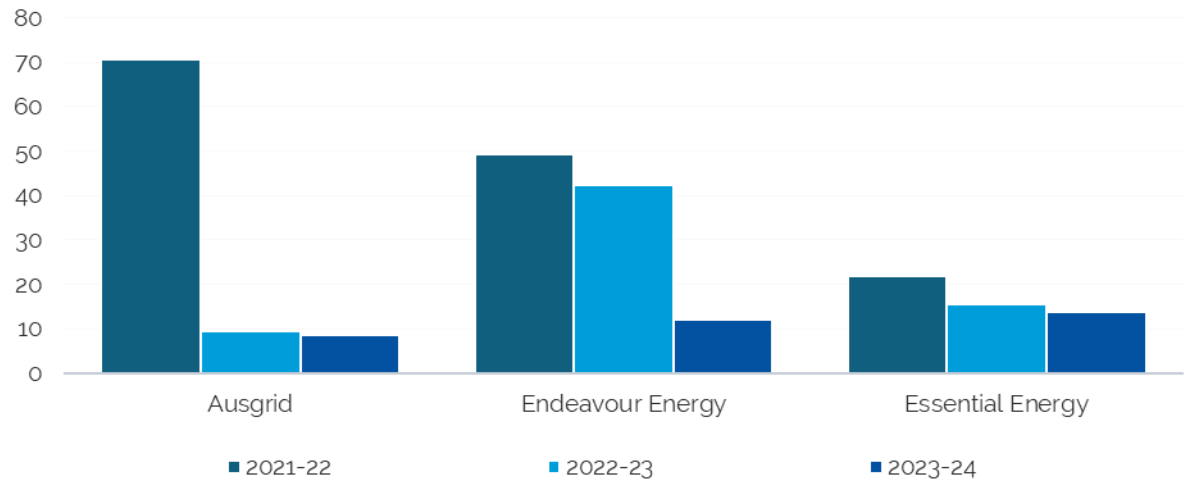
IPART has been holding the Service Providers to account for their compliance with the Public Lighting Code. The overall compliance of all three Service Providers has improved significantly. While not a direct compliance measure, the average lighting fault repair times provide an indication to the overall results of the Service Providers and help demonstrate their improvements and are shown below in Figure 2.1, Figure 2.2 and Figure 2.3.

## Figure 2.11 Average General Fault repair duration (business days)



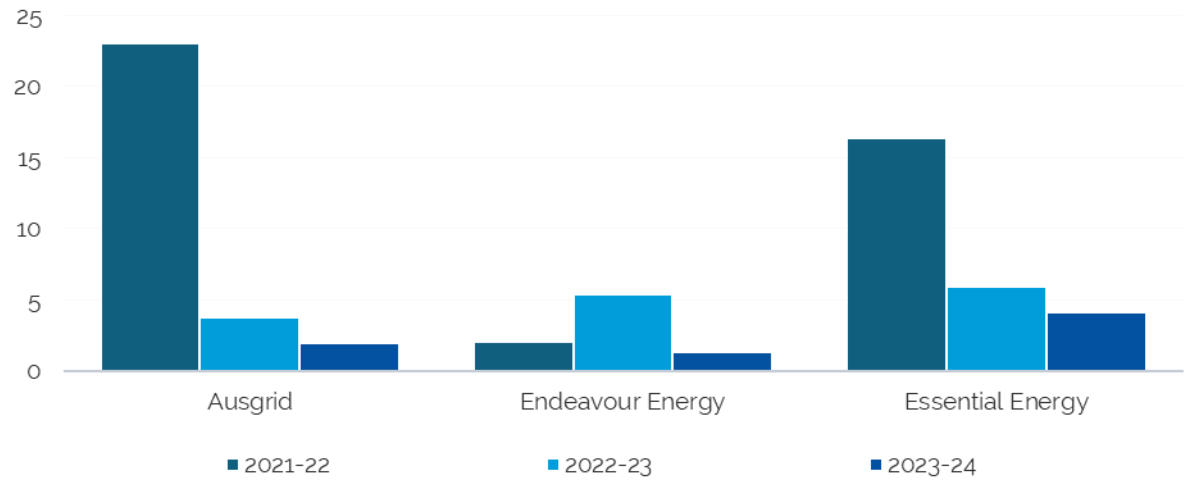

a. The average repair standard for General Faults is 8 business days

## Figure 2.22 Average Complex Fault repair duration (business days)



a. The average repair standard for Complex Faults is 25 business days

## Figure 2.33 Average Priority Fault repair duration (business days)




b. The average repair standard for Priority Faults is 4 business days
c. Note that in previous version of the Public Lighting Code (version 1.2), the average repair standard was 8 business days for General Faults and 25 business days for Complex Faults. Service Providers were required to take reasonable steps to repair Priority Faults sooner than these standards.

### Fault definitions summary

A summary of the Fault definitions are included below. For a full definition, refer to the Public Lighting Code.

- **General Fault** means any Fault, other than a Complex Fault, that may be subject to an Excluded Fault Condition.
- **Complex Fault** means a Fault, that may become a Priority Fault and may be subject to an Excluded Fault Condition, where:
    - i a site-specific traffic management plan and an additional dedicated traffic control crew are required; or
    - ii a site-specific Road Occupancy Licence or other specific authority for road occupancy is required; or
    - iii identification of an underground fault is required.
- **Priority Fault** means a Fault relating to lighting at pedestrian crossings or groups of three or more consecutive lights that are Category V Lighting (whether or not subject to an Excluded Fault Condition).
- **Excluded Fault Conditions**, when applicable, mean that a fault is excluded from the individual repair standard and average repair standard. These conditions are when:
    - i 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

ii the Service Provider must give notice to third parties for access as required by Regulatory Requirements or otherwise

iii there are delays in undertaking the Repairs as communicated to the Customer or as requested by the Customer

### 2.3.4 Completed tasks under the Public Lighting Code

The Public Lighting Code sets out other deliverables expected of Service Providers. Some of these are unrelated to the breach conditions above (e.g. individual fault repair standard) while others may contribute towards a possible breach (e.g. average fault repair standard). We have summarised some of these in Table 2.44.

## Table 2.44 Completed Public lighting tasks

| Statistic | Ausgrid | Endeavour Energy | Essential Energy |
|---|---|---|---|
| Total number of faults repaired in 2023-24 [a] | 13,652 | 16,777 | 6,235 |
| Total number of General Faults repaired within 10 days | 9,695 (97.34%) | 12,728 (95.53%) | 4,555 (94.17%) |
| Number of Customers for which General Faults were repaired within 8 business days on average | 34 out of 34 (100%) | 22 out of 22 (100%) | 78 out of 84 customers (92.86%) |
| Average repair time to complete General Faults [b] | 2.94 days | 2.57 days | 4.25 days |
| Total number of Complex Faults repaired within 25 business days | 1,018 (97.70%) | 2055 (88.01%) | 952 (89.98%) |
| Number of Customers for which Complex Faults were repaired within 25 business days on average | 34 out of 34 (100%) | 22 out of 22 (100%) | 75 out of 80 (93.75%) |
| Average repair time to complete Complex Faults [c] | 8.56 days | 12.01 days | 13.80 days |
| Total number of Complex (Priority) Faults repaired | 1,582 | 1,032 | 202 |
| Number of Customers for which Complex (Priority) Faults were repaired more quickly than the average repair target (of 4 business days) for Complex Faults | 31 out of 33 (93.94%) | 19 out of 19 (100%) | 36 out of 47 (76.60%) |
| Average repair time to complete Complex (Priority) Faults [d] | 1.96 days | 1.37 days | 3.98 days |

a. General Faults must be repaired within 10 business days
b. The average repair time for General faults must be less than 8 days
c. The average repair time for Complex Faults must be less than 25 business days
d. The average repair time for Complex Priority Faults must be less than 4 business days

### 2.3.5 Audit against the Public Lighting Code

In 2023, the ENR Committee issued audit directions to the Service Providers to undertake an audit against the Public Lighting Code.[13] The purpose of this audit was to identify systemic shortcomings and provide a level of assurance for the 2023-24 reported information under the new Public Lighting Code. These audits focused on:

- annual payment and reporting obligations for the 2022-23 compliance year, and
- 2023-24 quarter 1 and 2 compliance against the Public Lighting Code.

The audits have identified findings in three main areas:

- breaches of the Public Lighting Code for 2023-24
- findings against 2022-23 payments and reporting, and
- findings with systems and procedures that support future compliance.

Many of the findings from the audits do not constitute breaches of Public Lighting Code for 2023-24. We nevertheless expect they will add value by drawing these findings to the attention of the Service Provider and enabling the systemic improvements which will support greater compliance in the future.

We also note that Ausgrid failed to provide IPART with their rectification plan within three weeks of receiving the final report. This is a breach of their licence conditions, specifically:

- condition 10, complying with Audit Guidelines issued by the Tribunal
- condition 15, compliance with audit directions.

We expect Ausgrid to report this non-compliance in their 2024-25 annual compliance report. Given their overall lift in compliance, we do not propose to take any further action.

#### Breaches of the Public Lighting Code for 2023-24

The auditor has identified two areas where Ausgrid breached the Public Lighting Code. These were also reported as breaches of the Public Lighting Code by the Service Provider. In both cases, these were identified by the auditor as material non-compliances. A summary of the auditors finding and Ausgrid's proposed rectification action is shown in Table 2.55.

#### Table 2.55 - Audit findings against Ausgrid which were also breaches of the Code

| Summary of Auditor's finding | Ausgrid's proposed rectification actions |
|---|---|
| Breach of condition 14(a)(i)(B) of the Code. Ausgrid did not successfully prioritise the Repair of Priority Faults in compliance with the NSW Public Lighting Code 1.3 Schedule 1 clause 1(c) for the 2023-24 financial year due to Mosman Councils Annual Average Repair Standard not being met. | Ausgrid will review and update documentation, re-train teams, and investigate the feasibility of automating the process. They will also arrange for a toolbox talk with field managers and contractors to raise awareness about the Codes targets. |

[13] Condition 15.1 of each Service Provider's licence provides that the Tribunal may direct an audit with conditions imposed on each Service Provider by the Licence, the Act or Regulations.

| | |
|---|---|
| Breach of condition 14(a)(v) of the Code. Ausgrid did not submit the Q1 report to its customers and sent the Q2 report more than one month after the required deadline. | Ausgrid has addressed this non-compliance by updating internal procedures to ensure all reports are submitted by the required deadlines, introduced new checks to be completed by the Governance, Risk and Compliance team and cross-skilled and retrained all relevant members of the public lighting team in preparing IPART compliance reports. |

## Findings against 2022-23 payments and reporting

We set the timing of the audit so that the results could be factored into the Service Provider's compliance reports to IPART and in this report. We did this to assure the accuracy of these reports. However, because of this timing, the audit did not check the 2023-24 annual payments and annual reporting. In lieu of this, the audit checked the 2022-23 annual payments and reporting, which are substantially equivalent obligations between the two versions of the Public Lighting Code.

### 2022-23 payments

Endeavour Energy was found to have not made payments in accordance with clauses 10(f) and 10(g) of the Public Lighting Code as applicable to the 2022-23 year.[14] The auditor found this to be a non-material non-compliance.

While the audit was not able to assess the payments applicable for the 2023-24 year, Table 2.66 shows the auditors findings against Endeavour Energy's in relation to 2022-23 Customer payments. Endeavour Energy confirmed that the error in the 2022-23 payments has not been repeated for the 2023-24 Customer Payments. Improvements have been made as a result of the finding which we expect will prevent this issue from reoccurring. A summary of the auditor's finding and Endeavour Energy's proposed rectification action is shown in Table 2.66.

### Table 2.66 - Audit findings against Endeavour Energy's 2022-23 annual Customer payments

| Summary of Auditor's finding | Endeavour Energy's proposed rectification actions |
|---|---|
| Out of 23 public lighting customers, 15 customers were found to have been overpaid, 2 customers received credits when none were due, and one customer did not receive a credit when one was due. | Endeavour Energy provided a rectification plan to IPART noting that it will document the process of extraction, collation and calculation for the payments. This process will be documented and stored in the same system that is used for other Public Lighting processes. |

### 2022-23 reporting

Essential Energy was found to have not fully complied with the requirement to provide accurate reports in accordance with the Public Lighting Code as applicable to the 2022-23 year. In all 8 cases, these findings were identified by the auditors as non-material non-compliances.

[14] Clause 10(h) of the previous Public Lighting Code required that the payment under clauses 10(f) and 10(g) be made once annually. Under the current Public Lighting Code, these clauses have been renumbered as clauses 11(f) and 11(g) and both payments are required to be credited on an annual basis under clause 11(h). Non-compliance with clause 11(h) of the current Public Lighting Code constitutes a breach under clause 14(a)(iv).

While the audit was not able to assess the annual reporting applicable for the 2023-24 year, Table 2.77 shows the auditors findings identified against 2022-23 reporting. Essential Energy has confirmed that improvements have been made as a result of the findings, however some findings were not able to be resolved.

From 2023-24 under the current version of the Public Lighting Code, failure to comply with the reporting requirements under clause 9 of the Public Lighting Code for over 50% of customers in a financial year now constitutes a breach under clause 14(a)(v) of the Public Lighting Code from 1 July 2023 onwards. This means that full compliance of reporting to Customers is no longer required and instead, the Service Provider must comply with reporting for at least 50% of Customers. That is, if reporting is non-compliant for up to 50% of Customers, then the Service Provider is still compliant with the Public Lighting Code for the purposes of Licence compliance.

Noting the threshold for findings to become a breach of the Public Lighting Code, our view is that none of these findings would have constituted a breach if they had reoccurred in 2023-24.

A summary of the auditor's findings against Essential Energy, and Essential Energy's proposed rectification actions, are shown in Table 2.77.

## Table 2.77 – Auditor's findings against Essential Energy's reporting

| Summary of Auditor's finding | Essential Energy's proposed rectification actions |
|---|---|
| A fault was found to have been reported twice in the report to Balina Council. | Essential Energy has multiple layers of review for all IPART reporting; however Essential Energy will document potential errors in the Basis of Preparation documentation as they are identified. |
| Two Minor Capital Works were not completed within 90 days and were left off the Annual Performance Reports. | Essential Energy will reiterate business rules and regulatory requirements to the Public Lighting Team and Operations teams. |
| Two Minor Capital Works were not completed within 90 days and were left off the Annual Customer Reports. | Essential Energy will reiterate business rules and regulatory requirements to the Public Lighting Team and Operations teams. |
| Reported in their Annual Performance Report that no night patrol happened for Gunnedah Shire Councils when it actually was completed. | Essential Energy has multiple layers of review for all IPART reporting; however Essential Energy will document potential errors in the Basis of Preparation documentation as they are identified. |
| An Annual Report was not provided to 3 customers since their address was not known. | Essential Energy has multiple layers of review for all IPART reporting; however Essential Energy will document potential errors in the Basis of Preparation documentation as they are identified. |
| Essential Energy did not provide Annual Customer Report for 2022-23 FY to NSW Trade and Investment, Southern Down Regional Council, and State Rail Authority. | Essential Energy will provide all Annual Customer Reports and Quarterly Reports to all NSW Customers per the definition under the NSW Public Lighting Code. |
| Essential Energy undertook night patrols for NSW Trade and Investment and Gunnedah Shire Council however did not report this in their annual performance report. | Essential Energy has multiple layers of review for all IPART reporting; however Essential Energy will document potential errors in the Basis of Preparation documentation as they are identified. |
| Essential Energy did not provide Quarterly Reports for Q1 and Q2 of 2023-24 FY to NSW Trade and Investment and State Rail Authority. | Essential Energy will provide all Annual Customer Reports and Quarterly Reports to all NSW Customers per the definition under the NSW Public Lighting Code. |

### Findings with systems and procedures that support future compliance

Both Ausgrid and Essential Energy were found to have systems and procedures that were either not followed or not adequate, leading to the 3 non-material non-compliances detailed in Table 2.8 and Table 2.9. None related to a breach of the Public Lighting Code.

A summary of the auditor's finding against Ausgrid, and Ausgrid's proposed rectification action is shown in Table 2.8. A summary of the auditor's findings against Essential Energy, and Essential Energy's proposed rectification actions, are shown in Table 2.9. In all cases, these were identified by the auditors as non-material non-compliances.

#### Table 2.88 – Auditor's findings with Ausgrid's systems or procedures (not resulting in a Code breach)

| Summary of Auditor's finding | Ausgrid's proposed rectification actions |
|---|---|
| Faults received after 5pm on a business day were erroneously registered in the system as having been received the following business day. | Ausgrid implemented a system change to calculate business days in line with the updated requirements. The change has been communicated to relevant teams and performance will be monitored. |

#### Table 2.99 – Auditor's findings with Essential Energy's systems or procedures (not resulting in a Code breach)

| Summary of Auditor's finding | Essential Energy's proposed rectification actions |
|---|---|
| Random sampling of ten fault records shows one of them was a Complex Fault yet incorrectly categorised as a General Fault (noting that General Faults have a more onerous repair standard than Complex Faults, so this error is not to Essential Energy's advantage). | Essential Energy has multiple layers of review for all IPART reporting; however Essential Energy will document potential errors in the Basis of Preparation documentation as they are identified. |
| Internal document was out of date, referring to an old definition of a complex fault and an old timeframe for priority fault completion. | Essential Energy follows document and change management practices, however, due to the need to consult under the NSW Public Lighting Code and in the interest of working proactively with our customers, was delayed in issuing an approved Public Lighting Management Plan and Maintenance Standard. Essential Energy will endeavour to update policies and procedures in a timely manner. |

After consideration of the audit reports and rectification plans for all three Service Providers, the ENR Committee has decided not to take any compliance action at this point. The Service Providers must rectify non-compliance from this audit and this may be tested in a future audit directed by IPART.

## 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).[15] 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).

[15] 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.

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 did not report any non-compliances with the Code of Practice. We received only one customer complaint about Ausgrid's compliance with the Code of Practice. However, we investigated the complaint and found that Ausgrid was compliant with their obligations under the Code of Practice.

## 2.5 Distribution Districts

In accordance with the licence conditions applicable until 6 September 2023, the distribution network operators (Ausgrid, Endeavour Energy and Essential Energy) needed 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*.

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 provided their distribution district reports for 2023-24 and reported that no activity occurred outside of their distribution district for the period 1 July 2023 until 6 September 2023.

New licences commenced on 7 September 2023 and the distribution network operators are no longer required to:

- obtain approval and authorisation from IPART before they extend their network outside of their distribution districts
- report any activity outside of their distribution district to IPART.

## 2.6 Reporting in accordance with reporting manuals

Transgrid, Ausgrid, Endeavour Energy and Essential Energy's licences require that they 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 4.5 for further details.

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). However, Endeavour Energy failed to provide its Basis of Preparation document[16] to IPART with the annual safety management system performance report. Refer below for further details.

### Endeavour Energy

Endeavour Energy's Basis of Preparation document was not submitted to IPART by the 31 October 2023 deadline and was subsequently submitted on 1 December 2023. IPART notified Endeavour Energy on 15 December 2023 that this constitutes a breach of condition 9 of Endeavour's distribution licence, specifically non-compliance with IPART's reporting manuals. We do not propose to take any further action in response to this licence breach because Endeavour Energy's safety management system performance reports, which included most of the required information, was provided on time.

## 2.7 Payment of Licence Fees

Endeavour Energy was late in its payment of the 2023–24 licence fee (by 6 days). Payment was made when IPART notified Endeavour Energy of the outstanding payment.

[16] This document contains sources for the reported data and any other information that may assist IPART and auditors in understanding the information reported in the safety management system performance report.

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).[17]

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 regulate the safety or reliability of the gas reticulation or gas distribution networks.[18] We also note that gas network operators' licences or authorisations 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.[19]

Most natural gas reticulators submitted their annual compliance reports by the due date. Allgas Energy Pty Ltd submitted its report on 11 September 2024. All natural gas reticulators reported no non-compliances in 2023–24 and we did not identify any non-compliances with the conditions of the reticulator authorisations.

Table 3.11 provides a list of natural gas reticulators and details of their 2023–24 operating statistics.

[17] Distribution pipelines and distribution systems exclude any pipelines regulated under the *Pipelines Act (NSW) 1967*.
[18] The Department of Climate Change, Energy, the Environment and Water is the safety regulator of the gas industry.
[19] A reticulator must provide operating statistics and performance indicators as required under clause 8 of the *Reticulator's Authorisation*.

## Table 3.11 Overview of natural gas reticulators and operating statistics, 2023–24

| Reticulator | DPIs[a] supplied as at 30 June 2024[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 | 1,394 | 1,383 | 11 | 41 |
| Australian Gas Networks (Albury) Ltd | 31,648 | 31,575 | 73 | 818 |
| Australian Gas Networks (NSW) Ltd | 32,347 | 32,282 | 65 | 1,267[c] |
| Central Ranges Pipeline Pty Ltd | 4,655 | 4,622 | 33 | 280 |
| Evoenergy[d] | 22,172 | 22,133 | 39 | 754 |
| Jemena Gas Networks (NSW) Ltd. | 1,560,668 | 1,557,141 | 3,527 | 26,548 |
| Total | | | | |

a. Delivery Point Identifier.
b. Number of customers.
c. Excludes 64 km for the Tumut Valley pipeline.
d. Formerly ActewAGL Distribution Ltd.

Source: 2023–24 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,[20] and
- Origin Energy LPG Ltd.

The gas distributors reported no non-compliances with the conditions of their distributor licences in 2023–24.[21]

[20] Jemena Gas Networks distributor's licence authorises the distribution of a mixture of natural gas and hydrogen through an existing distribution system.
[21] Annual compliance reporting for gas distribution licence holders is exception-based.

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.[22] This chapter summarises the network operators' compliance with these obligations for 2023–24.

## 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 4.11 Risk management 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.

[22] 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 4.11 provides details of the network operators with assets in NSW.

## Table 4.11 Electricity network operators with assets in NSW, 2023–24

| **Licensed electricity network operators** | |
|---|---|
| Transgrid<br>(transmission network operator) | Ausgrid<br>(distribution network operator) |
| Endeavour Energy<br>(distribution network operator) | Essential Energy<br>(distribution network operator) |
| **Other NSW electricity network operators** | |
| Sydney Trains<br>(non-licensed distribution network operator) | Directlink<br>(non-licensed transmission network operator) |
| Lord Howe Island Board<br>(non-licensed distribution network operator) | Metro Trains Sydney<br>(non-licensed distribution network operator) |
| ALTRAC - Sydney light rail<br>(non-licensed distribution network operator) | Keolis Downer Hunter - Newcastle light rail<br>(non-licensed distribution network operator) |
| Great River City Light Rail – Parramatta light rail<br>(non-licensed distribution network operator) | |
| **Interstate electricity network operators with network assets in NSW** | |
| Evoenergy<br>(Australian Capital Territory) | AusNet Services<br>(Victoria) |
| Powercor<br>(Victoria) | Energex<br>(Queensland) |
| Ergon Energy<br>(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 networks
- the protection of property (whether or not belonging to a network operator)
- the management of safety risks arising from the protection of the environment (for example, preventing bush fires that may be ignited by network assets), and
- the management of safety risks arising from the loss of electricity supply.

### Box 4.22 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.[23]

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. Reports consist of 2 parts as detailed below:

- **Annual Safety performance** – which includes details of:
  - safety incidents and near misses
  - vegetation contact with conductors
  - reliability incidents
  - internal and external audits, and
  - planned inspection tasks, outstanding inspection tasks, identified corrective action tasks and outstanding corrective action tasks for network assets and vegetation. Outstanding inspections and corrective actions for assets and vegetation may increase the bush fire risk on bush fire land and the risk to public safety.
- **Bush fire preparedness** – which includes details of:
  - aerial consumers mains on bush fire prone land and
  - pre-summer bush fire inspections (PSBI)[24] and resultant vegetation and asset tasks.

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.

[23] The Tribunal may however exempt network operators from 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, Great River City Light Rail, Keolis Downer Hunter and the interstate network operators from complying with publishing requirements under clauses 10(2) and 10(3) of the ESSNM Regulation. The Tribunal has in some cases imposed additional conditions so that IPART still has oversight of the exempt operators.

[24] Each year, licensed network operators and Sydney Trains, undertake patrols of network assets located in high risk bushfire prone areas in the months prior to the Bushfire Danger Period. These patrols allow for the identification and rectification of defects that pose a genuine risk of initiating a bushfire. PSBI is in addition to routine and cyclic maintenance activities.

Based on our analysis of the SMS performance reports:

- Ausgrid, Essential Energy and Endeavour Energy reported varying numbers of outstanding asset inspection and corrective action tasks. Transgrid did not report any outstanding asset tasks. Ausgrid also reported that the number of 'protection relays or systems' failures had increased above the 5-year average, and Endeavour Energy reported an increase in the number of sustained voltage excursions outside the emergency range.

  We sought additional information from the network operators to assist us in understanding the varying numbers of outstanding asset inspection and corrective action tasks in some areas. As part of their detailed and comprehensive responses, network operators confirmed that any outstanding asset inspection or corrective action tasks do not pose a significant risk to the public, worker safety or network reliability.
- for routine/cyclic asset and vegetation inspections, Essential Energy had outstanding vegetation inspections as detailed in section 4.2.1.
- for PSBI, Ausgrid and Transgrid reported no outstanding inspection or corrective action tasks, and we note a significant improvement from Essential Energy and Endeavour Energy. Refer also to section 4.2.3 for details of PSBI inspection tasks.
- 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 where relevant.

### 4.2.1 Essential Energy had outstanding vegetation inspections

Essential Energy reported 2,479 outstanding routine/cyclic vegetation inspections in their P1[25] areas and 2,741 outstanding routine/cyclic vegetation inspections in their P2[26] areas.

Essential Energy advised that "vegetation management is predominately outsourced to external suppliers. Delivery of the 2022-23 vegetation management program was hampered by a constrained national labour market, increased growth due to weather conditions and access issues due to wet weather. 93% of the inspection program was completed, 78% of scheduled treatment was executed.

Ongoing quality and productivity issues with one supplier resulted in a mutual agreement to forfeit a contract area, requiring an unplanned service procurement exercise. An alternative service provider was appointed in July 2024. Lack of qualified resources in the area caused resourcing this contract area to a level needed to deliver the scope of works to take longer than expected. However, work quality and completion has now lifted to the levels expected.

Recognising the challenges mentioned above, and to assist contractors with obtaining additional labour and managing inflationary pressures, Essential Energy has negotiated an uplift to each of the contracts, as well as adjustments to payment terms. In addition, a fourth contractor was appointed in July 2024 with a focus on P1 areas to accelerate the alignment to the program."

[25] Areas considered to be high bush fire risk. Essential Energy also performs a pre-summer bush fire inspection in these areas (refer to section 4.2.3 for further details)..
[26] Areas considered to be moderate bush fire risk.

In response to IPART's enquiries, Essential Energy provided an update on 24 January 2024 that showed the numbers of outstanding inspection tasks had reached 19,055 (P1) and 9,597 (P2).

The ENR Committee sought from Essential Energy that they:

- formulate and provide to IPART by 1 March 2024:
  - a comprehensive rectification plan detailing how it will ensure that all vegetation maintenance tasks are up to date
  - a comprehensive set of reporting metrics that can be used to demonstrate progress against the rectification plan.
- provide a report of progress against the rectification plan to IPART in the first week of each month until the rectification plan is completed or until the 2023-24 SMS performance report is due.

Essential Energy provided a rectification plan for the backlog of overdue vegetation maintenance tasks defined in two streams:

### Stream 1

- P1 areas: all overdue inspection tasks, high risk grow-in tasks (A1, A2) and Fall-in tasks completed or in active management by 1 October 2024.
- Pre-Summer Bushfire Inspections (PSBI): all tasks identified from the P1 area flyover inspections (February-April 2024) to be completed or in active management by 1 October 2024.
- P2 areas: overdue Fall-in tasks outstanding to be less than the 5% overdue threshold by 1 October 2024.

### Stream 2

Concurrently, Essential Energy will determine a quantified risk-based backlog rectification schedule for all remaining forms of overdue vegetation maintenance tasks. This will include:

- current and forecast task completion productivity based on anticipated resource availability
- quantitative and semi-quantitative risk assessments relating to vegetation maintenance task types to determine relative hazard mitigation value, and identify task types and volumes not considered to be reasonably practicable to complete given available resources
- consideration of alternative or additional risk controls to manage residual risk to 'so far as is reasonably practicable'.

Essential Energy's rectification plan also included short-term resource redirection towards P1 areas for Stream 1 tasks, medium-term resource uplift and performance monitoring improvements.

Essential Energy's September 2024 rectification plan update showed that:

- Of the outstanding Stream 1 tasks, only 5 bays remained to be inspected and 69 high risk tasks remained outstanding. All of these tasks are in active management and the bushfire risk is being actively monitored.

- There were 5 Pre-Summer Bush fire Inspection tasks overdue as at the 30 September. Four of these were rework requirements that were completed in the first week of October. The remaining task require network augmentation and are in planning.
- Overdue P2 fall-in tasks had reduced to 99 overdue and had been reviewed and deemed not an immediate risk. These tasks will continue to be a priority.
- Overdue treatment tasks for Stream 1 had reduced in all categories, due to resources prioritising bush fire preparedness tasks. However, the accelerated inspection program and focus on Stream 1 tasks has led to an increase in overdue P1 and P2 tasks in lower risk categories. P3 and P4 overdue tasks have reduced, as vegetation contactors have been able to increase resources and improve performance.

IPART continues to actively supervise Essential Energy's progress against the rectification plan. IPART has also directed an audit for later in 2024 which includes provisions for the auditor to assess whether Essential Energy has taken all reasonable actions to reduce their bush fire risk to as low as reasonably practicable when it failed or is failing to effectively implement its vegetation management processes and procedures.

### 4.2.2 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 Ergon Energy, Energex, Evoenergy, AusNet Services (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 Ergon Energy, Energex, AusNet, Evoenergy and Powercor to provide annual bush fire preparedness reports to IPART by 31 October each year as a condition of the exemption.

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.[27]

[27] Interstate network operators did not report any serious electricity works accidents reported involving their NSW electricity assets during 2023–24.

### 4.2.3 Bush fire preparedness reports

In accordance with IPART's SMS Reporting Manual, Transgrid, Ausgrid, Endeavour Energy, Essential Energy and Sydney Trains submitted reports by 31 October 2023 detailing their preparedness for the 2023–24 bush fire season.[28]

All interstate network operators with assets in NSW submitted bush fire preparedness reports for the 2023–24 bush fire season.

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 and on details of aerial consumers mains on bush fire prone land.

All licensed network operators reported no outstanding pre-summer bush fire inspections. Outstanding vegetation and asset tasks were completed as of 1 December 2023. Refer to section 4.2.1 for details of Essential Energy's outstanding routine/cyclic vegetation inspections.

#### Ausgrid

Ausgrid reported no outstanding pre-summer bushfire preparedness tasks including inspections, private mains inspections, vegetation maintenance tasks, and asset tasks.

#### Endeavour Energy

Endeavour Energy reported no outstanding pre-summer bushfire inspections, asset tasks, and private mains inspections. However, 16 outstanding vegetation maintenance tasks were reported against the 30 September 2023 target. IPART has monitored Endeavour Energy's progress on these outstanding tasks and Endeavour Energy subsequently reported on 1 December 2023, that all outstanding vegetation maintenance tasks were cleared.

[28] Network operators must also provide a separate 'basis of preparation' (BOP) document to IPART with the annual performance report. Endeavour Energy failed to provide its BOP document by the due date and only submitted the document on 1 December 2023.

## Essential Energy

Essential Energy reported no outstanding pre-summer bushfire inspections and private mains inspections. Essential Energy had 7 outstanding vegetation maintenance tasks and 10 outstanding asset tasks, all in the P1[29] bush fire risk priority area. All of the outstanding tasks were reported as completed as of 1 December 2023.

## Transgrid

Transgrid reported no outstanding pre-summer bushfire inspections, vegetation maintenance tasks, and asset tasks. Transgrid also carried out an additional 1,468 vegetation maintenance tasks (non-priority) to proactively keep vegetation outside the minimum safe approach distance.

## Other network operators

We did not require a bush fire preparedness report from Lord Howe Island Board, Metro Trains Sydney, ALTRAC, Keolis Downer Hunter and Great River City Light Rail for the 2023–24 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 (AusNet), Powercor, Directlink and Evoenergy.

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

**Sydney Trains** reported no outstanding pre-summer bush fire inspections. However, it reported:

- 141 outstanding Category 2[30] vegetation maintenance tasks
- 56 open hazard trees
- outstanding asset tasks comprising of 4 Category 2 defects and 667 Category 3-4[31] defects.

In February 2024, Sydney Trains provided an update noting that as of 30 November 2023, there were no outstanding vegetation maintenance tasks, and that 15 hazard tree tasks remained open and were scheduled for completion between March to August 2024. The update also noted that the 4 Category 2 defects were closed, and that the outstanding category 3-4 defects would be completed throughout the year as per the rules defined by Sydney Trains' defect management systems.

**AusNet** performed all necessary asset and vegetation inspections for all of its distribution and transmission networks and easements in NSW. All asset maintenance tasks were completed, and 21 open vegetation maintenance tasks concerning transmission assets were scheduled to be completed in February 2024.

[29] P1 classification = High risk severity.
[30] Sydney Trains' Category 2 bush fire risk priority - Defects that are to be completed between 8-31 days.
[31] Sydney Trains' Category 3 &4 bush fire risk priority - Defects that are to be completed after 31 days or more.

**Powercor** reported completion of all vegetation and asset inspections, and that all maintenance items identified during the inspection of the assets were being managed in accordance with its priority policy timeframes.

**Directlink** did not report any events or incidents associated with bush fire risk management. Despite completing all inspections of its transmission substations, 16 out of 55 (29%) of corrective action tasks identified remained outstanding. However, the bush fire preparedness report did not present significant concerns given the underground design of Directlink's infrastructure.

**Evoenergy** performed necessary asset and vegetation inspections with all 290 spans and 295 poles in NSW inspected, and completed all vegetation and asset tasks prior to the commencement of the bush fire danger period.

### Energy Queensland (Ergon Energy and Energex)

In our *Energy Networks Annual Compliance Report 2022–23,* we noted that Energy Queensland (representing Ergon Energy and Energex) did not submit its 2022–23 bush fire preparedness report to IPART. The Secretariat then sought further information from Energy Queensland to obtain information on its bush fire preparedness and also wrote to Energy Queensland to draw attention to the relevant IPART reporting manual and clarified reporting requirements in preparation for the 2023-24 bush fire season.

Energy Queensland submitted Ergon Energy's 2023-24 bush fire preparedness report to IPART by 31 October 2023. Ergon Energy is a subsidiary of Energy Queensland and operates a relatively small electrical distribution network in northern NSW.

Ergon Energy reported no outstanding asset maintenance tasks as of 30 September 2023. The report also noted that Ergon Energy's asset maintenance and inspection program does not include any pre-bushfire season specific inspection or maintenance tasks. Rather, a routine 4 to 5 year cyclic maintenance inspection and standard defect rectification process applies universally across the Ergon Energy distribution network.

## 4.3 Bush fire risk management audits of network operators

In 2023, we directed field audits of the bush fire risk management components of Ausgrid, Endeavour Energy, Essential Energy and Sydney Train's Electricity Network Safety Management Systems (ENSMS).

The nature of this audit was different to previous ENSMS audits we have directed. The field audits focused on the inspection of vegetation management outcomes (as this is a key risk factor for bush fires). In past audits, the auditor generally spent most of their time assessing a network operator's records and procedures for managing bush fire risk.

Although in previous audits the auditors identified non-compliances (which were mostly non-material), they generally considered the network operators' ENSMS to be mature. Therefore, targeting the effectiveness of bush fire risk management controls through field observations would provide a more complete picture of the implementation of a network operator's bush fire risk management practices.

In summary, IPART's audit directions required that the auditor:

1. assess the implementation of the ENSMS by examining the pre-bush fire season vegetation management outcomes through field observations of both overhead lines and private aerial consumer mains in bush fire prone land. This included an inspection of both grow-in hazards and fall-in hazards.
2. identify any hardware conditions that are visible from the ground and represent an immediate bush fire risk
3. assess previous non-compliances.

The audits commenced in October 2023 and the final audit reports were submitted to IPART by the due date in February 2024.

We did not direct an audit of the bush fire risk management component of Transgrid's ENSMS, 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 Transgrid power lines. We therefore consider that bush fire risks from transmission assets are less than those from distribution assets.

### 4.3.1 Ausgrid's bush fire risk management audit

The auditor found 2 material non-compliances with Ausgrid's vegetation management.

However, the auditor considers that the ENSMS is appropriate and is generally being implemented.

The auditor noted that:

> Ausgrid's safety management system is generally in accordance with AS 5577 and adequately deals with the safety and reliability of the network through its risk-based approach.

and

> Given the size of Ausgrid's network and the type of assets located within, the safety management system adequately covers all relevant types of assets with respect to managing bushfire safety risk.

The auditor also found that Ausgrid has adequately addressed the non-compliances from its previous bush fire risk management audit.

## Table 4.22 Summary of non-compliances and Ausgrid's response

| Auditor's description of non-compliances | Ausgrid's proposed rectification actions |
|---|---|
| **Ausgrid failed to carry out vegetation inspections on LV service lines**<br>The infield inspector identified vegetation encroaching service lines at multiple properties. The auditor noted that in some circumstances, trimming vegetation around service lines is the responsibility of the property owner; however, Ausgrid's vegetation management standard requires Ausgrid to inspect the service line and where the property owner is responsible, issue a notification to the property owner that vegetation trimming is required. Upon further investigation, Ausgrid identified a failure within its "Enterprise Resource Planning" processes of the asset management system to create tasks to carry out vegetation inspections on service lines. Ausgrid also identified 3,836 suspected locations where inspection tasks may not have been generated to ensure that encroaching vegetation was identified on consumers mains and service lines.<br>The auditor found that Ausgrid was not effectively fulfilling its obligation to ensure that vegetation remained clear of service lines. | Ausgrid stated in its rectification plan that its investigation identified the underlying systemic causes that led to the non-compliance. These causal factors include:<br>• an inadequacy in the process of updating asset data records to accurately reflect the span construction as it exists in the field, and<br>• a deficiency in the Enterprise Resource Planning system.<br>Ausgrid noted that it is committed to addressing the causes of the non-compliance and rectifying its ENSMS to comply with the obligation to clear vegetation around service mains. |
| **A vegetation defect was not identified by Ausgrid during the Pre-summer Bushfire Inspections**<br>During the field inspections, an A2 vegetation was identified on Ausgrid's network that was not previously identified since the last inspection in May 2023. The auditor noted that Ausgrid's vegetation management process failed to identify and rectify all hazardous vegetation before the start of the bush fire danger period commencing in 2023. | Ausgrid stated in its Rectification Plan that its investigation identified a failure to verify the correct installation for inspection due to incorrect asset address information. Ausgrid has identified actions to improve the delivery of the private lines and service mains inspection process and the assurance of these processes. |
| | **Ausgrid will undertake an audit to test the implemented controls**<br>Ausgrid's rectification plan also noted that it will undertake an audit to validate if the bush fire risk control treatment actions identified in its rectification plan have been effectively implemented to address the audit non-compliances.<br>The audit will be undertaken by 31 March 2025. IPART has sought a copy of the final audit report. |

After consideration of the audit report and Ausgrid's proposed rectification plan, the ENR Committee wrote to Ausgrid to seek written updates detailing progress against its rectification plan by 13 September 2024 and 14 February 2025.

Ausgrid responded with an initial update on its rectification plan on 12 September 2024, which indicated that 9 actions are now complete and the remaining 3 actions are 'on track'.

Ausgrid's rectification of the non-compliances from this ENSMS audit will be tested in an upcoming ENSMS audit directed by IPART and will be reported in next year's report to the Minister.

### 4.3.2 Endeavour Energy's bush fire risk management audit

The audit of Endeavour Energy's network identified 2 material non-compliances. Field inspections identified 12 observations where bush fire preparation controls had not been effectively implemented in accordance with the ENSMS. The 12 observations constitute the non-compliances identified in the audit.

However, the auditor considered that the ENSMS is appropriate and is generally being implemented.

The auditor noted that:

> Endeavour Energy's safety management system is generally in accordance with AS 5577 and adequately deals with the safety and reliability of the network through its risk-based approach.

and

> Given the size of Endeavour Energy's network and the type of assets located within, the safety management system adequately covers all relevant types of assets with respect to managing bushfire safety risk.

The auditor also found that Endeavour Energy has adequately addressed the non-compliances from its previous bush fire risk management audit.[32]

## Table 4.33 Summary of non-compliances and Endeavour Energy's response

| Auditor's description of non-compliances | Endeavour Energy's proposed rectification actions |
|---|---|
| **Endeavour Energy was non-compliant with the identification and rectification of hardware defects.** The auditor noted 2 hardware defects that were identified during field inspections. One of the errors occurred due to a data processing error that resulted in the defect not being rectified. Endeavour Energy actioned the defect upon being made aware of the error. | Endeavour Energy noted in its rectification plan that it has addressed the identified control effectiveness weakening factor by implementing an additional cross-check assurance step in the defect entry process.<br>The other hardware defect involved a material blowing over the mains. The auditor noted that this defect occurred since the previous hardware inspections and was rectified by Endeavour Energy immediately upon notification. |
| **Endeavour Energy was non-compliant with the identification and rectification of vegetation encroachments and hazard trees.** Field inspections identified 10 vegetation encroachments and fall-in risks that had not been rectified. These defects fell into two categories; encroachments that were previously identified as lower severity by Endeavour Energy, and defects not previously identified. | Endeavour Energy has included the following actions in its rectification plan to address this non-compliance:<br>• Review the cyclic vegetation trimming program schedule to identify ways to reduce defect rates and lower the risk of vegetation grow ins<br>• Review the process used for forecasting potential vegetation defects<br>• Crews to attend a refresher briefing to reinforce trimming standards, hazard tree identification, and reporting. |

Endeavour Energy also noted in its rectification plan that it has:

- taken immediate actions to ensure measures were in place for the 2024 pre-summer bushfire inspection program. These actions relate to the additional cross-check assurance step in the defect entry process and the refresher briefing of crew to reinforce trimming standards, the latter having been completed in February 2024.
- commenced a review on the key aspects of the vegetation trimming standards drawing on analysis and modelling using data collected during the 2024 pre-summer bush fire inspection cycle as well as the current routine/cyclic vegetation maintenance program.

[32] Endeavour Energy wrote a letter to IPART on 21 December 2023 providing an update on the completion of actions in response to IPART's direction to modify its ENSMS to rectify the material non-compliance detailed in its 2023 bush fire risk management audit report.

After consideration of the audit report and Endeavour Energy's proposed rectification plan, the ENR Committee wrote to Endeavour Energy to seek a written update detailing progress against its rectification plan, and the outcome and possible actions from the review, by 14 December 2024.

Endeavour Energy's rectification of the non-compliances from this ENSMS audit will be tested in an upcoming ENSMS audit directed by IPART and will be reported in next year's report to the Minister.

### 4.3.3 Essential Energy's bush fire risk management audit

The auditor identified 1 material non-compliance with Essential Energy's implementation of its ENSMS. Field inspections identified 25 instances where bush fire preparation controls had not been effectively implemented in accordance with Essential Energy's ENSMS. These 25 observations constitute the non-compliance identified in the audit.

However, the auditor considered that the ENSMS is appropriate and is generally being implemented.

The auditor noted that:

> Essential Energy's safety management system is generally in accordance with AS 5577 and adequately deals with the safety and reliability of the network through its risk-based approach.

and

> Given the size of Essential Energy's network and the type of assets located within, the safety management system adequately covers all relevant types of assets with respect to managing bushfire safety risk.

The auditor also found that Essential Energy has adequately addressed the non-compliances from its previous bush fire risk management audit.

## Table 4.44 Summary of non-compliances and Essential Energy's response

| Auditor's description of non-compliances | Essential Energy's proposed rectification actions |
|---|---|
| **Essential Energy was non-compliant with the identification and rectification of vegetation encroachments and hazard trees.**<br>Essential Energy failed to identify or correctly address vegetation defects in some instances.<br>The auditor noted that the field inspectors observed several vegetation encroachments on Essential Energy's network. The auditor observed instances where Essential Energy's vegetation management process failed to identify and rectify all hazardous vegetation before the start of the bushfire danger period commencing in 2023.<br>These observations fell within the following categories:<br>• vegetation encroachments previously identified as lower severity by Essential Energy<br>• defects not previously identified by Essential Energy<br>• defects previously identified but not rectified adequately.<br>For each vegetation defect observed in the audit, Essential Energy immediately raised a task for action. | Essential Energy noted in its rectification plan that it has completed a review of the factors leading to defects at each site where observations were recorded. Further information is provided below. |

Essential Energy's review of the factors leading to defects concurred with the results of the audit findings, noting:

- several fall-in hazards should have been identified by the contracted Service Provider during routine vegetation inspection (incorrect scoping)
- appropriate regrowth allowance was not applied in some locations when trimming vegetation (incorrect treatment)
- the volume of encroachments found in some locations was also due to the scheduled treatment date or cycle length being exceeded (schedule not adhered).

Essential Energy identified and committed to 5 improvement areas for its vegetation management assurance activities:

1. Formal instruction to be provided to the related vegetation service providers to improve identification of fall-in risk vegetation during inspection, and application of appropriate regrowth allowances during treatment.
2. 'Toolbox talks' or similar style of operational communication to be provided to all Essential Energy and contracted vegetation service provider personnel to consider site and species-specific regrowth expectations when trimming vegetation.
3. Strengthen auditing reporting and include trend analysis on numbers of minimum vegetation clearance encroachments and percentage of vegetation audit failures within bushfire risk assurance dashboard monitoring.
4. Refresh training and competence assessment program on fall-in hazard identification to be delivered to all persons conducting vegetation inspection.
5. Conduct an independent Internal audit of Essential Energy's in-field assurance activities, including the quantity of inspections, sample sizes, methodology and consideration of an additional auditing layer (audit the auditor).

After consideration of the audit report and Essential Energy's proposed rectification plan, the ENR Committee wrote to Essential Energy to seek a written update detailing progress against its rectification plan by 28 September 2024 and 14 December 2024. For the December update, the ENR Committee also sought from Essential Energy a copy of the final audit report from the independent internal audit.

Essential Energy responded with an initial update on its rectification plan on 24 September 2024, which indicated that 3 actions are now complete and the remaining 2 actions are 'on track'.

Essential Energy's rectification of the non-compliances from this ENSMS audit will be tested in an upcoming ENSMS audit directed by IPART and will be reported in next year's report to the Minister.

### 4.3.4 Sydney Trains' bush fire risk management audit

The audit of Sydney Train's electrical network identified 5 non-material non-compliances. These non-compliances were in relation to 2 vegetation and 3 asset maintenance defects identified during field inspections.

However, the auditor considered that Sydney Trains is meeting its obligations through implementation of its ENSMS.

The auditor also identified key strengths in Sydney Trains' bush fire risk management stating that:

> Sydney Trains conducts a LIDAR[33] survey along each of the areas identified as a bushfire risk and is used to help identify potential vegetation hazards.

and

> It is clear that the regional maintenance engineers undertake regular visits and inspections along their assets and understand each area.

## Table 4.55 Summary of non-compliances and Sydney Trains' response

| Auditor's description of non-compliances | Sydney Trains' proposed rectification actions |
|---|---|
| **2 vegetation defects related to grow in hazards** - Minor item that may not have been captured during the last vegetation management activity. | Planned completion in accordance with defect guidelines. |
| **3 asset defects** consisting of 2 poles that had started to bow, and one instance of a bracket with its bolts dislodged from the pole. | Planned completion in accordance with defect guidelines. |

### The auditor identified an additional finding for Sydney Trains to consider

The audit also identified a public safety concern which, while not constituting a non-compliance with Sydney Trains' ENSMS or obligations under AS 5577, nevertheless requires Sydney Trains to take actions to address the concern as part of their rectification plan. This concern related to a length of continuous walkway and metal fencing underneath bare 66kV overhead lines, located at Blaxland Public School. These overhead lines predate this walkway and fencing, which was installed by a third party against advice from Sydney Trains.

Sydney Trains wrote to IPART noting that the issue is recorded in its register of structures under aerial lines. Sydney Trains advised it has already taken some actions to reduce the safety risk and that it proposes to work with the school and/or Department of Education to implement potential further actions.

The ENR committee sought a progress update on Sydney Trains rectification plan by 30 September 2024. Sydney Trains provided an update on its rectification plan on 2 October 2024 which indicated that:

- all rectification actions were now closed, and
- the walkway under the 66kV overhead line at Blaxland Public School was removed and insulation panels installed on fences under the aerial line.

[33] Laser imaging, detection, and ranging.

### 4.3.5 Ergon Energy bush fire risk management audit

In June 2024, the ENR Committee directed Ergon Energy to conduct an audit of its bush fire risk management of its assets in NSW.[34] Ergon Energy undertakes annual Safety Management System audits commissioned by the Queensland regulator Electrical Safety Office (ESO).[35] However the ESO noted, that due to the impact of jurisdictional constraints, these annual audits can only examine assets within Queensland and only against Queensland legislation.

The ENR Committee therefore considered a field-based bush fire risk management audit of Ergon Energy's NSW assets to be appropriate, given the insights provided by recent similar bush fire risk management audits of NSW network operators.

The final audit report is due to IPART by 28 February 2025, and the findings will be reported in our annual compliance report to the Minister next year.

## 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".[36]

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.[37] 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.[38]

We review each incident report to ensure that network operators have taken appropriate action in response to each incident. When required, we seek additional information about the nature and cause of the incident and consider if any compliance action is appropriate.

Figure 4.11 and Figure 4.22 provides an overview of incidents reported to IPART by the licensed electricity network operators in 2023–24 in accordance with the Incident Reporting Manual.

[34] The ENR Committee sent a letter to Ergon Energy containing an Audit direction.
[35] Ergon Energy's Safety Management System also applies to its operation of its assets in NSW.
[36] Dictionary to the ES Act.
[37] Clause 9 of Ausgrid, Endeavour Energy and Essential Energy's licences and clause 8 of Transgrid's licence.
[38] 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.

### 4.4.1 Significant safety incidents

In 2023–24, the electricity network operators reported 4 incidents that resulted in the loss of 5 lives.[39] Details of the incidents are provided in Table 4.66.

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

## Table 4.66 Incidents resulting in loss of life, 2023–24

| Parties involved | Type of incident | Incident details |
|---|---|---|
| Accredited Service Provider (ASP) | Electric shock/burn | ASP worker made contact with LV powerlines while in an elevated work platform (EWP). This resulted in a fatality. |
| ENO worker | Other incident affecting people | During works to remove redundant 33kV overhead mains and reconfigure a high voltage pole, a serious incident involving a fall from height resulted in the fatality of a Distribution Lineworker. |
| Member of the public | Other incident affecting people | Light aircraft made contact with a powerline while crossing the Clarence River causing the plane to crash, resulting in two fatalities |
| ENO contractor | Other incident affecting people | A vegetation removal contractor was entering the work basket of an elevated work platform when he received multiple bee stings. Worker's condition deteriorated while being transported to hospital. Worker passed away the following day. |

Over the last 10 years, the average number of the electrical network incidents involving loss of life has been 1.9 per year. Although the number of these incidents in 2023-24 was higher than expected, it is too soon to say if this is a trend.

The Tribunal and the Energy Networks Regulation Committee are concerned about each fatality and serious incident. We liaise with co-regulators including SafeWork NSW to ensure they are aware and to identify actions and lessons to minimise the risks that may have led to these fatalities. We also hold network operators to account to ensure that the root causes and other factors that contributed to each serious incident are identified; and that network operators take appropriate actions and lessons to minimise further risk. We also monitor relevant findings of co-regulators and make further enquiries with stakeholders where appropriate. We consider this information when determining our future regulatory approach.

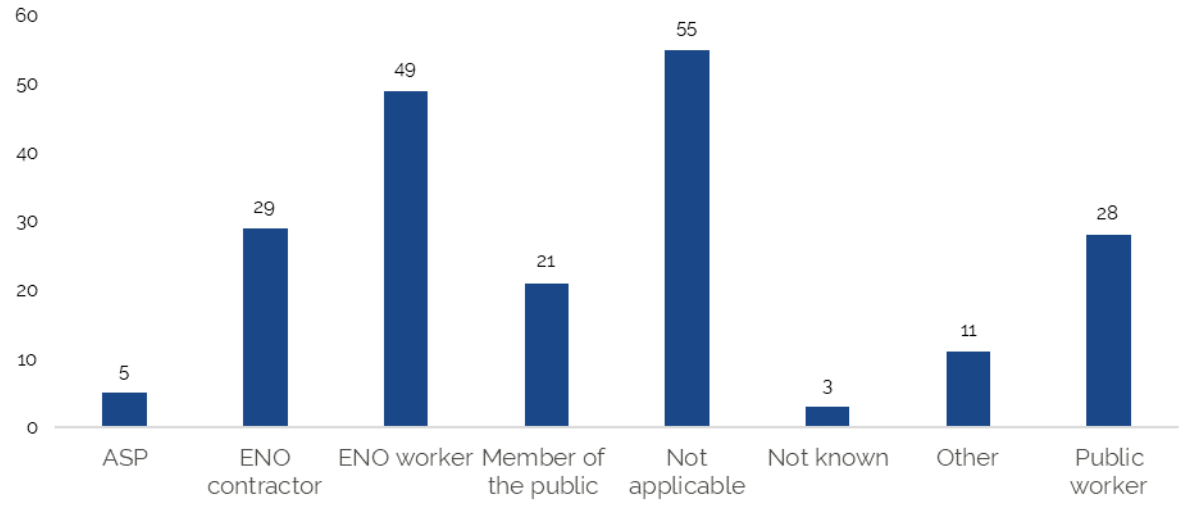
We have also collaborated with Energy Safe Victoria (ESV) to establish an electrical safety forum in response to fatalities and a greater number of serious injuries resulting from contact with energised power lines. Refer to section 5.2.2 for further details.

[39] Excluding incidents involving motor vehicles.

### 4.4.2 Types of incidents reported, and parties affected

In 2023–24, 201 incidents were reported to IPART by the electricity network operators.[40] Figure 4.11 shows the parties that were affected by these incidents, and Figure 4.22 shows the types of incidents that occurred.

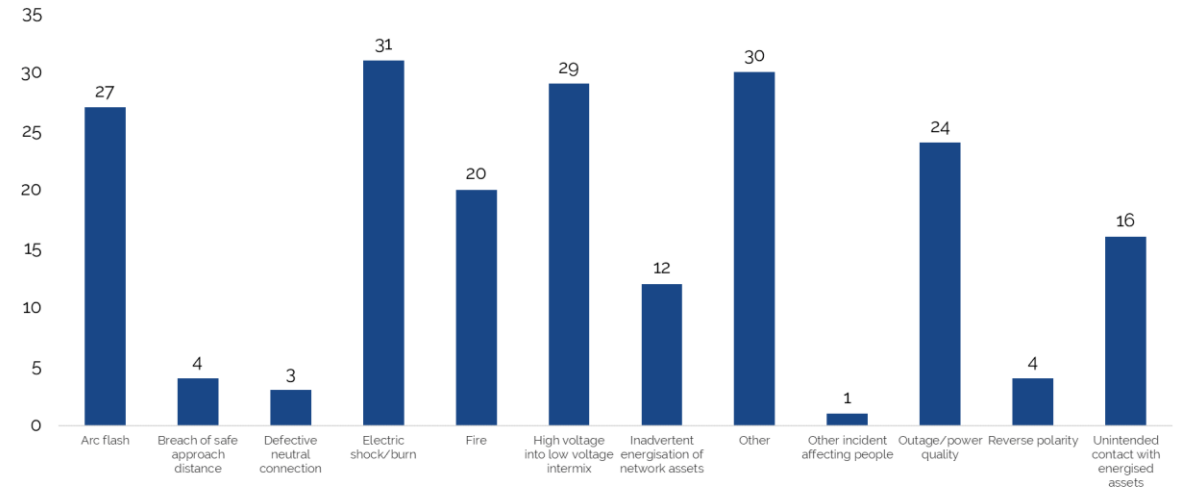
## Figure 4.11 Incidents by party affected in 2023–24




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

Source: Stage 1 incident reports submitted to IPART for incidents that occurred in 2023–24.

## Figure 4.22 Types of incidents reported in 2023–24




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

[40] 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:
An 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.

Source: Stage 1 incident reports submitted to IPART for incidents that occurred in 2023–24.

Incidents related to electric shocks/burns, arc flash and high voltage low voltage intermix events account for a significant proportion of the reported safety incidents. A summary of the networks' proposed mitigative and preventive measures for these incident types are detailed below.

### Electric shock/burn

- Refresher trainings, competency assessments and disciplinary actions for workers involved in the incidents
- Reviewed procedures and processes from opportunities identified in post incident reviews
- Safety briefs developed and distributed to managers, workers and contractors to communicate the awareness of possible hazards identified from incidents
- Continued public safety plan with stakeholders, focussing on correct post-incident procedure, safe isolation protocols and risk awareness
- Public Safety education and awareness materials updated to reflect the importance of observing electrical safety precautions around damaged assets, maintaining safe approach distances and reporting damaged assets immediately.

### Arc flashes

- Involved workers suspended from live work tasks (pending investigation) and only returned to active duties after completing training and competency assessments
- Issuing of safety briefs and alerts to staff clarifying appropriate procedures, testing, and use of tools
- Review and improvement of internal documentation such as operating guidelines, processes, and improvements to design standards
- Public Safety campaigns to increase awareness, provide guidance and promote electrical safety practices and improved communication with stakeholders and third parties to promote awareness of asset locations
- Inspection and improvement of assets where applicable.

### High voltage low voltage intermix events

- Regular maintenance and inspection programs of overhead network assets with focus on high-risk areas
- Ongoing vegetation management actions including inspections and trimming to maintain vegetation clearance around the network
- Improvements to inspection procedures and safety processes from opportunities identified in post incident reviews
- Advising stakeholders, customers and members of the public on proper procedures, safety and awareness of risk
- Monitoring and collating of incident data to inform ongoing maintenance and safety activities

- Consideration of additional engineering controls for known asset vulnerabilities, focussing on those more susceptible to earth faults from wildlife.

## 4.5 Compliance with incident reporting obligations

Network operators mostly reported electricity works incidents[41] in accordance with the legal framework and our Incident Reporting Manual requirements. While Table 4.77 shows instances where they failed to report within the time required, these numbers represent a small fraction of total reporting requirements.

### Table 4.77 Incident reports submitted outside reporting timeframes, 2023–24

| Network operator | Number of reports outside reporting timeframes[a] |
|---|---|
| Transgrid | **2** |
| Ausgrid | **7** |
| Endeavour Energy | **4** |
| Essential Energy | **10** |

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.

In the 2023-24 reporting period, late submissions generally occurred due to mitigating circumstances. Reasons for late submissions provided by the network operators include:

- incorrect categorisation of incidents which were then identified in assurance checks
- procedural and human error
- time taken to receive required information from third parties and stakeholders
- resourcing constraints and new staff being unfamiliar with processes.

[41] 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 the regulated entities, and therefore to the people of NSW.[42]

In some cases, the regulatory framework restricts our ability to apply a risk-based approach in full – for example, where licences require an annual audit against critical infrastructure licence conditions, or the Public Lighting Code specifies the frequency of reporting.

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 2023–24, we:

- assessed the ACEREZ Partnership transmission operator's licence application and recommended the Minister for Energy grant the licence subject to conditions, including critical infrastructure and reliability licence conditions. This Minister subsequently granted ACEREZ Partnership a licence on 19 September 2024.
- initiated a review of the critical infrastructure licence conditions for all licensed network operators
- directed bush fire risk management audits of Ausgrid, Essential Energy and Endeavour Energy to assess their preparation for the 2023-24 bush fire season
- sent audit directions to Ausgrid, Endeavour Energy, Essential Energy, and Transgrid and sought their feedback. The audit directions were to conduct audits of their electricity network safety management system focused on safety from loss of supply risk and bush fire management in 2024-25.
- sent an audit direction to Ergon Energy and sought its feedback. The audit direction was to undertake a bush fire risk management audit of its assets within NSW.
- directed Endeavour Energy to:
  - modify its ENSMS for bush fire risk management
  - modify its systems to comply with the *NSW Public Lighting Code*, and
  - conduct an independent investigation into non-compliance against its critical infrastructure licence conditions.

[42] Refer to Figure 3.1 in our *Compliance and Enforcement Policy* for details of our risk matrix.

- Amended the following reporting manuals and guidelines:
  - *Electricity networks reporting manual – Distribution reliability and performance reporting* to reflect the updated reliability and performance licence conditions applicable from 1 July 2024. We have also amended some existing requirements for added simplicity, to improve auditability and to reduce unnecessary regulatory burden.
  - *Electricity networks audit guideline – Safety management systems – October 2023* to adjust the wording around Appendix A, enabling auditors to design and complete audits that align more directly with AS5577 and applicable regulations.
  - *Electricity networks audit guideline – Critical infrastructure licence conditions audits* to improve visibility of the obligation that critical infrastructure audit proposals include auditing of exemption agreements and protocols in the audit scope.

## 5.1 We published our 2024–25 Compliance Priorities

One of our strategic priorities is regulatory excellence. In pursuit of this, we have published our *2024–25 Compliance Priorities*. We publish our anticipated compliance and enforcement priorities to draw attention to those areas that we see as the greatest risks.

Our 2024–25 Compliance Priorities are:


As a risk-based regulator, we expect to allocate compliance and enforcement resources towards these areas as a priority. Bush fire risk remains an ongoing priority for IPART. However, we continue to also regulate other areas actively and react to events as they occur. For example, while not a nominated priority, we are monitoring the changing nature of networks driven by the transition to more renewable energy.

# 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.

## Our mission

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

## Our regulatory outcomes

These outcomes 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 | Ensure network operators understand climate change risk and are positioned to proactively and efficiently manage it. |
| 06 | To be recognised as an effective regulator through best practice regulation and engaging with stakeholders. |

## 5.2 Our engagement with other government departments and regulatory bodies

We have developed mature 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 Department of Climate Change, Energy, the Environment and Water (DCCEEW), SafeWork NSW and the Cyber and Infrastructure Security Centre within the Commonwealth Department of Home Affairs. We also collaborated with:

- EnergyCo in relation to licensing of network operators for the renewable energy zones
- the Australian Energy Regulator (AER) to participate in their Stand Alone Power System forum and share knowledge about this developing field
- the Electrical Regulatory Authorities Council to share developments from peer regulators
- the Queensland Electrical Safety Office to collaborate on the scope, directions and findings of an audit of Ergon Energy's bush fire risk management, and
- Energy Safe Victoria (ESV) to share knowledge and explore collaborative methods to assess interstate network operators' compliance.

### 5.2.1 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 2023–24, IPART continued to provide summarised information to the ISSC on incidents and near misses reported by the licensed network operators and Sydney Trains. We have also 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.

### 5.2.2 Electrical safety forum

Over the last 2 years, there have been 5 fatalities and a greater number of serious injuries in NSW resulting from contact with energised power lines. IPART has been meeting with ESV who are also concerned about people contacting energised power lines. In response, IPART and ESV worked together to establish a safety forum consisting of the heads or senior officials of the electrical safety regulators and work health and safety regulators from NSW, Victoria, Queensland and ACT.

The initial meeting was held on 17 October 2024 and discussed contact with energised power lines. The forum established that similar issues existed across most jurisdictions, and that there may be further scope for collaboration.

# 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.11 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.[43] 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 the Minister 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.

[43] 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 Hunter (Newcastle Light Rail), Great River City Light Rail (Parramatta 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. [44]

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, that 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.[45]
- 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

[44] 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, Great River City Light Rail, Keolis Downer Hunter and the interstate network operators from complying with the reporting and publishing requirements under clauses 10(2) and 10(3) of the ESSNM Regulation.

[45] 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. 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. On 19 September 2024 the Minister for Energy also granted ACEREZ Partnership a transmission operator's licence.

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 the *NSW Electricity Transmission Reliability and Performance Standard 2017*[46] and submit a compliance report to IPART annually.

Ausgrid, Endeavour Energy and Essential Energy are also required to comply with the Public Lighting Code.

#### 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).

[46] The *NSW Electricity Transmission Reliability and Performance Standard 2017* is found at Appendix 2 of Transgrid's licence.

### 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.

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.1 Network operators that we regulate

### Table B.11 Overview of NSW licensed electricity network operators in 2023–24

| Licence holder | Network type | Approximate number of customers | Area of operation |
|---|---|---|---|
| Transgrid | Transmission | Transmission network stretching 13,000km across NSW and the ACT to power 3.7 million homes and businesses. | 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 | 1.2 million customers | Sydney's Greater West, the Blue Mountains, the Southern Highlands, Illawarra and the South Coast of NSW. |
| Essential Energy | Distribution | 890,000 customers | 95% of NSW (areas not covered by Ausgrid and Endeavour Energy). |

Source: Transgrid's website, Ausgrid's website, Endeavour Energy's *Energy Charter Disclosure Report 2022/23*, Essential Energy's *Annual Report 2022–23*.

Electricity network operator licences are available on IPART's website.

### Table B.22 Non-licensed electricity network operators with assets in NSW in 2023-24

| | |
|---|---|
| Ausnet Services (Victoria) | Lord Howe Island Board |
| Directlink | Metro Trains Sydney |
| Ergon Energy (Queensland) | Energex (Queensland) |
| Powercor (Victoria) | Evoenergy (Australian Capital Territory) |
| Sydney Trains | ALTRAC (Sydney Light Rail) |
| Kelios Downer (Newcastle Light Rail) | Great River City Light Rail (Parramatta Light Rail) |

### Table B.33 Gas authorisation holders in NSW in 2023–24

| 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<br>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.[47] 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 six 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.

[47] 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.44 for details of the grading system.

### Table B.44 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 (June 2021)*[48], 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.[49] 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 clause 14 of the Public Lighting Code, including performance against the Service Standards, reporting and payments. Under clause 14 of the Public Lighting Code, Ausgrid, Endeavour Energy and Essential Energy are in breach if they fail to:

- repair priority faults within 4 days on average for each Customer, for at least 50% of the total number of Customers.
- repair priority faults in accordance with the Service Provider's process on managing a Priority Fault where it affects public safety.
- repair general faults within 8 days on average for each Customer, for at least 50% of the total number of Customers.
- repair complex faults within 25 days on average for each Customer, for at least 50% of the total number of Customers.

[48] IPART's *Electricity networks reporting manual - Distribution reliability and performance reporting (May 2024)* applies from 1 July 2024. This reporting manual, which reflects the Reliability and Performance standards (Appendix 1 of Schedule B of the distribution licences) is applicable from 1 July 2024, requires only annual reporting.

[49] From 2024–25, audits will be from time to time, as required by the Tribunal.

- comply with clause 8(d) or 11(h) of the Public Lighting Code (relating to a Service Provider's obligation to refund or credit a Customer's account in the event of incorrect billing and exceeding the relevant repair standard).
- comply with clause 9 of the Public Lighting Code relating the Annual Performance Reporting, Quarterly Reporting and Other Reporting for over 50% of Customers within a financial year.

## 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).[50] 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.

[50] Refer to Table B.44 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 adequate details are provided in the report, and where appropriate, preventive and mitigative actions are identified
- analyse 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
- ensure incidents are reported within the timeframes detailed in the Incident Reporting Manual. Failure to report incidents on time is considered a non-compliance against licence conditions.

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# Appendix C

## Electricity network operators' reliability and performance

## C.1 Reporting requirements

For 2023-24, the NSW electricity distribution network operators, Ausgrid, Endeavour Energy and Essential Energy (Distributors) were required to provide quarterly reports to IPART detailing their compliance with the reliability and performance standards set out in their respective licences.[51] [52]

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.11.

[51] 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.

[52] For 2024-25, the Reliability and Performance Standards detailed in Appendix 1 of Schedule B of the respective licences are applicable.

## Table C.11 Feeder definitions as per the Distributors' licences

| Feeder Type | Definition |
|---|---|
| Feeder | means:<br>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<br>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. |
| Low-voltage SAPS | means a SAPS[53] 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.22 identifies network performance against the SAIDI average standards as reported by the Distributors for the 12-month period from 1 July 2023 to 30 June 2024. 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 2023–24 is for the 12-month period up to 30 June 2024.

## Table C.22 Performance against the SAIDI average standards (minutes per customer) for 2023–24

| Distributor | Feeder type | Required standard | Reported performance | Compliant with licence condition |
|---|---|---|---|---|
| Ausgrid | CBD Sydney | 45 | 35.1 | ☑ |
| | Urban | 80 | 57.5 | ☑ |
| | Short-rural | 300 | 116.0 | ☑ |
| | Long-rural | 700 | 694.8 | ☑ |
| Endeavour Energy | Urban | 80 | 61.0 | ☑ |
| | Short-rural | 300 | 152.6 | ☑ |
| | Long-rural[a] | N/A | 909.6 | N/A |
| Essential Energy | Urban | 125 | 69.0 | ☑ |
| | Short-rural | 300 | 185.0 | ☑ |
| | Long-rural | 700 | 466.0 | ☑ |

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.

Note: Network overall reliability standards do not apply to low-voltage SAPS.

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.

Source: Q4 2023–24 quarterly reliability reports for Ausgrid, Endeavour Energy and Essential Energy.

53 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.33 identifies performance against the SAIFI average standards as reported by the Distributors for the 12-month period from 1 July 2023 to 30 June 2024.

## Table C.33 Performance against the SAIFI average standards (number per customer) for 2023–24

| Distributor | Feeder type | Required standard | Reported performance | Compliant with licence condition |
|---|---|---|---|---|
| Ausgrid | CBD Sydney | 0.3 | 0.12 | ☑ |
| | Urban | 1.2 | 0.51 | ☑ |
| | Short-rural | 3.2 | 0.89 | ☑ |
| | Long-rural | 6.0 | 3.09 | ☑ |
| Endeavour Energy | Urban | 1.2 | 0.58 | ☑ |
| | Short-rural | 2.8 | 1.14 | ☑ |
| | Long-rural[a] | N/A | 3.5 | N/A |
| Essential Energy | Urban | 1.8 | 0.77 | ☑ |
| | Short-rural | 3.0 | 1.48 | ☑ |
| | Long-rural | 4.5 | 2.65 | ☑ |

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: Network overall reliability standards do not apply to low-voltage SAPS.
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.

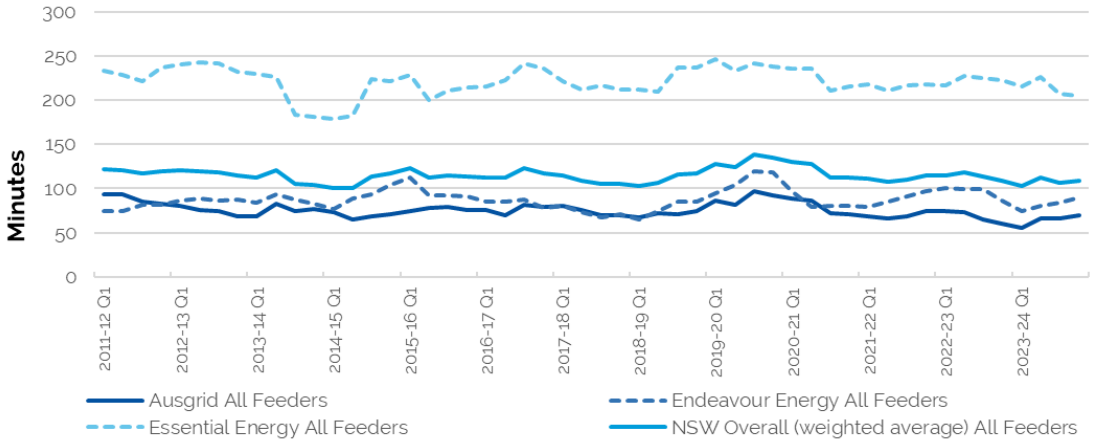
Source: Q4 2023–24 quarterly reliability reports for Ausgrid, Endeavour Energy, Essential Energy.

### 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.11 shows longer term trends of the SAIDI for each Distributor and a weighted average SAIDI for NSW.

## Figure C.11 SAIDI, quarterly results by Distributor




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

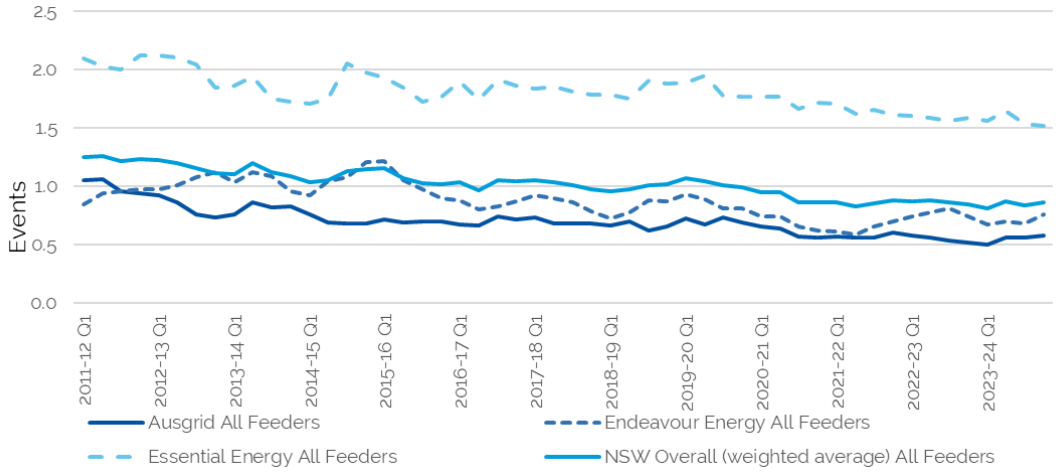
Source: Quarterly reliability reports for Ausgrid, Endeavour Energy, Essential Energy, and data provided to IPART by the then Department of Industry.

Overall, for NSW:

- the 5-year average interruption time is 116 minutes per customer, and
- there are no significant SAIDI trends over the graphed data period.

Figure C.22 shows longer term trends of the SAIFI for each Distributor and a weighted average SAIDI for NSW.

## Figure C.22 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 0.88 interruptions per NSW customer, and
- there is a downward SAIFI trend over the graphed data period, indicating fewer frequency of customer interruptions.

## C.3 Individual feeder performance reports

Where one or more of the feeders of a Distributor does not meet the relevant individual feeder standards,[54] that Distributor must investigate the causes of the feeder not meeting the standard and take action to improve performance as appropriate.

Table C.44 shows the number of feeders that did not meet the performance standards in 2023–24. 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.44 Feeders not meeting performance standards by category in 2023–24

| Feeder type | Ausgrid | Endeavour Energy | Essential Energy | Total |
|---|---|---|---|---|
| CBD | 5 of 57 (9%) | N/A | N/A | 5 of 57 (9%) |
| Urban | 48 of 1,855 (3%) | 13 of 1,086 (1%) | 8 of 270 (3%) | 69 of 3,211 (2%) |
| Short-rural | 9 of 462 (2%) | 10 of 501 (2%) | 40 of 960 (4%) | 59 of 1,923 (3%) |
| Long-rural | 1 of 5 (20%) | 0 of 1 (0%) | 21 of 245 (9%) | 22 of 251 (9%) |
| **Total** | 63 of 2,382 (3%) | 23 of 1,588 (1%) | 69 of 1,475 (5%) | 155 of 5,442 (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 2023–24 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. 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 are due to severe weather.

[54] Individual feeder standards are as defined in the Distributors licences. These are SAIDI and SAIFI standards that apply to individual feeders of each of the Distributor's feeder types.

Table C.55 shows the customer claims paid, and claims denied by the Distributors for 2023–24. The Distributors paid 67% of claims made in 2023–24.

## Table C.55 Summary of customer claims paid and denied for 2023–24

| Distributor | Claims paid (year) | Claims denied (year) | Total claims |
|---|---|---|---|
| Ausgrid | 322 | 156 | 478 |
| Endeavour Energy | 12 | 1 | 13 |
| Essential Energy | 3 | 8 | 11 |
| **Total** | 337 | 165 | 502 |

Source: Q4 2023–24 reliability reports for Ausgrid, Endeavour Energy and Essential Energy.

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