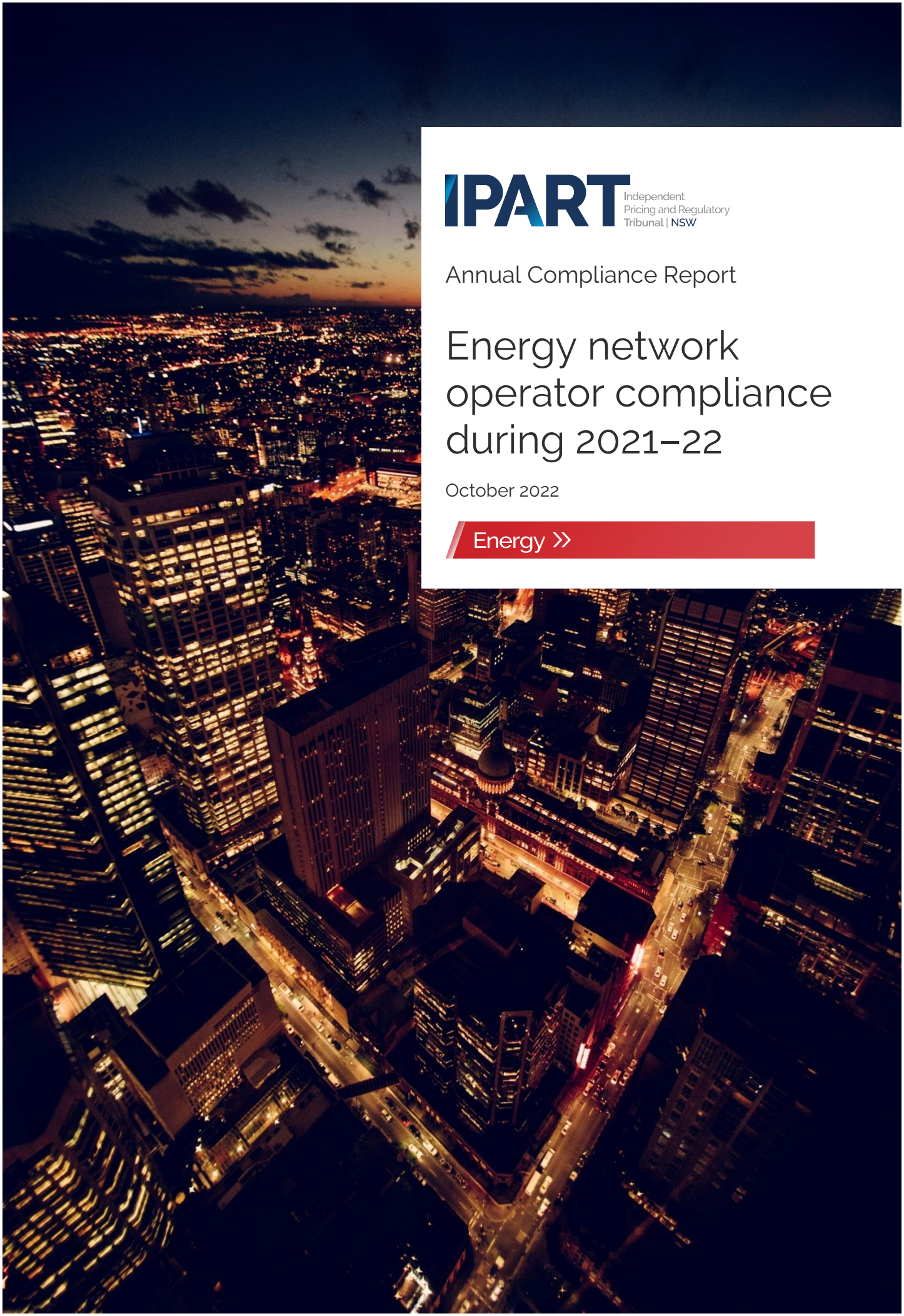

IPART Independent Pricing and Regulatory Tribunal | NSW

Annual Compliance Report

Energy network operator compliance during 2021–22

October 2022

Energy »

Tribunal Members

The Tribunal members for this review are:

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Deborah Cope
Sandra Gamble

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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.

Acknowledgment of Country

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

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

Contents

Chapter 1

Executive summary

01

This is the Independent Pricing and Regulatory Tribunal's (IPART) annual report on the NSW energy network operators'[a] compliance with relevant obligations for the year 2021–22.[b] Overall, we found that the energy networks performed well against their licence conditions in 2021–22.

We continue to take a risk-based approach to monitoring compliance. We consider the regulated entities' response to any non-compliance, along with the risk of ongoing or further non-compliance, before determining any compliance action. During 2021–22, we were generally able to focus our efforts on informing, educating and supporting the regulated entities in their efforts to further improve compliance with their regulatory obligations.

Box 1.1 Energy network operators' compliance during 2021–22

In summary, licensed electricity network operators:

- were generally compliant with their critical infrastructure licence obligations, although Ausgrid and Endeavour Energy each had one non-material non-compliance
- performed well against reliability and performance licence conditions, with only a small number of non-material non-compliances
- all had one or more non-material non-compliances in relation to reporting requirements, but otherwise were generally compliant with reporting and auditing requirements
- reported no non-compliances with their obligations related to the *NSW Code of Practice for Authorised Network Operators* (Code of Practice) for environmental impact statements
- reported non-compliances against the requirements of the *NSW Public Lighting Code* (Public Lighting Code)
- reported that they were compliant with their distribution district licence conditions.

The natural gas reticulators and gas distribution operators have reported that they were compliant with their authorisation or licence conditions. There is no requirement for gas network operators to be audited against their licence and authorisation conditions. Please refer to section 3.1 for details of the gas reticulators and licence holders, and section 3.2 for further details of their compliance.

[a] Refer to Appendix B for details of energy network operators covered by this report.
[b] Refer to Box A.1 for details of the statutory requirements for this report.

We also found that network operators with electricity network assets in NSW (licensed, non-licensed, and interstate)[c] took reasonable steps to ensure the safety of their networks during the year, in line with the *Electricity Supply (Safety and Network Management) Regulation 2014* (ESSNM Regulation). We will continue to proactively engage with all electricity network operators to identify opportunities for continued improvement.

There has been a general improvement in compliance by electricity network operators since we commenced our compliance monitoring function in 2015.

1.1 How we regulate energy networks

We regulate using our compliance monitoring and enforcement powers as appropriate, to encourage the industries we regulate to establish and maintain a strong compliance culture.

We continue to make incremental improvements to our risk-based approach to compliance regulation, and to our reporting frameworks and guidance materials. In line with this approach, during 2021–22 we identified priority areas for improving electricity network operators' compliance with safety management requirements based on the risk of harm that could arise.

In October 2022 the Tribunal endorsed our *Energy Networks Regulation strategic plan*. The plan will allow us to better adapt our role to meet current and emerging challenges and ensure we are meeting the expectations of our stakeholders, including the people of NSW. The plan was accompanied by our *Compliance and enforcement priorities* for the next 3 years. Our priorities for 2022–23 are:

- bush fire risk management (vegetation management)
- critical infrastructure licence condition compliance
- climate change adaption, and
- public safety.

Full details are provided in section 5.1.

We will remain vigilant as network operators revise their processes and procedures in response to incidents, audit recommendations, IPART directions and changes in the regulatory environment.

[c] Refer to details of all network operators with assets in NSW.

Box 1.2 IPART's role

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

Under the Gas Supply Act, 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 may relate to the safety and reliability of gas reticulation and distribution systems. IPART does not otherwise regulate the safety or reliability of the gas reticulation or gas distribution networks.[d]

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

1.1.1 Energy Networks Regulation Committee

The Tribunal delegated certain responsibilities in relation to the electricity networks' assets, relevant licensing, technical and safety functions under the *Electricity Supply Act 1995*, the ESSNM Regulation, and the *Electricity Network Assets (Authorised Transactions) Act 2015* to the Energy Networks Regulation Committee (ENR Committee). The ENR Committee is currently comprised of Sandra Gamble (Chair), Deborah Cope and Naveena Rajaretnam. 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.

1.2 Licensed electricity network operators' licence conditions

An overview of compliance with licence conditions pertaining to critical infrastructure, reliability and performance standards, and the Public Lighting Code is set out in the following sections. Further details of compliance against all other licence conditions is detailed in the following chapters.[e]

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

[e] The Code of Practice related to environmental impact assessments is discussed in section 2.4 and compliance reporting and auditing is discussed in section 2.6 and throughout the report. Distribution District performance is detailed in section 2.5.

1.2.1 Critical infrastructure licence conditions

Licensed electricity network operators report annually on compliance against their critical infrastructure licence conditions and are subject to an annual independent audit.

Please refer to section B.3 for details of the critical infrastructure compliance framework and section 2.1.1 for further details of the network operators' performance against their critical infrastructure licence conditions.

1.2.2 Reliability and performance standards licence conditions

Transgrid reports annually on its performance against the transmission standards licence conditions. Licensed distribution electricity network operators report quarterly on performance against the reliability and performance standards licence conditions and are also subject to annual independent audits.

Please refer to section B.4 for details of the reliability and performance standards compliance framework and section 2.2.1 for a summary of the network operators' performance against their reliability and performance standards licence conditions.

1.2.3 Public Lighting Code

Ausgrid, Endeavour Energy and Essential Energy (Service Providers) are required to comply with the Public Lighting Code, which has been established to support the reliable and efficient provision of public lighting services.

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

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

[f] Endeavour Energy did not submit all reports on time.

After consideration of the 2020–21 non-compliances, we invited the Service Providers to develop a plan detailing the actions they would take to comply with the Public Lighting Code, and when they expect to become compliant.

We will consider each of the Service Provider's non-compliances against the Public Lighting Code, progress against their compliance action plans and their responses to their non-compliances, before deciding if further action is appropriate.

Please refer to section B.5 for details of the Public Lighting Code compliance framework and section 2.3.1 for a summary of the network operators' performance against their Public Lighting Code obligations.

1.3 Electricity network operators' safety management obligations

We required independent audits of Transgrid, Ausgrid, Endeavour Energy and Essential Energy's compliance with the safety management requirements of the ESSNM Regulation in 2021–22. These audits focused on the bush fire risk management component of their safety management systems. The auditors identified a small number of non-material non-compliances for Ausgrid, Endeavour Energy and Essential Energy. The audit findings do not indicate any need for immediate action on safety grounds, although there is a need for improvement in some areas (particularly documentation).

The network operators' proposed rectification actions respond directly to these deficiencies, and the proposed timeframes appear reasonable, with the most critical actions to be rectified ahead of the upcoming bush fire season. Future audits will check that network operators have followed their rectification plans and become compliant.

We also required an audit of Ausgrid to assess how it had addressed non-compliance from previous audits.

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

For AusNet Services and Powercor (VIC), Energy Queensland, and Evoenergy (ACT) who have network assets in NSW, we reviewed safety management system audits and reports prepared for or by their jurisdictional regulators to assess compliance with safety obligations.

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

1.3.1 Network operators' bush fire risk mitigation

Auditors identified some non-compliances with the bush fire risk management component of the distribution network operators' electricity network safety managements systems (ENSMS), but also identified strengths. Please refer to section 4.3.2 for details of the bush fire risk management audits.

The non-compliances identified by the auditors are summarised in Table 4.2.

We note that the ESSNM Regulation requires network operators to have a safety management system in place that deals with the management of bush fire risk related to electricity assets, and that the network operators are generally compliant with most obligations.

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

Given the nature of electricity assets and the extensive network of overhead lines that operate within NSW, this risk cannot realistically be eliminated. Please refer to Box 4.1 for further details.

1.3.2 Audit of Ausgrid's ENSMS

An audit to determine if Ausgrid had addressed non-compliance from previous audits related to live work and public and worker safety, identified a number of non-material non-compliances. Ausgrid is rectifying these non-compliances. Please refer to section 4.3.3 for further details of the audit.

1.4 Summary of licensed electricity network operators' compliance during 2021–22

Transgrid

Safety and Bush fire risk management
Transgrid reported that almost all asset and vegetation management tasks were completed prior to the bush fire season. An audit of Transgrid's bush fire risk management did not identify any non-compliances.

Critical Infrastructure

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

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

Incident reporting
Transgrid reported in its annual compliance report, that one incident report was submitted outside reporting timeframes.

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

Ausgrid

Safety and bush fire risk management
Ausgrid reported that it had no outstanding asset and vegetation management tasks prior to the start of bush fire season. A bush fire risk management auditor noted 3 non-compliances (non-material), but also noted "…we are of the opinion that Ausgrid has the controls and systems in place to manage bush fire risk to ALARP [as low as reasonably practicable".

An audit of Ausgrid's ENSMS identified a total of 8 non-compliances (non-material) related to 'live work' and 'public and worker safety'. Ausgrid submitted an action plan to address the non-compliances by 1 December 2022. As we considered that Ausgrid had undertaken significant effort and made improvements to its management of live work and made progress toward rectifying the previous non-compliances the ENR Committee decided not to take any enforcement action.

Critical Infrastructure
An independent audit of Ausgrid identified one non-compliance against its critical infrastructure licence conditions. The auditor determined that there was insufficient evidence that the 'Senior Officer Responsible' had approved maintenance access to the community batteries by third party entities or non-licence holder employees.

Public lighting
Ausgrid reported that it was non-compliant with the Service Standards under the Public Lighting Code due to not repairing faults within the timeframes specified by the Public Lighting Code. In addition, Ausgrid reported it was non-compliant with the requirement to provide Public Lighting Services requested by customers within 90 days (or within a timeframe mutually agreed with the customer).

Ausgrid also reported non-compliance due to using the incorrect version of IPART's NSW Public Lighting Code Reporting Template when submitting the 2021–22 annual performance report.

Reliability
Ausgrid exceeded the reliability standards that apply to its 'Long-rural' feeders'. This was primarily caused by extensive flooding in early March 2022 which affected the fault identification and restoration of 3 widespread outages on 2 long rural feeders affecting around 379 customers.

Ausgrid reported that it was otherwise compliant with the overall reliability standards, the individual feeder standards and the customer service standards. An independent audit did not identify any additional non-compliances against these reliability licence conditions.

Incident reporting
Ausgrid reported that 11 incident reports were submitted outside reporting timeframes. These non-compliances were confirmed by an independent audit.

Distribution districts
Ausgrid reported that it was compliant with its distribution district licence conditions. Ausgrid reported that 17 new low voltage services and 4 new 33kV feeders were connected outside of its distribution district. Two existing low voltage services were disconnected.

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

Endeavour Energy

Safety and bush fire risk management
Endeavour Energy reported that all pre-summer bush fire inspections had been completed, and that it had no outstanding vegetation and asset tasks. A bush fire risk management auditor noted 5 non-compliances (non-material), but also noted "over the last two years significant development of the Endeavour Energy ENSMS is evident with improved processes and procedures…".

There were no other audits of Endeavour Energy's safety management system during 2021–22.

Critical Infrastructure
Endeavour Energy reported that it was non-compliant with licence condition 10.1.(b)(ii). This was because an access to bulk customer personally identifiable data was available to some staff who were no longer employed at Endeavour Energy.

An independent audit found this to be non-material and did not identify any further non-compliances against these licence conditions.

Public lighting
Endeavour Energy reported that it was non-compliant with the Service Standards under the Public Lighting Code due to not repairing faults within the timeframes specified by the Public Lighting Code.

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

Reliability
Endeavour Energy reported it was non-compliant with licence condition 5.2(b) as it did not complete feeder investigations in time. However, Endeavour Energy was compliant with the overall reliability standards and the customer service standards. An independent audit did not identify any additional non-compliances against these reliability and licence conditions.

Incident reporting
Endeavour Energy reported that 9 incident reports were submitted outside reporting timeframes. These non-compliances were confirmed by an independent audit.

Distribution districts
Endeavour Energy reported that it was compliant with its distribution district licence conditions and reported no extensions or disconnections outside of its distribution district.

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

Essential Energy

Safety and bush fire risk management
Essential Energy reported that all pre-summer bush fire inspections had been completed and that it had no outstanding high risk asset defects. There were only 4 outstanding high risk vegetation defects in its high bush fire risk areas, which were being monitored.

A bush fire risk management auditor noted 3 non-compliances (non-material), but also noted "Essential Energy is seen to be continuing to develop its ENSMS and this is evident through an ongoing improvement program that is implementing improved supporting processes and procedures for the management of bush fire safety risks…".

There were no other audits of Essential Energy's safety management system during 2021–22.

Critical Infrastructure
Essential Energy reported no non-compliances against its critical infrastructure licence conditions. An independent audit did not identify any non-compliances, as Essential Energy was undertaking the steps required to be undertaken in the transition plan previously approved by the Tribunal.

Public lighting
Essential Energy reported that it was non-compliant with the Service Standards under the Public Lighting Code due to not repairing faults within the timeframes specified by the Public Lighting Code. In addition, Essential Energy reported it was non-compliant with the requirement to provide Public Lighting Services requested by customers within 90 days (or within a timeframe mutually agreed with the customer).

Essential Energy also reported non-compliance with the requirement to provide annual performance reports to its customers due to it to not providing the complete 2021–22 annual performance report to its customers by 31 August 2022.

Reliability
Essential Energy reported it was compliant with the overall reliability standards, individual feeder standards and the customer service standards. It was however, non-compliant with licence condition 7.4 relating to incorrectly reporting the number of claims made under the interruption duration customer service standard

An independent audit did not identify any further non-compliances against the reliability and performance licence conditions.

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

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

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

1.5 Report structure

The remainder of this report discusses the compliance performance of the network operators during 2021–22 in more detail, as set out below:

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

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

Chapter 2

Licensed electricity network operators' compliance with their licence conditions

02

NSW transmission network operator Transgrid and distribution network operators Ausgrid, Endeavour Energy and Essential Energy hold operating licences. These licences set out their 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 by 31 August of each year. The licences also require audits against critical infrastructure licence conditions and the reliability and performance standards licence conditions (Ausgrid, Endeavour Energy and Essential Energy only).

2.1 Critical infrastructure licence conditions

Transgrid, Ausgrid, Endeavour Energy and Essential Energy have critical infrastructure licence conditions in their operating licences. These conditions require the network operators to:

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

Transgrid and Essential Energy did not identify any non-compliances with their critical infrastructure licence obligations. Ausgrid and Endeavour Energy were each non-compliant with one of their obligations as detailed in section 2.1.1.

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

2.1.1 Compliance with critical infrastructure licence conditions

Transgrid reported no non-compliances

Transgrid reported no non-compliances against its critical infrastructure licence conditions. The independent audit of Transgrid's critical infrastructure licence conditions did not identify any non-compliances.

Ausgrid was not fully compliant with licence condition 9.1(b)

Ausgrid's auditor identified a non-compliance with licence condition 9.1(b). The licence condition states:

> Except to the extent allowed for under the Protocol agreed with the Commonwealth Representative, the Licence Holder must take all practical and reasonable steps to ensure…that any third party or non-Licence Holder employee, including individuals/entities from outside Australia, undertaking maintenance of the distribution system is subject to the approval of the senior officer responsible for network operations.

The auditor reported that Ausgrid did not provide sufficient evidence that the Senior Officer Responsible for Network Operations had provided approval for maintenance access to the community batteries, which is part of the distribution system. It should be noted that Ausgrid had taken steps to eliminate the risk, had consulted with the commonwealth representative and had determined that the risk was low enough for the approval to be delegated. Approval was provided by the Head of Asset Data & Systems. However, the auditor still considered that Ausgrid was not compliant with the licence condition.

The independent auditor did not identify any other non-compliances.

Endeavour Energy was not fully compliant with licence condition 10.1(b)(ii)

Endeavour Energy reported that it was not compliant with licence condition 10.1(b)(ii). The licence condition requires that:

> The Licence Holder must ensure that all Bulk Personal Data Records, relating to or obtained in connection with the operations of the distribution system by a Relevant Person is solely within Australia, and is accessible only by a Relevant Person or a person who has been authorised by the Licence Holder.

Endeavour Energy reported that an internal audit found that access to bulk customer personally identifiable data (through the 'Plus ES MBS' system) was available to some staff who were no longer employed at Endeavour Energy. This was due to the mechanism in which access is provided by Plus ES.

To rectify this, user access reviews are now occurring for the Plus ES MBS system and any necessary changes are remediated as identified. By October 2022, Endeavour Energy will only allow access to the Plus ES MBS system from within the Endeavour Energy network. This will mean that staff who are no longer employed at Endeavour Energy will be unable to access the system.

The independent audit of Endeavour Energy's critical infrastructure licence conditions did not identify any further non-compliances.

Essential Energy undertook the steps in its approved plan

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

Essential Energy reported no non-compliances with its critical infrastructure licence conditions for the 2021–22 financial year. An independent audit found that Essential Energy was compliant with the requirements of its critical infrastructure licence conditions due to it undertaking the steps in its Approved Plan.

2.2 Reliability and performance standards licence conditions

Transgrid's reliability and performance standards licence 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's 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 feeder performance standards, and consider both network and non-network solutions to improve the reliability of the feeder
- 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 the reliability of the feeder
- 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 network operators' reliability and performance data for 2021–22 is at Appendix C.2 with compliance against the reliability and performance standards 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*.

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

Ausgrid, Endeavour Energy and Essential Energy self-reported non-compliances against the reliability and performance licence conditions as part of their annual compliance reports. These non-compliances were confirmed by audits of each network operator.

Ausgrid exceeded the SAIDI average standards for its long rural feeders

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

- the System Average Interruption Duration Index (SAIDI) standards that apply to its feeder types.[a] 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 System Average Interruption Frequency Index (SAIFI) standards that apply to its feeder types.[b] 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 operating licences as shown in Table C.1.

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

Ausgrid was non-compliant with licence condition 4.1 for exceeding the SAIDI average standards in 2021–22 that apply to its feeder types for the 'Long-rural SAIDI' (refer to Table C.2 for further details). This was primarily caused by extensive flooding in early March 2022 which affected the fault identification and restoration of 3 widespread outages on 2 long rural feeders affecting around 379 customers.

Ausgrid reported that it has proposed or undertaken actions to rectify the non-compliance including:

- investigation of feeder and issue work to limit the impact of faults
- investigation of non-standard communication systems to overcome poor communication in remote sites
- continue to refine operating protocols for use of aircraft and drones for patrolling lines where access is restricted.

[a] Refer to licence conditions 4.1 of each of the Distributors' current licences.
[b] Refer to licence conditions 4.2 of each of the Distributors' current licences.

These actions are due for completion in 2023–24.

Endeavour Energy did not complete all feeder investigations on time

The licences of Ausgrid, Endeavour Energy and Essential Energy contain individual feeder performance conditions. These conditions apply where one or more of the feeders of a licence holder exceed the relevant individual SAIDI and SAIFI feeder standards for each feeder type requiring it to undertake a number of actions including:

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

Endeavour Energy was non-compliant with licence condition 5.2(b) as it did not complete feeder investigations in time. The audit confirmed 9 feeders from the March 2022 quarter were under investigation, but the outcome had not been determined or reviewed.

In its annual compliance report, Endeavour Energy identified internal staff movements had resulted in a temporary resourcing shortfall of two investigating engineers who perform the feeder investigations. It reported that the overdue investigations are being completed.

Distribution network operators were compliant with customer service standards

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

- pay $80 to a customer if the interruption duration standard or interruption frequency standard is exceeded at the customer's premises, and the customer makes a claim[c]
- determine the claim for payment and notify the customer within one month of receipt of the claim,[d] and
- take all reasonable steps to make customers aware of the availability of payments, including the minimum requirement for the publication of the information in newspaper advertisements.[e]

Ausgrid, Endeavour Energy and Essential Energy were all compliant with the customer service standards licence obligations.

[c] Licence condition 6.1 and 6.2.
[d] Licence condition 6.3.
[e] Licence condition 6.4.

Distribution network operators were not fully compliant with performance monitoring and reporting

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

Essential Energy was non-compliant with licence condition 7.4 relating to incorrectly reporting the number of claims made under the interruption duration customer service standard in its December 2021 quarterly report. Essential Energy self-reported this in its annual compliance report. Refer to section 2.6.3 for further details.

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

These non-compliances were confirmed by audits.

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, which was published by the Office of Energy and Climate Change (OECC), supports the reliable and efficient provision of public lighting services. Ausgrid, Endeavour Energy and Essential Energy, are defined as Service Providers[f] 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.[g]

The Public Lighting Code includes:

- standards of service (Service Standards) that a Service Provider must meet in the delivery of public lighting services,[h] including requirements to repair Faults with public lighting assets within certain timeframes
- requirements for the provision of public lighting services[i] by Service Providers
- a mechanism that allows Services Providers and Customers to agree to the installation of non-standard luminaires

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

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

[h] Service Standards are specified in Schedule 1 clause 1 of the Public Lighting Code

[i] Clause 17 of the Public Lighting Code defines Public Lighting Services to mean 'any of the following services that are provided for the purpose of lighting public places:
(a) the operation, maintenance, repair and replacement of Public Lighting Assets;
(b) the alteration and relocation of Public Lighting Assets; and
(c) the installation and provision of new Public Lighting Assets.'

- a requirement for Service Providers to have a management plan on the operation, maintenance, refurbishment, replacement, repair and disposal of public lighting assets.

The current version of the Public Lighting Code was published in March 2021 and took effect on 1 July 2021. The Service Providers were required to report against this version of the Public Lighting Code during the 2021–22 reporting period.

2.3.1 Compliance with the Public Lighting Code

We have detailed the Service Providers' compliance with the Public Lighting Code in Table 2.1, Table 2.2, Table 2.4, Table 2.5 and Table 2.6, and their reported non-compliances in section 2.3.3. Please note that all Fault repair times are measured in business days.

Complex Fault and Complex (Priority) Fault definitions

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

- Complex Faults means Faults related to repairs not subject to an Excluded Fault Condition:
  - where a site-specific traffic management plan and an additional dedicated traffic control crew are required; and/or
  - where a site-specific Road Occupancy Licence or other specific authority for road occupancy is required; and/or
  - where identification of an underground Fault is required; and/or
  - where access to private property is required.
- Priority Fault means a Fault relating to lighting at pedestrian crossings or groups of three or more consecutive lights on 'Category V roads' (as defined in AS/NZS 1158).
- A Complex (Priority) Fault is both a 'Complex Fault' and a 'Priority Fault'.

Table 2.1 Complex Fault and Complex (Priority) Fault repairs

Statistic	Ausgrid	Endeavour Energy	Essential Energy
Number of Complex Faults repaired within 30 business days[a]	890 out of 1,658 (53.68%)	848 out of 1,733 (48.93%)	1,576 out of 2002 (78.72%)
Number of Customers for which Complex Faults were repaired within 25 business days on average[b]	5 out of 34 (14.71%)	3 out of 23 (13.04%)	59 out of 80 (73.75%)
Average repair time for all Complex Faults	70.62	38.79	21.89
Number of Complex (Priority) Faults[c] repaired	424	39	0
Number of Customers for which Complex (Priority) Faults were repaired more quickly than the average repair target (of 25 business days) for Complex Faults	6 out of 29 (20.69%)	11 out of 22 (50.00%)	21 out of 27 (77.78%)
Average repair time for all Complex (Priority) Faults	75.03	5.77	9.95

a. Complex Faults must be repaired within 30 business days.
b. Complex Faults must be repaired within 25 Business Days on average for each Customer.
c. Service Providers are required to take reasonable steps to repair Complex (Priority) Faults more quickly than the average repair target for Complex Faults (of 25 business days) for each Customer.

General Fault and General (Priority) Fault definitions

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

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

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

Table 2.2 General Fault and General (Priority) Fault repairs

Statistic	Ausgrid	Endeavour Energy	Essential Energy
Number of General Faults repaired within 10 business days[a]	14,764 out of 16,954 (87.08%)	15,339 out of 19,077 (80.41%)	2,511 out of 3,498 (71.78%)
Number of Customers for which General Faults were repaired within 8 business days on average[b]	21 out of 34 (61.76%)	15 out of 23 (65.22%)	44 out of 79 (55.70%)
Average repair timeframe for all General Faults (business days)	7.57	6.83	11.16
Number of General (Priority) Faults repaired	1,830	3,020	9
Number of Customers for which General (Priority) Faults were repaired more quickly than the average repair target for General Faults[c]	17 out of 32 (48.57%)	19 out of 20 (95.00%)	4 out of 9 (44.44%)
Average repair timeframe for all General (Priority) Faults (business days)	10.32	2.84	24.59

a. General Faults must be repaired within 10 business days.
b. General Faults must be repaired within 8 business days on average for each Customer.
c. Service Providers are required to take reasonable steps to repair General (Priority) Faults more quickly than the average repair target for General Faults (of 8 business days) on average for each Customer.

Faults with an excluded fault condition

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

Table 2.3 Excluded Fault conditions

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

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

Source: *NSW Public Lighting Code* (March 2021).

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

Table 2.4 Faults with an excluded Fault condition

Statistic	Ausgrid	Endeavour Energy	Essential Energy
Total number of faults with an Excluded Fault Condition repaired on time	296 out of 364 (81.32%)	42 Faults repaired[a]	996 out of 1027 (96.98%)

a. Endeavour Energy did not agree to a repair timeframe (i.e. 'permitted repair standard') with the relevant Customer for these Faults during 2021–22 (as required under the Public Lighting Code). As such, Endeavour Energy did not report the permitted repair standard in its annual performance report. See section 2.3.3 for further details of this non-compliance.

Public Lighting Services

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

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

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

Table 2.5 Public Lighting Services

Statistic	Ausgrid	Endeavour Energy	Essential Energy
Total jobs not performed within 90 business days or timeframe mutually agreed with Customer	108 out of 164 (65.85%)	56 out of 105 (53.33%)	3 out of 7 (42.86%)

Faults to which Service Standards do not apply

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

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

A Service Provider must develop and report a target repair timeframe for such Faults. We have summarised the Service Providers' performance in repairing Faults to which Service Standards do not apply in the table below.

Table 2.6 Faults to which Service Standards do not apply

Statistic	Ausgrid	Endeavour Energy	Essential Energy
Total number of Faults affected by a Force Majeure Event (that did not result in a loss of electricity supply) that were repaired on time	194 out of 209 (92.82%)	0 out of 0	9 out of 15 (60.00%)
Total number of Faults affected by a Force Majeure Event (that resulted in a loss of electricity supply) that were repaired on time	0 out of 0	0 out of 0	0 out of 0
Total number of Faults that required replacement of the electricity distribution pole that were repaired on time	55 out of 84 (65.48%)	0 out of 0	56 out of 59 (94.92%)

2.3.2 Service Provider compliance plans

After the ENR Committee considered the Service Providers' 2020–21 annual performance reports, we wrote to the Service Providers noting their non-compliances with the Public Lighting Code and requesting details of how they planned to become compliant. This request was part of our strategy to improve the Service Providers' compliance with the Public Lighting Code.

In line with our request, each Service Provider responded in November 2021 with a plan to become compliant (Compliance Plans) with the Public Lighting Code. The Service Providers followed their Compliance Plan for the remainder of the 2021–22 reporting period.

The Service Providers' Compliance Plans targeted compliance by the following dates:

- Ausgrid - 30 September 2022
- Endeavour Energy - 2022–23 Q1
- Essential Energy - 30 July 2022

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

Even if the Service Providers complete the Compliance Plan actions in accordance with their Compliance Plans, Ausgrid and Essential Energy may be non-compliant with some obligations in

2022–23 (given that they expect to complete their Compliance Plans in the first quarter of 2022-23).

We need to undertake further analysis of the Service Providers' 2021–22 annual performance reports to enable us to determine how they are performing against their Compliance Plans. Following this, the ENR Committee will decide if further compliance action is appropriate.

2.3.3 Service Provider non-compliances

All Service Providers submitted their quarterly reports and annual performance reports to IPART by the deadlines specified by the Public Lighting Code and IPART's Reporting Manual – Public Lighting Code. However, Ausgrid and Endeavour Energy did not submit their 2021–22 annual performance reports in accordance with the Reporting Manual – Public Lighting Code. We will report details of these non-compliances in our 2022–23 Annual Compliance Report.[j]

All Service Providers reported non-compliances with the Service Standards. Given the Service Providers were following plans to become compliant with the Public Lighting Code for over half of the reporting period, we expected Service Providers to report non-compliances during the 2021–22 reporting period.

We have summarised the Service Providers' non-compliances and their responses to them below.

Ausgrid

Ausgrid reported non-compliance with:

- clause 10(c) of the Public Lighting Code pertaining to the Service Standards
- clause 9(b)[k] of the Public Lighting Code in relation to performing Public Lighting Services requested by Customers (Ausgrid completed 56 of 164 installations requested by Customers within 90 business days)
- clause 8(a) of the Public Lighting Code in relation to using the incorrect version of IPART's NSW Public Lighting Code Reporting Template when submitting the 2021–22 annual performance report.

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

- In relation to the non-compliance with clause 10(c) of the Public Lighting Code:
  - Increased the number of external contractor crews deployed to rectify streetlighting defects and minor capital works.
  - Held public lighting briefings with internal and external delivery partners to raise awareness of compliance obligations.

[j] Refer to section 2.6.2 for further details of Endeavour Energy's reporting non-compliance for 2021–22.
[k] Clause 9(b) of the Public Lighting Code specifies requirements for the Service Provider in relation to performing Public Lighting Services involving the installation of up to 10 standard luminaires.

  - As LED lights are more reliable and last longer, their introduction will result in fewer streetlighting Faults across the network in the future. Ausgrid continued to deliver its LED replacement program for Category P roads, achieving (as of 30 June 2022) 98% completion resulting in over 147,000 lights converted to LED. Ausgrid has also secured binding agreements to a V-cat LED rollout from 87% councils. This will upgrade an additional 90,000 lights to LED over the next 3 years. The rollout of the V-cat LED upgrade program commenced 1st July 2022.
  - Increased communication with councils regarding the impact of weather events. This resulted in better collaboration with councils in prioritising works obtaining mutual agreement on 364 instances for extensions of time.
  - Created and committed to IPART a compliance recovery plan.
  - Engaged actively in the OECC's Public Lighting Code consultation process to establish parameters for revised compliance conditions that deliver efficient customer-centric outcomes.
- In relation to the non-compliances with clause 9(b) of the Public Lighting Code, compliance was achieved in 2021–22 Q4 by providing Public Lighting Services, with a result of 65 Business days against a target of 90 Business days. Ausgrid has worked with its council partners to develop tailored delivery timeframes by agreement for complex installations. Further actions include system enhancements to improve project management and tracking and an increase in delivery resources.
- A review of the reporting process has been undertaken. As an additional control, a peer review of the correct template use will now be performed for all future submissions.

Endeavour Energy

Endeavour Energy reported:

- non-compliance with clause 10(c) of the Public Lighting Code due to not meeting the Service Standards (as outlined in the tables above)
- non-compliance with clause 10(c) Table 1 Schedule B of the Public Lighting Code due to not seeking agreement from relevant Customers on repair timeframes for certain Faults with an Excluded Fault Condition.

Endeavour Energy noted the following in response to the non-compliances:

- Analysis of non-compliant Faults has been undertaken as a method to identify a plan to become compliant (with clause 10(c) of the Public Lighting Code). Endeavour Energy will continue to focus on the repair of legacy Faults supported by regular meetings to ensure compliance with the Public Lighting Code.
- In relation to the non-compliance with clause 10(c) Table 1 Schedule B of the Public Lighting Code, Endeavour Energy will implement a process change to capture a defined delivery date for all future excluded Fault agreements.

Essential Energy

Essential Energy reported:

- non-compliance with clause 10(c) of the Public Lighting Code due to not meeting the Service Standards (as outlined in the tables above)
- non-compliance with clause 8(d) of the Public Lighting Code in relation to not providing the 2020–21 annual performance report to its Customers by 31 August 2021
- non-compliance with clause 10(f) and 10(g) of the Public Lighting Code. The non-compliance related to not crediting Customers' accounts with 0.25% of the total annual maintenance charge for exceeding repair targets for the 2020–21 financial year[l]
- non-compliance with clause 9(b)(iii) of the Public Lighting Code in relation to exceeding the installation timeframe for providing Public Lighting Services on 3 occasions.

Essential Energy provided the following reasons for the non-compliances:

- Non-compliance with clause 10(c) of the Public Lighting Code:
  - Q1 to Q4 - Non-priority Faults taking longer than usual to rectify for Customers undergoing the Bulk Lamp Replacement (BLR) Program by external contractors. To avoid attending sites on multiple occasions, non-priority tasks were, where deemed appropriate, held for contractors to rectify in conjunction with bulk lamp replacements.
  - Q3 and Q4 - A backlog of tasks from constrained resourcing due to prioritisation of restoration of power and flood recovery work following catastrophic flooding in Lismore/Northern Rivers area in February and March 2022.
  - Q1 to Q4 - Compliance with service standards in relation to the Excluded Fault condition – "Luminaire is non-standard, and no spare part is available", has been affected by delays in obtaining light fittings that exceed the allowed 100-day exclusion period due to the unavailability of stock from suppliers and transport issues caused by Covid-19.
  - Q1 to Q4 - Limitations on reporting accuracy due to accurate and timely data not being provided by field officers.
- Non-compliances with clause 8(d), clause 10(f) and clause 10(g) of the Public Lighting Code were due to oversights by the Streetlighting Team.
- Non-compliance with clause 9(b)(iii) of the Public Lighting Code was due to:
  - processes for requests for Public Lighting Services being under review at the time of the non-compliance, and
  - material delays and global shortages.

[l] The Public Lighting Code requires such credits to be paid where the average repair standard for either a complex or general fault is exceeded for that Customer for that year.

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

- In relation to the non-compliance with clause 10(c) of the Public Lighting Code:
  - Q1 to Q4 – The external contractor engaged to deliver the BLR Program mobilised additional crews to complete spot failures in Local Government Areas with large volumes of defects. This is expected to improve in 2022–23 as the BLR Program is now 82% complete.
  - Q3 and Q4 – Local depots with large volumes of streetlighting defects are reprioritising workloads to address defects.
  - Q1 to Q4 – Essential Energy continues to work with suppliers to source stock in a timely manner.
  - Q1 to Q4 – Increased training and awareness on the importance of the provision of timely and accurate data. Field Officers now provide data via electronic means at the time of rectifying defects. A Public Lighting Code compliance plan was submitted to IPART on 26 November 2021. All actions are now complete and improved performance is expected in 2022–23 as a result.
- The 2020–21 annual performance report (required to be provided to Customers under clause 8(d) of the Public Lighting Code) was provided to Customers on 1 August 2022. In addition, Essential Energy created a task to ensure this happens by 31 August each year.
- The relevant Customers' accounts were credited with 0.25% of the total annual maintenance charge on 12 July 2022. In addition, Essential Energy has created a task to ensure this happens by 30 September each year.
- 2 out of 3 requests for Public Lighting Services under clause 9(b) of the Public Lighting Code are now completed, with the remaining open request now compliant as of Q4 due to a mutually agreed timeframe. The processes for requests for Public Lighting Services have been reviewed and finalised. In addition, there has been improved forecasting of stores' requirements, and processes have been amended to improve negotiation practices with Customers.

2.4 NSW Code of Practice for environmental impact assessments

It is a condition of the licences of Transgrid, Ausgrid and Endeavour Energy that they comply with the Code of Practice.[m] The Code of Practice is published by OECC and provides a framework for undertaking environmental impact assessments under Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act).

[m] See ES Act, Sch 2, clause 6A, the *Environmental Planning and Assessment Act 1979*, section 5.6, the Environmental Planning and Assessment Regulation 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 reported no non-compliances with the Code of Practice.

2.5 Distribution Districts

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

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

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

The distribution network operators were compliant with this reporting requirement and licence condition. Details of extensions outside of the distribution network operators' distribution districts are shown in Table 2.7.

Table 2.7 Activity outside network operators' distribution districts

Network operator	Activity outside distribution district
Ausgrid	• As permitted under IPART's standing Instrument of Agreement and Authorisation: – 17 new low voltage service connections – 2 low voltage service disconnections. • 4 new 33kV feeders. Part of the route is within Endeavour Energy's distribution district, as agreed and authorised by Endeavour Energy and IPART.
Endeavour Energy	No extensions or disconnections.
Essential Energy	No extensions or disconnections.

Source: Ausgrid, Endeavour Energy, and Essential Energy annual distribution district reports 2021–22.

2.6 Reporting in accordance with reporting manuals

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

Transgrid, Ausgrid, Endeavour Energy and Essential Energy all failed to report one or more incidents in accordance with the timeframes stipulated in IPART's *Electricity Networks Reporting Manual – Incident Reporting.* Please refer to section 4.4.3 for further details.

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

2.6.1 Ausgrid misinterpreted safety management system reporting requirements

Ausgrid reported generally in accordance with IPART's *Electricity networks reporting manual - Safety management system performance measurement* (SMS Reporting Manual) but did not correctly report the number of outstanding directions for bush fire mitigation work issued to customers.

Ausgrid understood that this was a measure of how many defects were outstanding for more than 60 days past the date at which the defect should have been rectified. However, an audit asserted that the correct measure is the number of occasions when a landowner has not completed mitigation within 60 days of Ausgrid issuing the direction. The audit classified this as a non-material non-conformance.

Ausgrid has now modified its data preparation methodology. IPART has also updated its SMS Reporting Manual to clarify this reporting requirement.

2.6.2 Endeavour Energy did not submit public lighting reports on time

Endeavour Energy did not report in accordance with the Reporting Manual - Public Lighting Code. This is because Endeavour Energy reported 50 Faults without a customer name, reported entities that did not meet the definition of 'Customer' under the Public Lighting Code, and did not report all 'outstanding' Faults. This was because of deficiencies in the process for gathering information and the quality assurance process.

These reporting issues are addressed in Endeavour Energy's public lighting *Compliance Improvement and Action Plan.*

2.6.3 Essential Energy incorrectly reported reliability and performance data

Essential Energy reported in accordance with IPART's *Electricity networks reporting manual - Distribution reliability and performance reporting*, but incorrectly reported the number of claims made under the interruption duration customer service standard in its December 2021 quarterly report. The error was made by an inexperienced staff member. The report was updated and

resubmitted to IPART in April 2022. Essential Energy has advised that it has updated its procedure for the collation of claims information. The procedure now requires a peer review prior to a report being submitted to IPART.

2.7 Payment of Licence Fees

Essential Energy did not pay its annual network operator's licence fee on time because an automated invoice scanning system failed to scan the invoice so that payment could be made. Payment was made when IPART notified Essential Energy of the outstanding payment.

Essential Energy's accounts payable team reintroduced manual uploading of invoices to ensure that payments are made by the due date.

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. A reticulator authorisation is for the operation of a distribution pipeline for the purpose of conveying natural gas. A distributor licence is for the operation of a distribution system for liquid petroleum gas (LPG) and other gases.[a] This authorisation/licence sets out their conditions of operation.

The distributor licence holders are:

- Elgas Pty
- Elgas Reticulation Pty Ltd
- Jemena Gas Networks (NSW) Ltd,[b] and
- Origin Energy LPG Ltd.

The gas reticulators are detailed in Table 3.1.

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

3.1 Gas network operators – Compliance and reporting framework

The gas network operators are required to provide an annual compliance report to IPART. The natural gas reticulators are also required to provide their operating statistics as part of their annual compliance reports. Table 3.1 provides details of the natural gas reticulators and the operating statistics that they are required to report.

[a] Gas transmission pipelines are regulated under the *Pipelines Act (NSW) 1967*.
[b] Jemena Gas Networks distributor's licence authorises the distribution of a mixture of natural gas and hydrogen through an existing distribution system.
[c] OECC is the safety regulator of the gas industry.

Table 3.1 Overview of natural gas reticulators and operating statistics, 2021–22

Reticulator	DPIs[a] supplied as at 30 June 2022[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	1,325	1,311	14	37
Australian Gas Networks (Albury) Ltd	30,667	30,590	77	789
Australian Gas Networks (NSW) Ltd	31,716	31,652	64	1,256[c]
Central Ranges Pipeline Pty Ltd	4,240	4,206	34	26
Evoenergy[d]	21,227	21,172	55	724.54
Jemena Gas Networks (NSW) Ltd.	1,516,193	1,513,200	2,993	26,065
Total	1,605,368	1,602,131	3,237	28,897.54

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

Source: 2021–22 annual compliance reports of the natural gas reticulators.

3.2 Gas network operators' compliance

3.2.1 Natural gas reticulators were compliant

The natural gas reticulators reported no non-compliances in 2021–22. We did not identify any non-compliances with the conditions of the reticulator authorisations.

3.2.2 Gas distributors were compliant

Elgas Pty and Origin Energy LPG Ltd reported no non-compliances in 2021–22, and we did not identify any non-compliances with the conditions of their distributor licences.

We did not receive an annual compliance report from Jemena Gas Networks for its distributor licence as reporting was exception-based.

Chapter 4

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

04

Since 2015, IPART has monitored licensed and non-licensed electricity network operators' compliance with legislated obligations in relation to safety management systems (including bush fire risk management) and incident reporting[a]. This chapter summarises the network operators' compliance with these obligations for 2021–22.

4.1 Safety management system obligations

The ESSNM Regulation requires all electricity network operators to have a safety management system in place that complies with the Australian Standard AS 5577 *Electricity network safety management systems 2013*[b] (AS 5577) and covers certain areas of safety risk.

Safety management system obligations apply to all licensed and non-licensed network operators with electricity assets in NSW.[c] Table 4.1 provides details of the network operators with assets in NSW.

Table 4.1 Electricity network operators with assets in NSW, 2021–22

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

[a] IPART became the regulator of these safety management obligations in June 2015. The Department of Industry previously administered safety management system and incident reporting obligations.
[b] Available for purchase at the SAI Global website.
[c] Refer to Part 2 of the ESSNM Regulation.

The primary objective of an electricity network operator's safety management system 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 safety management system is to support:

- the safety of members of the public and people working on or near a network
- the protection of property, and
- the management of safety risks arising from the protection of the environment and the loss of electricity supply.

See Appendix A.2.1 for more detail.

Box 4.1 Bush fire risk management obligations

The ESSNM Regulation requires network operators to have a safety management system 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. 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: ESSNM Regulation clause 7 and AS 5577 clause 4.3.2.

4.2 Safety management system performance measurements

Each electricity network operator with assets in NSW is required to measure its performance against its electricity network safety management system and publish the results of its performance measurements annually.

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

[d] A major component of the safety management system performance report details the network operator's bush fire preparedness. Refer to section 4.2.1 for further details.

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 five-year averages, and
- using the experience of IPART's engineers.

We reviewed and assessed the safety management system performance reports and we did not identify any safety issues or emerging trends.

Interstate network operators

Four interstate network operators[e] have a small number of electricity distribution and transmission assets in NSW. We continued to grant Energy Queensland, Evoenergy (ACT), AusNet (VIC) and Powercor (VIC) an exemption from publishing their safety performance management measurements because they:

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

We instead requested Energy Queensland, AusNet (VIC) and Powercor (VIC) to provide annual bush fire preparedness reports by 31 October each year. We also asked Evoenergy to provide information about its bush fire risk management. Refer to section 4.2.1 for further details of the bush fire preparedness reports.

We also monitor the compliance of the interstate network operators' safety management systems with the requirements of the ESSNM Regulation by reviewing audits and reports prepared for their jurisdictional regulator (QLD and ACT), 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.

[e] Refer to for details of the interstate network operators with assets in NSW.

4.2.1 Bush fire preparedness reports

In accordance with the *Electricity Networks Reporting Manual – Safety Management Systems Reporting,* Transgrid, Ausgrid, Endeavour Energy, Essential Energy, and Sydney Trains submitted reports by 31 October 2021 which detailed their preparedness for the 2021–22 bush fire season. All the interstate network operators, except Evoenergy, also submitted a bush fire preparedness report for the 2021–22 bush fire season. Evoenergy provided information in response to secretariat correspondence regarding bush fire risk management.

All targeted pre-summer bush fire inspections were reported to be completed by the licensed electricity network operators.

These inspections identify asset and vegetation defects that could impact the network during the bush fire season. Network operators also reported how they managed these asset and vegetation defects:

- **Ausgrid** reported that it had completed all private main inspections and that it had no outstanding vegetation and asset tasks.
- **Endeavour Energy** reported that all pre-summer bush fire inspections had been completed, and that it had no outstanding vegetation and asset tasks. It also reported that approximately 44% of its network area was burnt during the 2019–20 bush fires, and that 44% of its network area was therefore below average risk of bush fire. Endeavour Energy also had a hazard tree remediation plan.
- **Essential Energy** reported that all pre-summer bush fire inspections had been completed and that it had no outstanding high risk asset defects. There were 4 outstanding high risk vegetation defects in its high bush fire risk areas, which were being monitored.
- **Transgrid** reported that it was "very well placed, with large volumes of inspection and defective tasks having been completed and only a small number of tasks remaining outstanding at the time of report submission."

We do not have any significant concerns regarding the bush fire preparedness of any of the licensed network operators.

We also directed independent audits of the licensed network operator's bush fire preparedness for the 2021–22 bush fire season. Refer to section 4.3 for details of the audit scope and to section 4.3.2 for further details of the audit findings and assessment of their bush fire preparedness.

Other Network Operators

We did not request a bush fire preparedness report from Lord Howe Island Board, Metro Trains Sydney, ALTRAC and Keolis Downer for the 2021–22 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 for the 2021–22 bush fire season from Sydney Trains, AusNet Services (Victoria), Powercor (Victoria), Energy Queensland, and Direct Link. We also received requested information from Evoenergy (ACT).

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

- **Sydney Trains** completed all of its pre-summer target bush fire inspections of its poles in preparation for the 2021–22 bush fire season. They reported a low number of outstanding tasks in low-risk locations, with plans for completion by 30 November 2021.
- **AusNet Services** reported that they had completed all necessary rectification works prior to the commencement of the bush fire danger period except some open vegetation tasks of lower priority that had been scheduled to complete later in 2021. In a follow up, AusNet confirmed the 19 spans of concern had been re-assessed and rescheduled for action in April 2022.
- **Powercor** reported a small number of lower priority maintenance tasks due for completion in early March 2022.
- **Energy Queensland** reported that all necessary asset and vegetation inspections had been performed for all Ergon Energy network assets. There were 7 remaining defects identified in NSW which were to be completed at the time of reporting. Energy Queensland confirmed in May 2022 that they had completed all the defects except one which would be completed by the end of the month.
- **Direct Link** reported that there has been no events or incidents associated with bush fire risk management. In addition, Directlink had not identified any non-compliances with its safety management system (SMS) or the Directlink SMS plan, in relation to the bush fire management process.
- **Evoenergy** reported no outstanding tasks and no other significant concerns.

4.3 Audits of network operators

We directed independent audits of licenced electricity network operators in NSW (Ausgrid, Endeavour Energy, Essential Energy and Transgrid) to assess their compliance with the obligations of the ESSNM Regulation. The audits focused on the bush fire risk management aspects of their ENSMS and considered matters including:

- planning, implementation, measurement and evaluation, management review and change management of bush fire risk management components, including whether bush fire preparedness can be observed in the field
- outstanding bush fire risk management non-compliances, and
- whether the information related to bush fire risk controls reported in their bush fire preparedness reports is complete and accurate.

The audits were conducted between December 2021 and March 2022.

The ACT's Utilities Technical Regulator (UTR) also commissioned an audit of the bush fire risk management component of Evoenergy's ENSMS.[f] IPART observed the audit and UTR shared the final audit report with IPART. Evoenergy shared its plans to address the non-compliances found.

The audit to assess the effectiveness of Evoenergy's bush fire risk management processes was conducted from March 2021, but the final audit report was delivered in November 2021. Delivery of the final audit report was delayed due to some factual disagreements that needed to be resolved between the auditor and Evoenergy. The audit scope was applicable to Evoenergy's assets in NSW and included scope items specifically focussed on NSW requirements.

Refer to section 4.3.2 for details of the audits.

4.3.1 We also directed another audit of Ausgrid's ENSMS

In 2020–21 we considered the audit findings from the following audits of Ausgrid:

- the extent to which public and worker safety (PAWS) risk management controls have been implemented, and their effectiveness in supporting the primary objectives of the ENSMS, and
- how the management of risks of working on or near energised assets on its network (Live Work) had been implemented.

In May 2021 we directed Ausgrid to modify its ENSMS to rectify the Live Work non-compliances, and a non-compliance from the PAWS audit related to public safety. We took this action because rectifying these non-compliances would reduce the risk of further serious safety issues. In 2021-22, we directed a further audit to ensure that Ausgrid had rectified all non-compliances in accordance with our direction and their rectification plan.

Refer to section 4.3.3 for details of the audit.

We did not direct audits of any other network operators this year.

[f] Evoenergy is subject to regulation by the UTR under the requirements of the *Utilities (Technical Regulation) Act 2014* and the *Emergencies Act 2004*.

4.3.2 Bush fire risk management audits

The auditors' findings from the bush fire risk management audits were positive overall and identified strengths for the network operators.

Ausgrid's auditor noted:

> Based on the evidence sighted during the field visit, our discussions with the personnel responsible for managing bush fire risk, and the review of the documentation provided to us as part of this audit, we are of the opinion that Ausgrid has the controls and systems in place to manage bush fire risk to ALARP [as low as reasonably practicable].

The auditor also noted that:

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

Endeavour Energy's auditor noted:

> Over the last 2 years significant development of the Endeavour Energy ENSMS is evident with improved processes and procedures, greater integration of ENSMS system components and embedment into the business.
>
> The ENSMS has been implemented commensurate with the size and complexity of the electricity network operated by Endeavour Energy with ongoing efforts for continuous improvement.

The auditor also identified several key strengths for Endeavour Energy in the audit including timely completion of pre-summer inspections and resulting rectification works, management of private line defects in a timely manner, and a high level of sophistication in analysis to identify and prioritise effort to locations and assets where the risk was elevated.

Essential Energy's auditor noted:

> Essential Energy is seen to be continuing to develop its ENSMS and this is evident through an ongoing improvement program that is implementing improved supporting processes and procedures for the management of bush fire safety risks due to Essential Energy's electricity network.
>
> The ENSMS is seen to be designed and maintained in accordance with AS5577. It deals with the management of bush fire risk relating to electricity lines and other assets of the network operator's network that are capable of initiating bush fire, and management of bush fire risk relating to aerial consumers mains on bush fire prone land that is private land.

> The ENSMS has been implemented commensurate with the size and complexity of the electricity network operated by Essential Energy with ongoing efforts for continuous improvement.

The auditor also identified several key strengths for Essential Energy including timely completion of pre-summer bush fire inspections and resulting rectification works, management of defects in a timely manner, continued development of management oversight and improvement of the ENSMS, as part of closing out previous non-compliances.

Transgrid's auditor noted:

> Transgrid has a mature approach to network risk management demonstrated through its ENSMS and bush fire FSA [formal safety assessment]. Transgrid clearly understands the hazards that may give rise to a network-initiated bush fire and has an effective process in place for identifying relevant risk controls and managing their ongoing effectiveness. There is a demonstrated commitment on Transgrid's part to managing this risk to ALARP.

Evoenergy's auditor noted:

> Evoenergy has an observed commitment to improving the way that they manage bush fire risk, with several discernible improvements in their processes over those that were reported in the previous audit in 2019. Understanding that they have difficulty in some areas gaining adequate vegetation clearances from lines, they have actively explored innovative solutions to reduce the likelihood of bush fire initiation; for example, a trial of Intellirupter circuit breaking technology proceeding to implementation as a piece of standard network equipment.

The auditors identified non-compliances in the distribution network operators' bush fire risk management

The auditors did not find any non-compliances in Transgrid's bush fire risk management audit but found non-material non-compliances for Ausgrid, Endeavour Energy and Essential Energy. Evoenergy's auditor identified material and non-material non-compliances.

Non-compliances identified by the auditors are summarised in Table 4.2.

Table 4.2 Summary of bush fire risk management non-compliances

Network operator	Summary of non-compliances
Ausgrid 3 Non-material non-compliances	• Ausgrid lacks a procedure setting out the governance arrangements in its ENSMS action register. Currently, no one is responsible for managing the register and ensuring the actions are appropriately entered and tracked. • Ausgrid has misinterpreted one requirement in Table B.1 "Aerial consumer mains on bush fire prone private land (HV and LV)" within the Bush fire Preparedness Report. • There is insufficient information within the annual safety management system performance report, and contained within the Basis of Preparation document, to enable the reader to understand the wider context of the reported information throughout the report.

Endeavour Energy 5 Non-material non-compliances	• Endeavour Energy has grouped differing asset types together when analysing risk and treatments in the Bush fire FSA. The FSA and the supporting documents did not demonstrate analysis at an appropriately granular level. • Endeavour Energy has not quantified the consequences and likelihood for each hazardous event (or threat) in compliance with AS 5577 Clause A3.2 a) and b). However, the auditor noted that the identified non-compliance is not that the analysis is not being done but that it is not documented in the Bush fire Risk Register. • Endeavour Energy has not adequately documented in its Bush fire FSA, the consideration of further practical safety improvement opportunities, even though risks have been assessed as ALARP. • Endeavour Energy did not observe a documented estimation of residual risks for each hazardous event (or threat), in compliance with clause A3.2(c) of AS 5577.
Essential Energy 3 Non-material non-compliances	• Essential Energy did not explicitly address the requirements of Table A1.6(d) of the IPART audit guidelines and did not include evidence that shows that completeness checks have been performed as per the requirements, in the Bush fire FSA. • Essential Energy's CEOP1000.27 Safe Design does not explicitly address the requirements of AS 5577 clause 4.3.2. • Essential Energy's ENSMS Plan Section 4 is not providing sufficient information to comply with AS5577 Section 4.4.2 and procedures that are used to implement and manage the ENSMS.
Evoenergy 3 Material and 9[g] Non-material non-compliances	We have summarised the auditor's findings (grouped into themes identified by the auditor). *Theme 1: ENSMS not adequately developed and implemented (3 Material and 2 Non-material scope items)* • Evoenergy's ENSMS and bush fire FSA does not fully comply with Australian Standard AS 5577-2013. This shows that Evoenergy has an incomplete understanding of the FSA process including the application of ALARP. • The impact of Evoenergy's incomplete understanding of the FSA process is that opportunities to identify control effectiveness gaps are missed. • Further, 4 out of 7 actions identified in Evoenergy's Electricity Safety Plan (ESP), which is essentially the FSA implementation plan, were not delivered by their due date. *Theme 2: Overreliance on Subject Matter Expert (SME) judgement, without an adequately documented organisational approach (3 Non-material scope items)* • Evoenergy places significant reliance on undocumented expert knowledge and opinion to manage aspects of the key risks of asset failure and vegetation contact. This manifests itself especially in the assessment of fall-in hazard trees (particularly in the way that the likelihood that a tree will fall is assessed.) and the prioritisation of asset defects. *Theme 3: Other (3 Non-material scope items)* • No independent verification that hardware defects have been completed. • In addition to sub transmission issues (which do not impact assets in NSW), Evoenergy identified 39 sites where protection devices on the overhead distribution network needed upgrading, yet by the time of the audit only 35 of these sites had been completed, leaving four sites non-compliant. • Evoenergy's vegetation management requirements do not specifically require the application of the NSW jurisdictional standard, ISSC3. However, the auditor did find that "ACT requirements generally exceed ISSC3 requirements"

[g] One of the non-material non-compliances does not relate to Evoenergy's NSW regulatory obligations. As such, we have not discussed this non-compliance in this report.

Overall, the audits show that Ausgrid, Endeavour Energy and Essential Energy are performing reasonably well in meeting their bush fire risk management obligations.

Distribution network operators are rectifying the non-compliances

The audit findings do not indicate any need for immediate action on safety grounds, although there is a need for improvement in some areas (particularly documentation).

The network operators' proposed rectification actions respond directly to these deficiencies, and the proposed timeframes appear reasonable, with the most critical actions to be rectified ahead of the upcoming bush fire season. Future ENSMS audits will check that network operators have followed their rectification plans and become compliant.

Ausgrid confirmed in its letter to IPART in August 2022, that it has completed all the rectification actions for all non-compliances from the audit and the one outstanding action from the previous audit.

Essential Energy initially proposed to rectify all non-compliances from the audit by November 2022, but revised this date to 30 September 2022, on the ENR Committee's request to rectify the non-compliances prior to the start of the 2022–23 bush fire season. It also confirmed the completion of the outstanding non-compliance from the 2021 bush fire audit in July 2022.

Endeavour Energy confirmed the completion of its outstanding non-compliance action from the 2020 bush fire audit, in August 2022. It proposes to complete the non-compliances from the current audit by 31 December 2022, although the ENR Committee has encouraged them to rectify the non-compliances prior to the start of the 2022–23 bush fire period.

Evoenergy[h] has also provided a rectification plan. We consider Evoenergy's rectification actions address the non-compliances. We expect that most rectification actions were complete by mid-2022.

4.3.3 Ausgrid's follow up live work and PAWS audit

We directed Ausgrid to audit compliance with our 2021 ENSMS direction

We directed an audit to ensure that Ausgrid rectified all previous outstanding non-compliances in accordance with our direction (refer to section 4.3.1 for details) and its rectification plan.

The audit direction was in response to the ENR Committee's earlier decision to direct Ausgrid to modify and implement its ENSMS relating to non-compliances from the 2020 live work audit and the 2020 public and worker safety (PAWS) audit.

[h] Evoenergy has reported that it owns only 263 poles supporting some 90km of mains in NSW. Only some of these assets are on bush fire prone land.

This audit also involved assessing Ausgrid's more complex live work practices that Ausgrid resumed following its pause on live works.

The audit found 8 non-material non-compliances which are outlined below. The non-compliances generally relate to non-compliances with the ESSNM Regulation which requires that the network operator's Safety Management System must be in accordance with AS 5577.

Live work component audit findings

The auditor identified strengths with the live work component of the audit including:

- "The 'Live Work Project' that Ausgrid initiated to reassess all aspects of the way that Ausgrid carries out live work represented a comprehensive, risk-based review of this work method."
- As part of the project, Ausgrid developed a critical controls assurance process for the purpose of providing assurance that critical controls for other fatal risks to Ausgrid workers are being effectively implemented.

However, the auditor noted that the search of potential additional controls more generally (a key element of a 'so far as is reasonably practicable' (SFAIRP) assessment), appeared to be limited by the extent to which Ausgrid engaged with external stakeholders who may have subject matter expertise, and that there was lack of two-way engagement with Accredited Service Providers (ASPs).

The auditor found 4 non-material non-compliances with the live work component of Ausgrid's ENSMS direction:

- It has not demonstrated that the suite of controls to manage ASP risks collectively reduce these risks, within the constraints imposed by the ASP Scheme, to SFAIRP.
- It has not adequately demonstrated that its initiatives developed as part of its live work review project have been considered as part of a SFAIRP assessment for the risk associated with live work.
- Its process for demonstrating network safety risks does not adequately consider the question "Why have we not done it?" when evaluating the residual risk associated with an activity.
- Its guidance documentation on how SFAIRP can be demonstrably achieved does not provide sufficient guidance on how SFAIRP can be demonstrably achieved beyond a limited scope of risks.

Additionally, the auditor found 3 non-compliances with the Ausgrid's planning processes for Ausgrid's other live works tasks it had resumed since its pause on live work:

- The process by which it demonstrates that its controls to manage the risks associated with working live collectively reduce these risks SFAIRP has not been adequately implemented.
- It has not demonstrated that all available controls have been considered to manage the risk of harm to contractors' employees.
- It has not demonstrated that all available controls have been considered to manage the risk of harm to ASP contractors.

PAWS component audit findings

The auditor found some strengths with Ausgrid's management of live conductor risks in the PAWS component of the audit, including that Ausgrid:

- has sufficient systems and practices in place to manage the risk of conductor failure due to excess fault current SFAIRP
- is managing this aspect of the overall risk satisfactorily and no further measures could be practicably employed at this stage to lower the risk associated with closed low voltage parallels
- is managing the risk (that a member of the public will be harmed through contact with a live fallen conductor) generally in line with how similar network businesses manage the risk.

The auditor found one non-material non-compliance with the PAWS component of the ENSMS direction relating to Ausgrid not demonstrating that it has fully evaluated the residual risk by carrying out a comprehensive SFAIRP evaluation.

Ausgrid provided a rectification plan and we decided not to take further action

Ausgrid submitted an action plan to address the non-compliances by 1 December 2022. The actions primarily relate to reviewing and updating its risk assessment documentation and procedures to ensure there is additional investigation of controls and to demonstrate that its controls collectively reduce the live work and the public risks from the electricity network SFAIRP in accordance with AS 5577.

Based on the auditor's findings, Ausgrid did not fully comply with the ENR Committee's ENSMS Direction. However, as we considered Ausgrid had undertaken significant effort and improvements with its management of live work and made progress toward rectifying the previous non-compliances, the ENR Committee decided not to take any further enforcement action.

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".[i]

4.4.1 Significant safety incidents

In 2021–22, the electricity network operators reported 3 incidents to have occurred on the electricity networks that resulted in loss of life.[j] Details of the incidents are provided in Table 4.3.

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

Table 4.3 Incidents resulting in loss of life, 2021–22

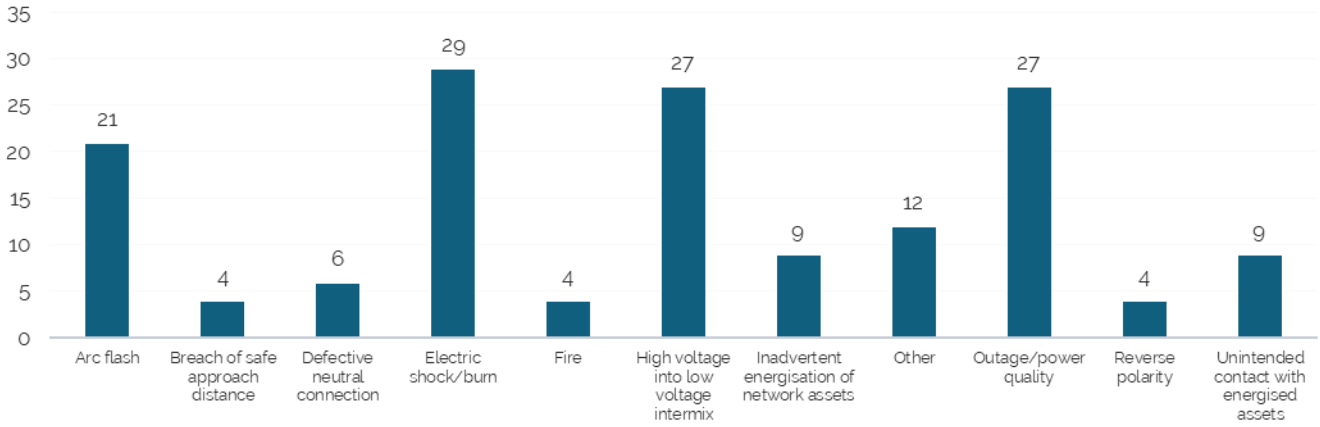
Parties involved	Type of incident	Incident details
Public workers	Electric shock/burn	• Two farm workers were flipping fence rail (approximately 6 meters in length) end over end to flatten weeds. • Fence panel was either lifted into, or the overhead conductor arced to the fence panel, causing electric shock to both workers involved. • The overhead 22kV conductors were measured at a height of 6.3 meters following the incident. • This incident resulted in loss of life of both workers.
Member of the public	Electric shock/burn	• 71-year-old neighbour assisting with flood assistance suffered fatal electric shock. • While attempting to break open a conduit containing energised low voltage underground service mains under the house to allow water to escape, the victim made contact with a screwdriver and received an electric shock (143V measured on screwdriver to earth).
Public workers	Electric shock/burn	• Member of the public operating a spray rig contacted the overhead 11kV network and was found deceased on the site during line patrol to investigate the earth fault and recloser operation. • The operator exited the rig whilst the boom of the rig was still in contact with the network, causing the operator to receive an electric shock.

4.4.2 Types of incidents reported, and parties affected

In 2021–22, 152 incidents were reported to IPART by the electricity network operators.[k] Figure 4.1 shows the types of incidents that occurred, and Figure 4.2 shows the parties that were affected by these incidents.[l]

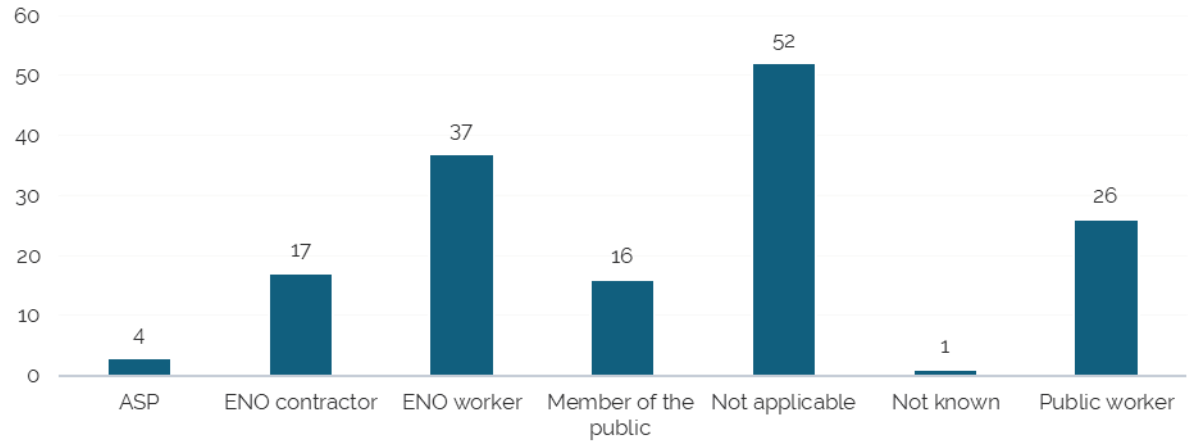
[i] Dictionary to the ES Act.
[j] Excluding incidents involving motor vehicles.
[k] Category 3 incidents not included. Category 3 incidents (Other SEWAs) meet the definition in the ES Act of a SEWA, but do not meet IPART's definitions for Category 1 or Category 2 incidents.
[l] In 2021-22, Essential Energy submitted reports for 3 incidents that were due in 2020-21. These incidents were not included in the count of incident numbers for the financial year currently being reported on.

Figure 4.1 Types of incidents reported



Note: 'Breach of safe approach distance' and 'Unintended contact with energised assets' by network operator employee or contractor.
Source: Stage 1 incident reports submitted to IPART for incidents that occurred in 2021–22.

Figure 4.2 Parties affected by incidents in 2021–22



Notes: Incidents marked 'Not applicable' are those caused by animals or the weather. Electricity network operator (ENO)
Source: Stage 1 incident reports submitted to IPART for incidents that occurred in 2021–22.

The highest number of incidents reported include arc flash, electric shock/burn, high voltage into low voltage intermix, and outage and power quality events. A summary of the networks' proposed mitigative and preventive measures for these incidents are detailed below.

Arc flashes

- Continue public safety campaigns to increase the awareness of network assets and the importance of the Dial Before You Dig program.

- Involved workers stood down post incident and returned to active duties following disciplinary actions and competency assessments.
- Review of procedures and processes from opportunities identified in post incident reviews.

Electric shocks/burns

- Toolbox talk undertaken and safety brief communicated to all staff.
- Continue public electricity safety awareness campaigns to:
  - increase the awareness of electrical assets
  - increase awareness of maintaining private vegetation within safe clearances of service wires on private properties
  - stay 8m from fallen power lines.
- Continue regular service wire replacement and inspection programs.
- Any identified defective services on customers' properties are recorded and followed up with impacted customers.
- Installation of aerial markers to avoid contact with overhead powerlines.

High voltage into low voltage intermix

- Continue to conduct regular vegetation assessments within the network area to maintain vegetation clearance around pre-determined at-risk areas of the network.
- Developed a plan to catch up on the backlog of inspections and secure additional resource.[m]
- Consider including composite crossarms and wildlife covers on insulators to prevent animal induced flashover to earth.
- Incident details will be collated and inform ongoing maintenance programs and priorities.

Outage and power quality

- Branch procedure updated with the most recent flood levels. Additional predefined switching locations will be added in relation to new flood levels.
- New learnings acquired from flood events will be used to increase the height of strategic transmission line river crossings to avoid transmission outages.
- Conduct further post event reviews to improve resilience against major flood events.
- Review fault and emergency responses. Identify improvement opportunities in post incident debrief.
- Undertake climate risk modelling to understand changing risk impact to the network.

[m] We will contact the network operators during 2022–23 to ensure that the backlog of inspections is being adequately managed.

4.4.3 Compliance with incident reporting obligations

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

Box 4.2 Why are some incidents reported late?

Many late reports were due to mitigating circumstances. In some cases, the network operator may not have been initially aware of the incident. For example:

- incidents where motor vehicles impact the network are often not immediately reported to the network operator if there is no damage to the network,[o] and
- very minor safety incidents (non-reportable) where an injured person does not initially seek medical treatment, but later receives medical treatment after their injury worsens.

Table 4.4 Incident reports submitted outside reporting timeframes, 2021–22

Network operator	Number of reports outside reporting timeframes[a]
Transgrid	1
Ausgrid	11
Endeavour Energy	9
Essential Energy	11

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

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

Some of the reasons provided by network operators for submitting incident reports outside of reporting timeframes are summarised below:

- delay in either receiving or confirming details of the incidents due to:
  - lack of awareness of the incidents
  - injured workers reporting incidents only after treatment received
- weather conditions caused delays in restoration, incident completion and calculation of major event day outage calculations
- incorrect classification of incidents
- process and human errors.

[n] 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.

[o] In February 2022, IPART's *Electricity networks reporting manual - Incident reporting* was updated to align with the amendments to the ES Act which excludes the notification of motor vehicle accidents on land not owned or controlled by a network operator where electricity did not contribute to the incident.

Chapter 5

Our compliance approach and activities

05

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

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

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

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

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

During 2021–22, we:

- developed a draft *Energy Networks Regulation Strategic plan* and proposed compliance and enforcement priorities. We consulted with our stakeholders, considered their feedback, and updated the strategic plan. The strategic plan was approved in October 2022. Refer to section 5.1 for further details.
- conducted a review of the licences in force under the ES Act. This included the licences held by Ausgrid, Endeavour Energy, Essential Energy and Transgrid. The review was conducted to assess whether the existing licences remained appropriate by ensuring that the licences reflect current public expectations and regulatory practice. The Minister excluded distribution reliability and performance licence conditions from the scope of the review because these licence conditions are the subject of a separate review previously referred to the Tribunal.
- released a Draft Report with Draft Operating licences in January 2022. Following detailed analysis and clarification of submissions made in response to the Draft Report, we finalised our review. The Final Report was issued to the Minister on 8 September 2022 and included revised draft licences for the Minister's consideration.
- updated our *Electricity networks reporting manual -NSW Public Lighting Code compliance reporting* to reflect amendments to the Code, including additional quarterly and annual performance reporting requirements, and miscellaneous amendments. We also updated the *NSW Public Lighting Code Reporting Template* to reflect the changed reporting requirements.

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

- updated our *Electricity networks reporting manual - Incident reporting* to amend the description of Category 1, 2 and 3 incidents to align with the amendments to the ES Act relating to the exclusions of motor vehicle accidents from reporting requirements. We also amended the definition of a distribution system to include stand-alone power systems.
- directed audits of Transgrid, Ausgrid, Essential Energy and Endeavour Energy for bush fire risk management in preparation for the 2021–22 bush fire season. Refer to Section 4.3 for further details.
- directed an audit of Ausgrid to ensure it had rectified all non-compliances in accordance with our direction (May 2021) to modify its ENSMS to rectify the Live Work non-compliances, and a non-compliance from the PAWS audit related to public safety. Refer to Section 4.3 for further details.

5.1 We developed an Energy Networks Regulation Strategic Plan

During 2021–22 we commenced developing a strategic plan. This will allow us to better adapt our role to meet these challenges and ensure we are meeting the expectations of our stakeholders, including the people of NSW. In developing this 2022–25 *Energy Networks Regulation Strategic Plan*, we engaged with numerous stakeholders and harnessed new and innovative thinking.

We considered the mission for the Energy Networks Regulation function within IPART as well as what regulatory outcomes we are seeking and the measures of our success. We identified the key risk areas facing the industry we regulate, and their relative risks. Based on these inputs and in response to these risks, we will identify our compliance and enforcement priorities and update them annually. Finally, we have identified actions we need to complete in order to deliver on the promise of this strategic plan.

Our mission and our regulatory outcomes are detailed below. The *Energy Networks Regulation Strategic Plan* and our *Compliance and enforcement priorities* are available on our website.

5.1.1 Our Mission

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

5.1.2 Our regulatory outcomes

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

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

5.2 Our engagement with other government departments and regulatory bodies

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

In particular, we work closely with the OECC, SafeWork NSW and the Cyber and Infrastructure Security Centre within the Commonwealth Department of Home Affairs. We also collaborated with:

- the Office of the National Rail Safety Regulator throughout the year to develop a better understanding of how they regulate the rail and light rail operators in NSW, and the safety issues that they have identified
- Energy Safe Victoria to better understand the network related safety issues in Victoria and the safety performance of the Victorian network operators

- the Utilities Technical Regulator in the ACT to understand the performance of the bush fire risk management component of Evoenergy's ENSMS.

We will continue to collaborate with other government departments and regulatory bodies to share ideas, learnings and enhance our regulatory approaches.

5.2.1 Public Lighting Code

As we are responsible for monitoring compliance and enforcement of the Public Lighting Code, we provided input to OECC for its latest review of the code. We also participated in forums to help discuss revisions to the code and observed a working group to help develop reporting requirements that should be included in the next revision of the Public Lighting Code.

We expect the next revision of the Public Lighting Code to be released by OECC in 2022–23.

5.2.2 Participation in the NSW Industry Safety Steering Committee

IPART participates in the NSW Industry Safety Steering Committee (ISSC), which was established to identify opportunities to improve electricity network safety. During 2021–22, IPART continued to provide summarised information to the ISSC on incidents and near misses reported by the licensed network operators and Sydney Trains and provided analysis of incidents to draw out emerging trends and issues. IPART's participation and collaboration with network operators has helped to facilitate solutions to improve safety in the electricity industry.

Appendices

Appendix A

Legal frameworks applicable to electricity and gas networks operating within NSW

A.1 IPART's role in monitoring compliance

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

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

Box A.1 Statutory requirement for this report

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

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

Since 2015, we have been responsible for regulating the safety of NSW electricity network assets. In this role, we monitor compliance with the requirements of the ESSNM Regulation by both licensed and non-licensed network operators with electricity network assets within NSW.[a] There is no statutory requirement to report our findings, as compliance with the ESSNM Regulation is not a licence condition. However, given the potential safety risks that electricity network operations inherently present, we see value in us communicating this information to the Minister for transparency and to keep him 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 provides more detail on the electricity and gas network operators covered by this report, and the information we use to assess their compliance performance.

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

A.2 The energy network safety and reliability legal framework

A.2.1 Electricity Supply (Safety and Network Management) Regulation 2014

The ESSNM Regulation requires all electricity network operators to have in place, and implement, safety management systems that comply with 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) 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 safety management systems and publish the results of their performance measurements annually.[b]

IPART may require the network operators to audit their safety management systems or aspects of their safety management systems, 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 its safety management system or to take specified action to implement its safety management system.

Summary of safety management system 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 a safety management system in place and implemented that is in accordance with AS 5577, takes into account the primary objective of a safety management system 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 ignition risk management, where electricity lines and other assets are capable of initiating bush fire.
- The primary objective of an electricity network operator's safety management system 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 safety management system is to support:
  - the safety of members of the public and people working on networks
  - the protection of property, and

[b] The Tribunal may however exempt network operators from this requirement. Exemptions had been provided to the interstate network operators who have assets located within NSW, because these network operators are required to report to their own jurisdictional regulators.

  - 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 safety management system 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 safety management system, or to the safety management system as a whole.

A.2.2 Licensed electricity networks

Ausgrid, Endeavour Energy and Essential Energy each hold a distributor's licence. 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.

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

The 3 licensed distribution network operators, Ausgrid, Endeavour Energy and Essential Energy have reliability and performance standards and customer service requirements specified in their licence conditions. The licensed distributors are required to report on compliance with those conditions quarterly, to conduct an independent compliance audit of those conditions at the end of each financial year, and to provide the audit report to IPART. Transgrid is also required to comply with a *NSW Transmission Reliability and Performance Standard 2017* and is required to 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 Code of Practice for environmental assessment of activities they undertake. They must report to IPART on any non-compliance with the Code of Practice (or an immediate report if the breach is serious in nature).

A.2.3 Licensed gas networks

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

Origin LPG and Elgas Ltd hold three 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.1 Overview of NSW electricity licence holders

Licence holder	Network type	Approximate number of customers	Area of operation
Transgrid	Transmission	20 directly connected	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	1.7 million	Sydney, the Central Coast and the Hunter Valley.
Endeavour Energy	Distribution	2.6 million	Sydney's Greater West, the Blue Mountains, the Southern Highlands, Illawarra and the South Coast of NSW.
Essential Energy	Distribution	More than 855,000	95% of NSW (areas not covered by Ausgrid and Endeavour Energy).

Source: Transgrid website - 2019, Ausgrid website, '*About us*', Endeavour Energy website, 'About us', Essential Energy website, '*Our Network Area*'.

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

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

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

Table B.3 Gas authorisation holders in NSW

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

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

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

B.2 How we assess compliance

IPART takes a risk-based approach to prioritise how we target compliance. This means that we target our compliance resources toward the areas of risk that are most likely and have the highest consequence. We have continued to refine our risk-based approach to compliance regulation, and to our reporting frameworks and guidance materials. In line with this approach, we currently maintain a 5-year audit and reporting schedule for each electricity network operator which we amend to reflect any recently identified priority areas for improving their compliance with safety management requirements. Our audit schedule will be updated in 2022–23 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 we request.

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 systems (except where an exemption has been provided), and
- bush fire risk mitigation activities.

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

B.2.2 Audits of electricity network operators

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

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

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

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

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

Auditors must assess the network operators' compliance against all applicable obligations, and assign grades of compliance in accordance with IPART's electricity networks grading system detailed in our *Electricity networks audit guideline – Audit fundamentals, process and findings.* Refer to Table B.4 for details of the grading system.

Table B.4 IPART compliance gradings

Grades of compliance	Description
Compliant **Compliant**	Sufficient evidence to confirm that the requirements have been fully met.
Non-compliant (non-material) **NC (NM)**	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) **Non-compliant**	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 **Compliant**	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]

[b] Condition 8.1 of the Transgrid Licence, and condition 11.1 of the Ausgrid, Endeavour Energy and Essential Energy Licences.

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 requested by IPART.

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

Ausgrid, Endeavour Energy and Essential Energy must also engage an independent auditor from IPART's reliability audit panel (or have their nominated auditor approved by IPART) and submit an annual audit report for the preceding financial year by 30 September each year. 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 report provided to IPART must provide details of non-compliances against the Public Lighting Code, including performance against the Fault Service Standards. Under the Service Standards, Ausgrid, Endeavour Energy and Essential Energy are required to repair:

- Complex Faults[c] within 30 business days and within 25 business days on average for each customer
- General Faults[d] within 10 business days, and within 8 business days on average for each customer
- Faults[e] with an excluded fault condition within the permitted repair standard (which, depending on the 'fault condition' that applies to the fault, is either 100 business days or a timeframe agreed between the Service Provider and customer).

[c] Clause 17 of the Public Lighting Code defines Complex Faults as faults related to Repairs not subject to an Excluded Fault Condition:
i. Where a site-specific traffic management plan and an additional dedicated traffic control crew are required; and/or
ii. Where a site-specific Road Occupancy Licence or other specific authority for road occupancy is required; and/or
iii. Where identification of an underground fault is required; and/or
iv. Where access to private property is required.

[d] Clause 17 of the Public Lighting Code defines General Faults as all Faults that are not Complex Faults and are not subject to an excluded fault condition.

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

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

B.6 Code of Practice for environmental impact assessments

As compliance with the Code of Practice is a condition of their licences, Transgrid, Ausgrid and Endeavour Energy are required to report any non-compliances with the Code of Practice 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 systems. Auditors must assign a grade of compliant, non-compliant (non-material) or non-compliant (material).[g] Based on the results of these audits, we can direct the network operators to modify or implement their safety management systems 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.

Working on energised network assets is another ongoing area of key risk management focus for IPART. Through our analysis of audit reports, incident reports and safety management system performance reports, we determine if network operators have reduced the risks to as low as reasonably practicable for work on energised assets.

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

[g] Refer to Table B.4 and IPART's *Electricity networks audit guideline – Audit fundamentals, process and findings* 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).

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

IPART monitors the incidents reported to ensure:

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

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

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

Appendix C

Electricity network operators' reliability and performance

C.1 Reporting requirements

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

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

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

C.2 Distributors' performance against overall network reliability standards

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

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

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

Feeder Type	Definition
Feeder	means a high-voltage line operating at over 1kV and generally at or below 22 kV that connects between a zone substation and a distribution substation.
CBD Sydney	means a feeder forming part of the triplex 11kV cable system supplying predominantly commercial high-rise buildings, within the City of Sydney.
Urban	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.
Short-rural	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.
Long-rural	means a feeder with a total feeder length greater than 200 km which is not a Sydney CBD feeder or an urban feeder.

[a] Refer to conditions 4 to 7 of each of the Distributors' current licences. 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.

Table C.2 identifies network performance against the SAIDI average standards as reported by the Distributors for the 12-month period from 1 July 2021 to 30 June 2022. We note that 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 2021–22 is for the 12-month period up to 30 June 2022.

Table C.2 Performance against the SAIDI average standards (minutes per customer) for 2021–22

Distributor	Feeder type	Required standard	Reported performance	Compliant with licence condition
Ausgrid	CBD Sydney	45	6.15	☑
	Urban	80	62.94	☑
	Short-rural	300	130.64	☑
	Long-rural	700	1,563.16	☒
Endeavour Energy	Urban	80	46.70	☑
	Short-rural	300	218.50	☑
	Long-rural[a]	N/A	1909.20	N/A
Essential Energy	Urban	125	67	☑
	Short-rural	300	200	☑
	Long-rural	700	498	☑

Note: A feeder type is performing better or equal to the standard if its reported performance is equal to, or below the standard value. The SAIDI performance data is as per the figures reported by Ausgrid, Endeavour Energy and Essential Energy.
a. Endeavour Energy does not have a required SAIDI and SAIFI standard for the Long-rural feeder type. Approximately 0.3% of Endeavour Energy's customers comprise the Long-rural category.

Source: Q4 2021–22 quarterly reliability reports for Ausgrid, Endeavour Energy and Essential Energy.

Table C.2 shows that Ausgrid exceeded the SAIDI standard for long-rural feeders. This was because there were 3 long interruptions (the longest up to 378 hours) which affected a relatively small number of Ausgrid's customers. The interruptions were caused by flooding, and trees which fell during extreme weather conditions. Weather conditions made it difficult for Ausgrid to repair and restore the network.

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

Table C.3 identifies performance against the SAIFI average standards as reported by the Distributors for the 12-month period from 1 July 2021 to 30 June 2022.

Table C.3 Performance against the SAIFI average standards (number per customer) for 2021–22

Distributor	Feeder type	Required standard	Reported performance	Compliant with licence condition
Ausgrid	CBD Sydney	0.3	0.01	☑
	Urban	1.2	0.55	☑
	Short-rural	3.2	0.93	☑
	Long-rural	6.0	2.04	☑
Endeavour Energy	Urban	1.2	0.45	☑
	Short-rural	2.8	1.32	☑
	Long-rural	N/A	7.46	N/A
Essential Energy	Urban	1.8	0.81	☑
	Short-rural	3.0	1.60	☑
	Long-rural	4.5	2.72	☑

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

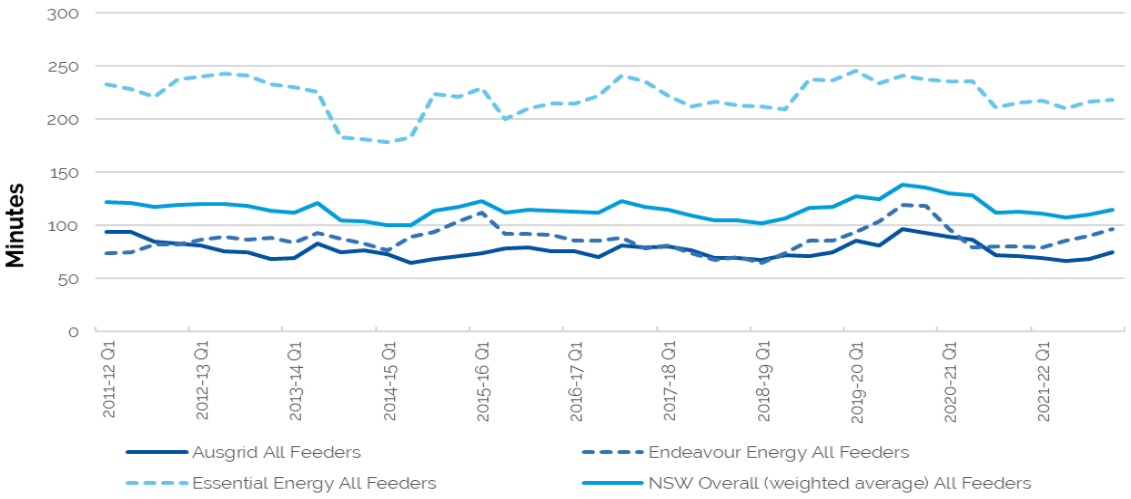
Source: Q4 2021–22 quarterly reliability reports for Ausgrid, Endeavour Energy, Essential Energy.

C.2.1 Long-term SAIDI and SAIFI trends

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

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

Figure C.1 SAIDI, quarterly results by Distributor



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

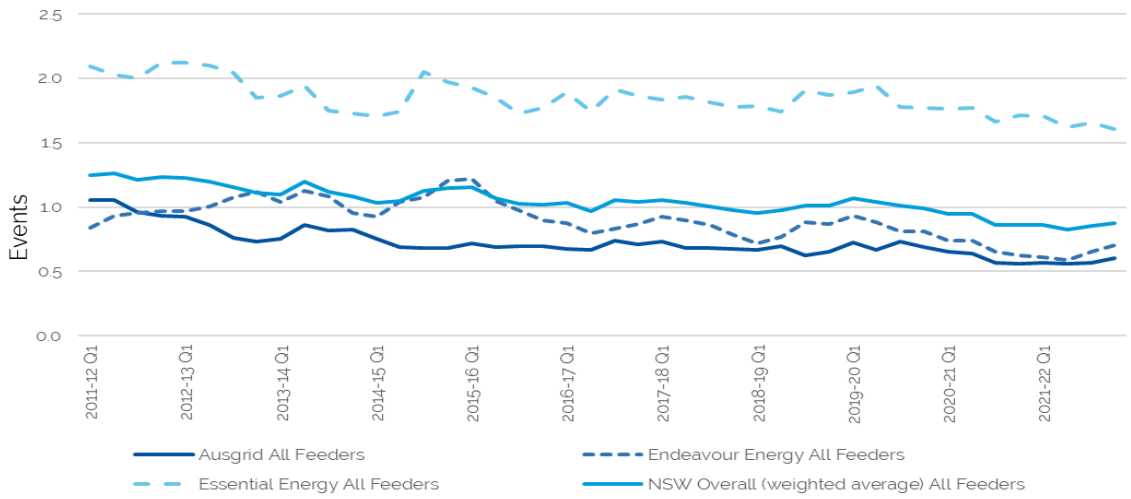
Source: Quarterly reliability reports for Ausgrid, Endeavour Energy, Essential Energy, and data provided to IPART by the then Department of Industry.

Overall, for NSW:

- the 5-year average interruption time is 117 minutes per customer, and
- there are no significant SAIDI trends over the graphed data period.

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

Figure C.2 SAIFI, quarterly results by Distributor



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

Overall, for NSW:

- the 5-year average is 0.94 interruptions per NSW customer, and
- there is a slight downward SAIFI trend over the graphed data period.

C.3 Individual feeder performance reports

Where one or more of the feeders of a Distributor exceed the relevant individual feeder standards,[b] that Distributor must investigate the causes of the feeder exceeding the standard and take action to improve performance as appropriate.

Table C.4 shows the number of feeders that exceeded the maximum standards in 2021-22. This data is provided for information only, as exceeding the individual feeder standard is not a breach of licence conditions but is a trigger for a Distributor to investigate and undertake remedial action under the licence. Auditors assessed the investigations and remedial actions that are being undertaken by the network operators.

Table C.4 Feeders not meeting performance standards by category in 2021–22

Feeder type	Ausgrid	Endeavour Energy	Essential Energy	Total
CBD	4 of 80 (5%)	N/A	N/A	4 of 80 (5%)
Urban	58 of 1,891 (3%)	16 of 1,093 (1%)	9 of 280 (3%)	83 of 3,264 (3%)
Short-rural	6 of 410 (1%)	16 of 452 (4%)	37 of 942 (4%)	59 of 1,804 (3%)
Long-rural	3 of 5 (60%)	1 of 1 (100%)	28 of 244 (11%)	32 of 250 (13%)
Total	71 of 2,386 (3%)	33 of 1,546 (2%)	74 of 1,466 (5%)	178 of 5,398 (3%)

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

Source: Q1 to Q4 2021–22 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.

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

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

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

Table C.5 shows the customer claims paid and claims denied by the Distributors for 2021–22. The Distributors paid 49% of claims made in 2021–22.

Table C.5 Summary of customer claims paid and denied for 2021–22

Distributor	Claims paid (year)	Claims denied (year)	Total claims
Ausgrid	240	223	463
Essential Energy	7	10	17
Endeavour Energy	9	31	40
Total	256	264	520

Source: 2021–22 Q4 reliability reports for Ausgrid, Endeavour Energy and Essential Energy.

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