IPART Independent Pricing and Regulatory Tribunal | NSW

Annual Compliance Report

Energy network operator compliance during 2020–21

October 2021

Energy »

Tribunal Members

The Tribunal members for this report are:

Ms Carmel Donnelly, Chair
Ms Deborah Cope
Ms Sandra Gamble

Enquiries regarding this document should be directed to a staff member:

Darren Holder	(02) 9290 8441
Peter Cole	(02) 9019 1934

The Independent Pricing and Regulatory Tribunal (IPART)

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

1 Executive summary

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 2020–21.[b] Overall, we found that the energy networks performed well against their licence conditions in 2020–21.

However, 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 2020–21, 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 Electricity network operators' compliance during 2020–21

In summary, licensed electricity network operators:

- were generally compliant with their critical infrastructure licence obligations, although TransGrid and Endeavour Energy each had one non-compliance. In both cases, the non-compliance was non-material and rectified by the end of the reporting period
- performed well against reliability and performance licence conditions, with only a small number of non-compliances
- were generally compliant with all other reporting and auditing requirements
- were generally compliant with their obligations related to the NSW Code of Practice for Authorised Network Operators (Code of Practice) for environmental impact statements. Only one minor breach was reported by Endeavour Energy who rectified the breach
- reported non-compliances against the requirements of the NSW Public Lighting Code (Public Lighting Code). Some non-compliances were exacerbated by circumstances (e.g. bush fires, storms and floods, constrained resourcing under COVID-19 operating arrangements and a 'live work pause'[c]).

Audits of Ausgrid's public and worker safety risk management controls, and management of risk working on or near energised assets, identified a number of non-material non-compliances. We have directed Ausgrid to modify its safety management system to rectify these non-compliances. We have also directed a further audit for 2021–22.

[a] Refer to Appendix A 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.
[c] Following a fatality in 2019, which occurred while performing work on an energised or 'live' asset, Ausgrid paused all live work on its network for an extended period. This has contributed to a significant backlog of public lighting work.

In 2020–21, all 6 natural gas reticulators and 3 liquid petroleum gas distributors operators reported that they were compliant with their authorisation or licence conditions, except for one gas network operator that was non-compliant with a reporting obligation. 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.

We also found that network operators with electricity network assets in NSW (licensed, unlicensed, and interstate)[d] 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.

Our strategic objective is to establish and maintain a strong compliance culture across the industries we regulate, using our compliance monitoring and enforcement powers as appropriate.

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, we identified priority areas for improving electricity network operators' compliance with safety management requirements based on the risk of harm that could arise.

Overall, IPART considers there has been a general improvement in compliance by electricity network operators since 2015 (when we received our compliance monitoring function).[e] 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.

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 LPG 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.

IPART does not regulate the safety or reliability of the gas reticulation or gas distribution networks. We are not the economic regulator for the energy industry, and we have no role in determining network charges.

[d] Refer to Table 4.1 details of all network operators with assets in NSW.

[e] For example, during a recent audit of bush fire risk management of the 3 distribution network operators, the auditors identified only a small number of non-material non-compliances.

Box 1.2 IPART's role

We do not regulate:

- electricity generators
- electricity generators' connection assets
- gas transmission pipelines or processing or bulk storage facilities for gas, or
- electricity or gas retailers.

1.1 Licensed electricity network operators' performance against licence conditions

The electricity network operators' licences include conditions related to some or all of the following areas:

- critical infrastructure
- reliability and performance standards
- the Public Lighting Code
- the Code of Practice, related to environmental impact statements
- compliance reporting and auditing.

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 licence conditions is detailed in the following chapters.[f]

1.1.1 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.

[f] The code of practice related to environmental impact assessments is discussed in section 2.4 and compliance reporting and auditing is discussed throughout the report.

1.1.2 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.

1.1.3 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 reports by the due date specified in the Public Lighting Code and IPART's *Electricity networks reporting manual - NSW Public Lighting Code compliance reporting.*

All Service Providers reported non-compliances against the Public Lighting Code's service standards, which include target timeframes for repairing faults affecting public lighting assets. We acknowledge some service providers faced significant challenges in complying with the Public Lighting Code during the reporting period. Compliance with the Public Lighting Code became a licence condition in July 2019. We expected that Service Providers would need to work towards compliance in some areas. However, we are concerned by the level of ongoing non-compliance with service requirements by some Service Providers.

We will consider each of the Service Provider's non-compliances against the Public Lighting Code, along with their response to their non-compliances and decide if any action is appropriate in response to the ongoing non-compliances.

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.

1.2 Electricity network operators' performance against safety management requirements

We required independent audits of Ausgrid, Endeavour Energy and Essential Energy's compliance with the safety management requirements of the ESSNM Regulation in 2020–21. These audits focused on the bush fire risk management component of their safety management systems.

We assessed the electricity network operators' compliance with safety incident reporting requirements using information we gathered and reports from the network operator.

For AusNet Services and Powercor (Victoria), Energy Queensland, and Evoenergy (ACT) who have network assets in NSW, we reviewed safety managements systems 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.

1.2.1 Network operators' bush fire risk mitigation systems

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 4.3.1 for details of the bush fire risk management audits.

The non-compliances identified by the auditors are summarised in Table 4-2. The network operators' proposed rectification actions respond directly to the non-compliances identified by the auditors. The proposed rectification timeframes appear reasonable, as the most critical actions are to be rectified ahead of the upcoming bush fire season.

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. However, 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 Summary of licensed electricity network operators' compliance

TransGrid's compliance during 2020–21

Critical Infrastructure
TransGrid reported that it was non-compliant with licence condition 7.1(a). This was due to contractors based offshore having access to TransGrid's 'Corporate Data Network' (CDN) and therefore to specified data and information, in breach of condition 7.1(a). There was no access to TransGrid's operational network or controlled CDN drives, and no impact on electricity consumers or other electricity networks. The non-compliance was rectified by the end of the reporting period and this was verified by independent audit.

Reliability
TransGrid did not report any non-compliances against its transmission reliability licence conditions.

Incident reporting
TransGrid did not report any incidents outside required reporting timeframes.

Environmental impact assessments
TransGrid did not report any non-compliances with the Code of Practice for conducting environmental assessments.

TransGrid's compliance during 2020–21

Safety and Bush fire risk management
TransGrid reported that almost all asset and vegetation management tasks were completed prior to the bush fire season. We did not direct an audit of TransGrid's bush fire risk management.

An audit of TransGrid's implementation of public and worker risk management controls did not identify any non-compliances.

Ausgrid's compliance during 2020–21

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

Public lighting
Ausgrid reported that they were non-compliant with the requirement to repair faults with public lighting assets within certain timeframes. For example, the Public Lighting Code requires that Specific Faults[g] must be repaired within 20 business days on average. Ausgrid's average repair time for Specific Faults was 70 days. Ausgrid's repair times for General Faults[h] was much lower, but not fully compliant with the requirements of the Public Lighting Code. Ausgrid was also non-compliant with the requirement to provide Public Lighting Services requested by customers within 90 days.

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

Incident reporting
Ausgrid reported 8 incidents 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 8 new low voltage services were connected, and 2 existing low voltage services were disconnected, from outside its distribution district.

Environmental impact assessments
Ausgrid did not report any non-compliances with the Code of Practice for conducting environmental assessments.

[g] Specific Faults refers to faults related to repairs to underground faults or requiring a site-specific Road Occupancy Licence.

[h] General Faults refers to all Faults that are not Specific Faults.

Ausgrid's compliance during 2020–21

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 2 non-compliances (non-material), but also noted "the safety management system is achieving the primary objective of safety management systems with respect to bushfire safety".

An audit of Ausgrid's implementation of public and worker risk management controls identified 8 non-compliances (non-material). An audit of the management of risks of working on or near energised assets identified 2 non-compliances (non-material).

Endeavour Energy's compliance during 2020–21

Critical Infrastructure

Endeavour Energy reported that it was non-compliant with licence condition 9.1.(b). This was because an officer who did not have an appropriate national security clearance approved remote access for a third party to undertake maintenance of the distribution system. 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 it was non-compliant with the requirement to repair faults with public lighting assets within certain timeframes. For example, the Public Lighting Code requires that Specific Faults must be repaired within 20 business days on average. Endeavour Energy's average repair time for Specific Faults was approximately 39 days. Endeavour Energy's average repair times for General Faults was approximately 7 days, which was less than the average repair time required by the Public Lighting Code. However, Endeavour Energy was not fully compliant with all requirements of the Public Lighting Code related to General Faults. Endeavour Energy was also non-compliant with public lighting reporting requirements.

Reliability

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

Incident reporting

Endeavour Energy self-reported that 10 incidents were reported 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 did not report and extensions or disconnections outside of its distribution district.

Environmental impact assessments

Endeavour Energy reported one non-compliance with the Code of Practice for conducting environmental assessments. Endeavour Energy reported that multiple environmental assessments prepared by an accredited service provider (ASP) did not identify impacts to trees and vegetation for the proposed works.

Endeavour Energy's compliance during 2020–21

Safety and bush fire risk management

Endeavour Energy reported that it had only 7 outstanding vegetation management tasks prior to the start of bush fire season. There were a large number of fire damaged trees (from 2019-20 bush fires) which could potentially impact Endeavour Energy's network, but most of these trees had been removed prior to the 2020-21 bush fire season. A bush fire risk management auditor noted 4 non-compliances (non-material), but also noted "the safety management system is achieving the primary objective of safety management systems with respect to bushfire safety".

There were no other audits of Endeavour Energy's safety management system during 2020–21.

Essential Energy's compliance during 2020–21

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 it was non-compliant with the requirement to repair faults with public lighting assets within certain timeframes. For example, the Public Lighting Code requires that Specific Faults must be repaired within 20 business days on average. Essential Energy's average repair time for Specific Faults was 36 days. Endeavour Energy's repair times for General Faults was much lower, but not fully compliant with the requirements of the Public Lighting Code. Essential Energy was not fully compliant with the requirement to provide Public Lighting Services requested by customers within 90 days and was also non-compliant with some reporting requirements.

Reliability

Essential Energy reported it was compliant with the overall reliability standards and the customer service standards. Essential Energy had 2 non-compliances (non-material) with meeting the licence timeframes for the operational and capital actions it identified to improve feeder performance where the feeder exceeded the feeder standards. An independent audit did not identify any further non-compliances against the reliability and performance licence conditions.

Incident reporting

Essential Energy self-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 did not report any 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.

Essential Energy's compliance during 2020–21

Safety and bush fire risk management
Essential Energy reported that 15.64% of identified asset tasks were outstanding but noted that tasks may be outstanding due to issues such as wet weather and access constraints. Only 0.54% of the outstanding tasks were in higher risk areas (as defined by Essential Energy). Essential Energy also reported that only 1.59% of its identified vegetation tasks were outstanding. A bush fire risk management auditor noted 2 non-compliances (non-material), but also noted "Essential Energy has clearly demonstrated that it recognises bushfires as one of its key business risks. Significant effort is focussed on mitigating bushfire risks".

There were no other audits of Essential Energy's safety management system during 2020–21.

1.4 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. That committee is currently comprised of Sandra Gamble (Chair), Deborah Cope and Naveena Rajaretnam. The Committee meets regularly, exercises statutory decision-making powers as appropriate, and provides strategic direction to IPART officers in relation to energy network regulation.

1.5 Report structure

The remainder of this report discusses the compliance performance of the network operators during 2020–21 in more detail, as set out below:

- Chapter 2 discusses the electricity network operators' compliance with their licence conditions.
- Chapter 3 discusses the gas network operators' compliance with their authorisation or licence conditions.
- Chapter 4 discusses the electricity network operators' compliance with the ESSNM Regulation and other legislated obligations.
- Chapter 5 discusses our approach and activities in regulating energy networks' compliance.
- Appendix A discusses the legal frameworks applicable to electricity and gas networks operating within NSW.
- Appendix B provides details of the network operators covered by this report, the information sources we have drawn on and how we assess their regulatory compliance.
- Appendix C provides a summary of electricity distribution network operators' reliability and performance in 2020–21.

2 Licensed electricity network operators' compliance with their licences

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, public lighting, compliance reporting and auditing, and a requirement to follow a framework for undertaking environmental impact assessments.

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.

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 these 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, and network and security operations
- have data security measures on load data and privacy of personal information, and
- comply with reporting and auditing requirements.

Ausgrid and Essential Energy were compliant with all of their critical infrastructure licence obligations. TransGrid 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 did not comply with all critical infrastructure licence conditions

TransGrid did not comply with licence condition 7.1(a) which requires the licence holder to ensure that:

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

TransGrid reported that it was non-compliant with licence condition 7.1(a) because contractors based offshore were allowed access to TransGrid's Corporate Data Network (CDN) and, as a result, were inadvertently allowed access to data and information as defined under condition 7.1(a).

Access to contractors was granted by TransGrid to enable these vendors to provide approved services. Due to the construct of the access and the structure of TransGrid's CDN, additional drives normally accessible only to TransGrid employees were inadvertently made accessible to each account.

This did not permit access to TransGrid's operational network or to otherwise access controlled CDN drives. The non-compliance did not impact electricity consumers or other electricity networks.

Upon becoming aware of the breach, TransGrid terminated contractor access to data and information as defined under condition 7.1(a). TransGrid commenced an immediate investigation into the incident to determine the extent of the non-compliance and the potential harm caused. TransGrid also implemented additional preventive controls and engaged external security expertise to further investigate the matter and to advise on best practice controls to better manage data and information as defined under condition 7.1(a).

The independent audit of TransGrid's critical infrastructure licence conditions assessed this non-compliance as non-material and noted that "…TransGrid's investigative capability only allows access for the review of account activity back 6 months". The auditor also noted:

> … TransGrid has advised that the 6 month account activity logging restriction was due to a change in the Security Information and Event Management (SIEM) system vendor…The intent for TransGrid is to implement a 13 month log retention period within the new SIEM.

The auditor provided 6 recommendations in relation to the non-compliance. We will consider TransGrid's responses to the non-compliance and the auditor's recommendations and decide if any further action is appropriate. If any further action is taken, this will be reported in next year's report to the Minister.

No further non-compliance was identified during the audit.

Ausgrid did not report non-compliances with critical infrastructure licence conditions

Ausgrid did not report any non-compliances against its critical infrastructure licence conditions. The independent audit of Ausgrid's critical infrastructure licence conditions did not identify any non-compliances.

Endeavour Energy did not comply with all critical infrastructure licence conditions

Endeavour Energy did not comply with licence condition 9.1(b) which requires that:

> 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:
>
> (b) 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.

Endeavour Energy reported that:

- "The senior officer for network operations did not give approval for remote access for third party or non-licence holder employees" because he (the General Manager Operations) was on leave. "Approvals [to undertake maintenance of the distribution system] were signed by the Acting General Manager Operations" who did not have a national security clearance of not less than Negative Vetting 1 (NV1). To be considered a 'senior officer'[i] NV1 security clearance is required. (Please note that the Acting General Manager Operations had had applied for NV1 security clearance.)
- "There have not been any additional opportunities presented within the reporting period where another staff member with NV1 approval has required to sign off on behalf of the senior officer for network operations. Endeavour Energy has an approved list of NV1 approved staff who can authorise third party of non-licence holder employees should this be required."

Endeavour Energy reported that it was compliant as at 30 June 2021. The independent audit of Endeavour Energy's critical infrastructure licence conditions did not identify any further non-compliances.

Essential Energy complied with its critical infrastructure licence conditions through 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.

[i] Refer to condition 9.2(b) of Endeavour Energy's operating licence.

Essential Energy reported no non-compliances with its critical infrastructure licence conditions for the 2020–21 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.

The Energy Networks Regulation Committee approved a number of minor variations to the timing of actions detailed in the Approved Plan during 2020–21.

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 2020–21 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.

All distribution network operators 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.

Essential Energy did not comply with individual feeder performance standards

Essential Energy reported non-compliances with licence conditions 5.2(c) and 5.2(d) relating to:

- Individual feeder performance - the operational action required to improve the performance of one feeder had not been completed by the date required in the licence conditions.
- Individual feeder performance - the project plan for capital expenditure action required to improve performance of 8 feeders reached the milestone after the date required in the licence conditions.

Essential Energy reported that:

  - the task to improve the performance of the feeder "has been scheduled to be completed 4 previous times, but access issues are the main cause of late completion"
  - in the case of the capital action, the cause of the late completion of this milestone was "lack of visibility of poor performing feeder tasks and capex obligations requirements were not well understood by the planning team"
  - Essential Energy has undertaken actions to ensure compliance and reported it now "tracks capex milestone due dates for increased visibility" and that it has increased staff understanding of the obligations by providing information sessions and documents.

Distribution network operators were compliant with overall reliability standards

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.[j] 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.[k] 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.

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

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

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[l]
- determine the claim for payment and notifying the customer within one month of receipt of the claim,[m] 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.[n]

Ausgrid, Endeavour Energy and Essential Energy were all compliant with the customer service standards licence obligations. However, IPART notes the low number of claims paid by some network operators, and we will continue to carefully monitor compliance with this licence obligation.

Distribution network operators were not fully compliant with incident reporting

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. Refer to section 4.4.2 for further details.

2.3 NSW Public Lighting Code

Public lighting is an important contributor to a safe, secure and attractive visual environment for pedestrians and vehicular traffic during times of inadequate natural light.

The Public Lighting Code, which was published by the Department of Planning, Industry and Environment (DPIE), supports the reliable and efficient provision of public lighting services. Ausgrid, Endeavour Energy and Essential Energy (Service Providers) have been required to comply with the Public Lighting Code under their licences since 1 July 2019. The Service Providers own and maintain a large majority of NSW public lighting assets, with local councils and Transport for NSW being their primary customers.

[l] Licence condition 6.1 and 6.2.
[m] Licence condition 6.3.
[n] Licence condition 6.4.

The Public Lighting Code includes:

- service standards to be met by Service Providers, including requirements to repair faults with public lighting assets within certain timeframes
- requirements for the provision of public lighting services[o] by Service Providers
- a mechanism that allows Services Providers and customers to agree to the installation of non-standard luminaires
- a requirement for Service Providers to have a management plan on the operation, maintenance, refurbishment, replacement, repair and disposal of public lighting assets.

Under clause 15(b) of the Public Lighting Code, DPIE was required to complete a review of the Public Lighting Code by 31 December 2020. Following the review, DPIE published the amended the Public Lighting Code in March 2021. The amended Public Lighting Code took effect on 1 July 2021. Therefore, Service Providers were required to report against the April 2020 version of the Public Lighting Code throughout the entire 2020–21 reporting period.

2.3.1 Compliance with the Public Lighting Code

Service Providers' compliance with the Public Lighting Code is detailed in Table 2-1 and Table 2-2, and their reported non-compliances detailed in section 2.3.2.

[o] Clause 17 of the 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.'

Table 2-1 Specific Faults and Specific (Priority) Fault repairs

Statistic	Ausgrid	Endeavour Energy	Essential Energy
Specific Faults *are related to repairs to underground faults or requiring a site-specific Road Occupancy Licence.*[a]			
Specific Faults must be repaired within ***20 business days on average for each customer****.*			
Number of Specific Faults repaired	3,172	173	1,799
Number of customers for which Specific Faults were repaired within 20 business days on average	0 out of 32 (0.00%)	3 out of 16 (18.75%)	29 out of 79 (36.71%)
Average repair timeframe for all Specific Faults (in business days)	70.04	38.79	36.31
Specific (Priority) Faults *are Specific faults, that relate to lighting at pedestrian crossings or groups of three or more consecutive lights on 'Category V roads' (as defined in AS/NZS 1158).*			
Service Providers are required to ***take reasonable steps to repair Specific (Priority) Faults more quickly than the average repair target for Specific Faults (of 20 business days) for each Customer****.*			
Number of Specific (Priority) Faults repaired	901	39	0
Number of customers for which Specific (Priority) Faults were repaired more quickly than the average repair target for Specific Faults	3 out of 30 (10.00%)	8 out of 9 (88.89%)	NA
Average repair timeframe for all Specific (Priority) Faults (in business days)	73.05	5.77	NA

a Under clause 17 of the Public Lighting Code, Road Occupancy Licence is defined to mean 'a consent granted by a Roads Authority under section 138 of the *Roads Act 1993* (NSW).'

Table 2-2 General Faults and General (Priority) Fault repairs

Statistic	Ausgrid	Endeavour Energy	Essential Energy
General Faults *are all Faults that are not Specific Faults.*			
Target 1*: Faults must be repaired within* ***10 business days****.*			
Number of Faults repaired within 10 business days	15,636 out of 20,531 (76.16%)	15,339 out of 19,077 (80.41%)	5,419 out of 8,765 (61.83%)
Target 2*: Faults must be repaired within 8 business days on average for each customer.*			
Number of customers for which General Faults were repaired within 10 business days on average	11 out of 33 (33.33%)	15 out of 23 (65.22%)	34 out of 84 (40.48%)
Average repair timeframe for all General Faults (business days)	12.45	6.83	15.73
General (Priority) Faults *are General faults, that relate to lighting at pedestrian crossings or groups of three or more consecutive lights on 'Category V roads' (as defined in AS/NZS 1158).* *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****.*			
Number of General (Priority) Faults repaired	2,777	3,020	48
Number of customers for which General (Priority) Faults were repaired more quickly than the average repair target for General Faults	5 out of 33 (15.15%)	19 out of 20 (95.00%)	15 out of 24 (62.50%)
Average repair timeframe for all General (Priority) Faults (business days)	16.28	2.84	9.25

2.3.2 Service Provider non-compliances

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

All Service Providers reported non-compliances with the Service Standards (pertaining to the timeframes within which faults must be repaired). Further details are provided below.

We continued to focus on engagement, clarification and education to assist Service Providers with their understanding of their obligations, noting that:

- Mandatory compliance with the Public Lighting Code is a relatively new legal obligation.
- Service Providers were impacted by certain events that affected their compliance (including COVID-19, major storms and floods).
- In the case of Ausgrid, its 2019-20 live work pause and the resulting backlog of faults it created impacted compliance.

However, we are concerned by the level of ongoing non-compliance with service requirements by some Service Providers. The Energy Networks Regulation Committee will consider each of the Service Provider's non-compliances against the Code, along with the Service Providers response to their non-compliances and decide if any action is appropriate in response to these ongoing non-compliances. If any further action is taken, this will be reported in next year's report to the Minister.

Ausgrid

Ausgrid reported:

- non-compliance with the Service Standards (as outlined in the tables above)
- non-compliance with clause 9(b)[p] of the Public Lighting Code in relation to performing Public Lighting Services requested by customers (Ausgrid completed 77 of 150 installations requested by customers within 90 business days).

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

- In 2020-21, Ausgrid increased the number of contracting crews deployed to rectify faults and developed a contractual mechanism that enables access to additional crews to outsource 'overflow' defective work, including streetlights.
- Ausgrid continued to deliver its LED replacement program, which it expects will result in fewer public lighting faults across its network in the future.
- In 2021-22, Ausgrid will aim to trial 2,500 smart controllers for its streetlights on category V roads in in the City of Sydney, the City of Newcastle and Lake Macquarie LGAs, with a view to expanding the rollout across the network if the trial is successful.
- Ausgrid's average repair times for faulty streetlights will deteriorate as Ausgrid addresses its backlog of faults.[q]
- A high volume of Public Lighting Code non-compliances is likely to continue. However, an uplift of 20% in compliance levels is targeted in 2021-22 compared to 2020-21.

Endeavour Energy

Endeavour Energy reported:

- non-compliance with the Service Standards (as outlined in the tables above).
- non-compliance with the *Reporting Manual – Public Lighting Code*, as Endeavour Energy did not report in accordance with *NSW Public Lighting Code Reporting Template* (35 customer names were not provided in Endeavour Energy's 2020–21 quarter 2 report).
- non-compliance with clause 2 of Schedule 1 to the Public Lighting Code, as Endeavour Energy is currently not able to provide the relevant Roads Authority with a notification of certain Priority Faults (three or more lights out on a Category V road).

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[p] 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.

[q] Under the Public Lighting Code, repair times are not calculated until a light is repaired. As the backlog of faulty lights is addressed, repair times will be calculated for these overdue lights. This will adversely affect average repair times.

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

- Continued focus and reporting will be created to further improve performance across the network for both general and specific faults.
- A revised 2020-21 quarter 2 report that included customer names was resubmitted to IPART on 25 February 2021. In addition, Endeavour Energy met with IPART to discuss the issue and ensure that it had been resolved.
- Endeavour Energy has the ability to provide notification of Priority Faults to the relevant Roads Authority and is prepared to provide it on a quarterly basis.

Essential Energy

Essential Energy reported:

- non-compliance with the Service Standards (as outlined in the tables above)
- non-compliance with clause 8(b) and clause 8(c) of the Public Lighting Code in relation to not providing 2019-20 annual customer reports to its customers
- non-compliance with clause 9(b) of the Public Lighting Code in relation to performing Public Lighting Services requested by customers (Essential Energy completed 1 out of 8 installations requested by customers within 90 business days).

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

- Non-compliance with the Service Standards was due to:
  - quality issues with compact fluorescent technology
  - changes to work crew capabilities due to COVID-19 and the requirement to respond to major storm and flood events
  - pedestrian crossing defects (i.e. Priority Faults) being incorrectly recorded with wrong severity, causing a delay in repairs.
- 2019-20 customer reports under clause 8(b) and clause 8(c) of the Code were not provided due to an oversight by staff.

We note that Essential Energy has not yet provided a response to the non-compliance with clause 9(b) of the Code.[r] We will seek a response from Essential Energy on this matter.

[r] This is because although Essential Energy reported this non-compliance in the *NSW Public Lighting Code Reporting Template* (which forms part of the Public Lighting Code Annual Performance Report), Essential Energy did not report this non-compliance in *Schedule C: Non-compliances with Service Provider obligations*. As a result, Essential Energy did not provide reasons for the non-compliance, and a plan and timeframe for rectification.

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

- In relation to non-compliance with the Service Standards:
  - compact fluorescent technology on our network is now down to 21%, resulting in fewer faults overall on the network
  - external contractors are being utilised to rectify faults during bulk LED upgrades
  - local depots with large volumes of faults have reprioritised workloads to address these faults
  - after Essential Energy identified Priority Faults had been input incorrectly, the defects were rectified immediately.
- 2019-20 customer reports under clause 8(b) and clause 8(c) of the Code were completed and submitted to customers by 2 May 2021.

2.4 NSW Code of Practice for environmental impact assessments

TransGrid, Ausgrid and Endeavour Energy are required to comply with Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act). The Code of Practice, published by DPIE, provides a framework for undertaking environmental impact assessments under Part 5 of the EP&A Act.

The Code of Practice aims to:

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

2.4.1 Compliance with the Code of Practice

TransGrid and Ausgrid did not report any non-compliances with the Code of Practice.

Endeavour Energy reported one non-compliance with the outcomes required from the 'determination stage' of the environmental impact assessment required by section 2.5.1 of the Code of Practice. Endeavour Energy reported that multiple environmental assessments prepared by an Accredited Service Provider (ASP) did not identify impacts to trees and vegetation for the proposed works. A non-conformance was issued to the ASP and an arborist report was commissioned to identify potential impacts on trees within the designed area.

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 2-3.

Table 2-3 Activity outside network operators' distribution districts

Network operator	Activity outside distribution district
Ausgrid	Eight low voltage service connections and two low voltage service disconnections that are permitted under IPART's standing Instrument of Agreement and Authorisation.
Endeavour Energy	No extensions or disconnections.
Essential Energy	No extensions or disconnections.

Source: Ausgrid, Endeavour Energy, and Essential Energy annual distribution district reports 2020–21.

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.

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 4.4.2 for further details.

3 Gas network operators' compliance

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.[s] This authorisation/licence sets out their conditions of operation.

The distributor licence holders are:

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

The Minister approved Jemena Gas Networks (NSW) Ltd's (JGN) application for a gas distributor's licence on 8 June 2021. The licence authorises JGN to distribute a mixture of natural gas and hydrogen through an existing distribution system. JGN has no compliance obligation for this financial year for their gas distributor licence.

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, IPART does not regulate the safety or reliability of the gas reticulation or gas distribution networks.[t] We also note that gas network operators' licences do not include requirements for 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.

[s] Gas transmission pipelines are regulated under the *Pipelines Act (NSW) 1967*.

[t] The Department of Planning, Industry and Environment is the safety regulator of the gas industry.

Table 3-1 Overview of natural gas reticulators and operating statistics, 2020–21

Reticulator	Number of Customers			Kilometres of gas mains
	DPIs[a] supplied as at 30 June 2021	DPIs[a] taking less than 1 TJ	DPIs[a] taking more than 1 TJ	
Allgas Energy Pty Ltd	1,302	1,289	13	37
Australian Gas Networks (Albury) Ltd	30,128	30,051	77	785
Australian Gas Networks (NSW) Ltd	31,298	31,231	67	1,251[b]
Central Ranges Pipeline Pty Ltd	4057	4022	35	259
Evoenergy[c]	20,847	20,783	64	707
Jemena Gas Networks (NSW) Ltd.	1,493,664	1,490,401	3,263	25,744
Total	1,581,296	1,577,777	3,519	28,783

a Delivery Point Identifier.

b Excludes 64 km for the Tumut Valley pipeline.

c Formerly ActewAGL Distribution Ltd.

Source: 2020–21 annual compliance reports of the natural gas reticulators.

3.2 Gas network operators' compliance

3.2.1 Natural gas reticulators were generally compliant

The natural gas reticulators did not report any non-compliances in 2020–21.

We did not identify any non-compliances with the conditions of the reticulator authorisations, other than Allgas Energy Pty Ltd's being non-compliant with a reporting obligation. Allgas Energy's annual compliance report was due by 31 August 2021 but was not received by IPART until 1 September 2021.

3.2.2 LPG distributors were compliant

The LPG distributors reported no non-compliances in 2020–21, and we did not identify any non-compliances with the conditions of the distributor licences.

4 Electricity network operators' compliance with safety and other legislated obligations

Since 2015, IPART has monitored licensed and unlicensed electricity network operators' compliance with legislated obligations in relation to safety management systems (including bush fire risk management), incident reporting,[u] and employment guarantees. This chapter summarises the network operators' compliance with these obligations for 2020–21.

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*[v] (AS 5577) and covers certain areas of safety risk.

Safety management system obligations apply to all licensed and unlicensed network operators with electricity assets in NSW.[w] Table 4-1 provides details of the network operators with assets in NSW.

Table 4-1 Electricity network operators with assets in NSW, 2020–21

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 (unlicensed distribution network operator)	Directlink (unlicensed transmission network operator)
Lord Howe Island Board (unlicensed distribution network operator)	Metro Trains Sydney (unlicensed distribution network operator)
Interstate electricity network operators with distribution network assets in NSW	
Evoenergy (ACT)	Ausnet Services (Victoria)
Powercor (Victoria)	Energy Queensland (Queensland)

[u] 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.

[v] Available for purchase a the SAI Global website

[w] 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 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.[x]

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.

[x] 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.

Based on these high-level assessments, no obvious safety issues or emerging trends were identified.

Interstate network operators

Four interstate network operators[y] 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, Evoenergy (ACT), AusNet (Vic) and Powercor (Vic) to provide annual bush fire preparedness reports by 31 October each year. 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.

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 2020 which detailed their preparedness for the 2020–21 bush fire season. The 4 interstate network operators also submitted a bush fire preparedness report for the 2020-21 bush fire season.

Licensed network operators

The Licensed Network Operators reported that they completed all of their targeted pre-summer bush fire inspections. These inspections identify asset and vegetation defects that could impact the network during the bush fire season. Network operators can then manage these asset and vegetation defects.

TransGrid reported only 2 outstanding assets tasks and 5 outstanding vegetation tasks (and noted that 4 of the 5 outstanding vegetation tasks were addressed after the reporting deadline). We therefore had no concerns about TransGrid's bush fire preparedness.

Ausgrid had no outstanding asset or vegetation management tasks. We therefore had no concerns about Ausgrid's bush fire preparedness.

[y] Refer to Table 4.1 for details of the interstate network operators with assets in NSW.

Endeavour Energy reported all required asset management tasks had been completed, and that it had only 7 outstanding vegetation management tasks. There were a large number of fire damaged trees (from 2019-20 bush fires) which could potentially impact Endeavour Energy's network. Most of these trees had been removed prior to the 2020-21 bush fire season and Endeavour Energy planned to remove the remaining trees by March 2021. As Endeavour Energy had a very low number of outstanding vegetation tasks and an adequate hazard tree remediation plan, we had no concerns about Endeavour Energy's bush fire preparedness.

Essential Energy reported that 15.64% of identified asset tasks were outstanding but noted that tasks may be outstanding due to issues such as wet weather and access constraints. Essential Energy also noted that outstanding tasks are appropriately monitored and risk assessed to determine the appropriate course of action. Only 0.54% of the outstanding tasks were in higher risk areas (as defined by Essential Energy). Essential Energy also reported that only 1.59% of its identified vegetation tasks were outstanding. We therefore had no significant concerns about Essential Energy's bush fire preparedness.

Ausgrid, Endeavour Energy and Essential Energy were subject to independent audits of their bush fire preparedness for the 2020–21 bush fire season to assess compliance with reporting requirements and to check traceability and justification for data reported. Refer to section 4.3.1 for further details of the audit findings and the network operators' bush fire preparedness.

Other Network Operators

We did not request a bush fire preparedness report from Directlink, Lord Howe Island Board and Metro Trains Sydney for the 2020–21 bush fire season because of the low-risk of bush fire ignition due to the:

- design of these networks, and
- limited environments in which they operate.

We received bush fire preparedness reports for the 2020–21 bush fire season from Sydney Trains, AusNet Services (Victoria), Powercor (Victoria), Evoenergy (ACT) and Energy Queensland.

Sydney Trains

In preparation for the 2020–21 bush fire season, Sydney Trains reported a low number of outstanding tasks with plans for completion within the compliance date. The report did not present any other significant concerns.

Sydney Trains was subjected to an independent audit to determine whether Sydney Trains has rectified outstanding bush fire risk management non-compliances in response to audit findings in 2019. Refer to section 4.3.1 for further details of the audit findings.

AusNet Services, Evoenergy and Powercor

AusNet Services and Evoenergy reported a low number of outstanding tasks which did not present any significant concerns.

Powercor reported no outstanding tasks and no other significant concerns.

Energy Queensland

Energy Queensland reported that all aerial consumers mains in bush fire prone areas in NSW have been inspected, and all identified vegetation intrusions have been cleared. An emergency asset defect was identified but had been remediated. As this is the first year that Energy Queensland has inspected private aerial consumers mains on bush fire prone land, we consider this a good result and have no significant concerns.

4.3 Audits of network operators

For 2020–21, we directed independent audits of distribution network operators to assess their compliance with the obligations of the ESSNM Regulation.

The audits of Ausgrid, Endeavour Energy and Essential Energy focused on the bush fire risk management aspects of their ENSMS and considered matters including:

- corrective and preventative actions in response to the 2019–20 NSW bush fires
- 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 October and December 2020.

We also directed Sydney Trains to undertake an independent audit to be performed in 2020–21. The audit was to determine whether Sydney Trains had amended and implemented its ENSMS to rectify:

- outstanding bush fire risk management non-compliances in response to audit findings in 2019, and
- rectify the planning and preparation non-compliances that were also identified in the 2019 audit.

We did not direct audits of any other network operators this year. We had previously directed the following audits which were completed in 2020–21:

- the extent to which public and worker safety (PAWS) risk management controls have been implemented by TransGrid, Ausgrid, Endeavour Energy and Essential Energy, 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 by Ausgrid.

As reported in the *Annual Compliance Report - Energy network operator compliance during 2019–20,* due to COVID-19 restrictions the TransGrid and Ausgrid PAWS audits and the Ausgrid Live Work audit were not conducted and completed during 2019–20. These audits were completed during 2020–21 and are reported in section 4.3.3 and section 4.3.4.

4.3.1 Bush fire risk management audits

The auditors identified strengths for all network operators

The auditors' findings were positive overall, and each identified strengths for each of the network operators as summarised below.

Ausgrid's auditor noted:

> Whilst non-compliances (non-material) were identified, the safety management system is achieving the primary objective of safety management systems with respect to bushfire safety.

The auditor also noted that: "The safety management system is considered appropriate" in relation to the nature, size and complexity of Ausgrid's network, and the safety management system "is being properly implemented".

Essential Energy's auditor noted:

> Essential Energy has clearly demonstrated that it recognises bushfires as one of its key business risks. Significant effort is focussed on mitigating bushfire risks. This is evident at all tiers of the business, with line-of-sight from policy and strategy, and down through decision making to activities on the ground, and through continual improvement.
>
> Commensurate with the scale of operations and inherent bushfire risk of its network area, we observed Essential Energy developing a leadership position within the industry in several bushfire prevention areas. There is an advancing level of maturity in relation to bushfire prevention strategy.

The auditor also noted that:

> We have observed a significant range of corrective and preventative actions underway that are aimed at preventing or mitigating the impact of bushfires. These are both the result of the ongoing continual improvement processes and in response to the severity of the 2019/20 Bushfires.

Endeavour Energy's auditor noted:

> Whilst non-compliances (non-material) were identified, the safety management system is achieving the primary objective of safety management systems with respect to bushfire safety.

The auditor also noted that "The safety management system is considered appropriate" in relation to the nature, size and complexity of Endeavour Energy's network, and the safety management system "is being properly implemented".

Sydney Train's auditor noted:

> …Sydney Trains has made substantial improvements to its Bushfire Risk Formal Safety Assessment (FSA) to firstly integrate the findings of the CSIRO/Data 61 electricity network bushfire risk analysis undertaken prior to the last audit, and secondly to respond to findings in the last audit about deficiencies in documentation and analysis of historical fire incidents, causes, and the likelihood of identified fire-cause types on its network.

The auditor also noted that:

> The remaining non-compliances (non-material) from the last audit have also been remedied.

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

The auditors found non-material non-compliances for Ausgrid, Endeavour Energy and Essential Energy. Non-compliances identified by the auditors are summarised in Table 4-2.

Table 4-2 Summary of bush fire management non-compliances

Network operator	Summary of non-compliances
Ausgrid *2 Non-material non-compliances*	• Ausgrid had not reviewed or updated its Bush fire Risk Management Strategy since before the 2019/20 NSW bush fires. Similarly, the Bush fire FSA has not been reviewed or updated since 2017. • Ausgrid has not provided sufficient information in the bush fire preparedness report to enable the reader to understand the wider context of the reported information.
Endeavour Energy *4 Non-material non-compliances*	• Endeavour Energy had not presented evidence to demonstrate how the outcomes of the 2019–20 NSW bush fires were utilised in reviewing the ENSMS. • Endeavour Energy had not provided evidence of a process that mandates a post incident review. • Endeavour Energy had not updated its Loss of Supply FSA post the 2019–20 NSW bush fires. • Endeavour Energy had not provided sufficient information in the bush fire preparedness report to enable the reader to understand the wider context of the reported information.
Essential Energy *2 Non-material non-compliances*	• Essential Energy had not completed its post incident review in relation to actions stemming from the review of the 2019–20 bush fire season. • The auditors identified deficiencies in Essential Energy's process to collate data for its Annual ENSMS Performance Report.

Distribution network operators are rectifying the non-compliances

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

4.3.2 Sydney Trains ENSMS audit

The auditor noted that Sydney Trains has addressed the non-compliances identified during the previous audit. The auditor also noted that:

> Sydney Trains has put considerable effort into developing its ENSMS further following the findings and recommendations from the previous audits. This has resulted in the demonstration of a greater level of maturity and compliance with the requirements of ESSNM 2014 Regulation, AS 5577 and ISO 31000 and all non-compliances being rectified since the last audit.

4.3.3 TransGrid's – PAWS audit

The auditor found that TransGrid has implemented the controls identified in its public and worker safety formal safety assessments. TransGrid has also identified, assessed and treated any electricity asset specific risks that could affect public and worker safety.

The auditor noted that TransGrid has public electrical safety awareness campaigns in place to target people that are at risk of harm from hazards such as fallen wires and work activities near overhead and underground electricity assets. It also assesses the effectiveness of its safety awareness campaigns.

The auditor observed that, in its risk analysis and mitigation in relation to potential accidents on its network, TransGrid has considered relevant industry data and evidence including recent worker fatalities on other networks. It also has programs and systems in place to ensure that its workers are fit for work and comply with safety rules and procedures.

The auditor recommended that TransGrid consider 4 opportunities for improvement (OFI) to further enhance its management systems.

4.3.4 Ausgrid's Live Work and PAWS audits

Live Work audit

The auditor identified strengths in Ausgrid's live works planning and preparation processes. The auditor's overall assessment was that:

> …Ausgrid's planning processes for live work on or near the network, including its low voltage work task lists, have generally been developed in accordance with AS5577 and controls and treatments are properly identified, evaluated and implemented in accordance with AS5577.

The auditor reported that:

> Holistically, it is our opinion Ausgrid's planning processes for the Live Works Review Project have been well-considered, pragmatic and organised, and redeployment of activities has occurred in a staged and logical manner to date. The business has made a commendable effort in reviewing its practices through the Live Works Review Project.

We note however, that the auditor only tested 'Stage 1' or simple live work tasks.[z] This is because at the time of the audit, Ausgrid had not yet resumed undertaking more complex live work tasks following the 'live work pause'.[aa]

The auditor found 2 non-material non-compliances:

- Ausgrid's risk analysis for live work did not adequately consider accredited service providers (ASPs), who also perform live work on or near Ausgrid's network.
- There were deficiencies with Ausgrid's organisational approach to evaluating SFAIRP.[bb]

Ausgrid submitted a Rectification Plan to address the audit findings.

The auditor also identified 15 OFIs which were categorised into hazard identification, risk analysis, evaluating control measures and treatments, and incorporating control within procedures. Ausgrid advised that these will be considered within business and system review cycles as part of continuous improvement.

PAWS audit

The auditor reported that:

> Ausgrid has demonstrated substantial effort in the implementation of its ENSMS to ensure the safety of the public and its workers. The structure of the ENSMS Manual and the mapping provided in the annexures make it easy to understand and trace many of the elements of the ENSMS and relate to AS 5577.
>
> The ENSMS is integrated with the Asset Management System and WHS System (BeSafe) resulting in functional processes inherently embedded within the business. This creates a stronger platform of system fundamentals than the ENSMS's of peers with standalone systems."

The auditor also found 8 non-material non-compliances, which were categorised under 2 themes:

- Defining and embedding ENSMS ownership, management and performance requirements. Under this theme the auditor noted that actions relating to 4 of the 10 non-compliances identified in the previous ENSMS audit were outstanding.
- Culturally developing and embedding an external focus.

Ausgrid submitted a Rectification Plan to address the audit findings.

The auditor also identified 33 OFIs which were categorised into the 2 risk themes above and 2 further themes on procedural gaps in incident management and abnormal or emergency situations, and leveraging technology to support the ENSMS in reducing safety risks.

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[z] Simple live tasks include application of temporary insulation, connection and disconnection of service conductors, streetlight activities, extra low voltage work, and other tasks such as testing.

[aa] Following a fatality in 2019, which occurred while performing work on an energised or 'live' asset, Ausgrid paused all live work on its network for an extended period.

[bb] So far as is reasonably practicable.

Ausgrid advised that these will be considered within business and system review cycles.

We directed Ausgrid to modify its ENSMS

After consideration of the audit findings from the audits, we directed Ausgrid to modify it ENSMS to rectify the Live Work non-compliances, and a non-compliance from the PAWS audit related to public safety. This was because it was considered rectifying these non-compliances would reduce the risk of further serious safety issues.

We have also directed an audit for 2021–22, to ensure that Ausgrid have rectified all non-compliances in accordance with our direction and their rectification plan.

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".[cc]

4.4.1 Significant safety incidents

In 2020–21, the electricity network operators reported no incidents to have occurred on the electricity networks that resulted in loss of life, permanent disability, permanent life changing injuries, or life threatening injuries.[dd]

4.4.2 Compliance with incident reporting obligations

Network operators mostly reported electricity works incidents[ee] 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, as detailed in Table 4-3, but were generally compliant with our other reporting requirements.

[cc] Dictionary to the ES Act.

[dd] Excluding incidents involving motor vehicles.

[ee] 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.

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, 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 4-3 Incident reports reported outside reporting timeframes, 2020–21

Network operator	Number of reports outside reporting timeframes[a]
TransGrid	0
Ausgrid	8
Endeavour Energy	10
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
- misunderstanding of the reporting timeframe requirements
- incorrect classification of incident
- process and human errors.

4.5 Employment guarantee obligations

On 1 July 2015, employment guarantee obligations under Schedule 4 to the *Electricity Network Assets (Authorised Transactions) Act 2015* (Authorised Transactions Act) commenced for a period of 5 years, applying to TransGrid, Ausgrid and Endeavour Energy. Except as set out below in respect of Endeavour Energy, these obligations ceased on 30 June 2020.

Endeavour Energy reported in 2019–20 that it had employed 2,294 full time equivalent staff in the final quarter of that year. The Authorised Transactions Act required it to employ a minimum of 2,100 staff,[ff] and states that:

> If the number of full time equivalent employees of a network operator for the final relevant period of a financial year within the employment guarantee period is less than or equal to 110% of the appropriate staffing level for the network operator, a sufficient number of apprentices must be employed during the following financial year (as new employees of the network operator) to achieve the guaranteed apprenticeship intake for the relevant electricity network SOC.[gg]

As Endeavour Energy employed less than 110% of the appropriate staffing level in 2019–20, it was required to employ 10 new apprentices[hh] in 2020–21.

Endeavour Energy confirmed that it employed 12 new apprentices, who commenced their 4-year apprenticeship on 1 March 2021. The final remaining network requirement relating to employment guarantees was therefore met. It will no longer be necessary to report to the Minister on compliance with employment guarantee obligations.

[ff] Schedule 4 to the Authorised Transactions Act, Clause 3 (2)(b).
[gg] Schedule 4 to the Authorised Transactions Act, Clause 16 (1).
[hh] Schedule 4 to the Authorised Transactions Act, Clause 16 (2)(b).

5 Our compliance approach and activities

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.[ii]

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.

The materiality of any non-compliance is considered 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 2020–21, we:

- updated our *Electricity networks reporting manual - Incident reporting* to amend reporting timeframes and requirements for certain incidents to assist network operators to report accurate information.
- updated our *Electricity networks reporting manual - Safety management system performance measurement* to include an additional reporting requirement for network operators to provide more context to annual performance reports. We have also included a requirement for Sydney Trains to provide an annual bush fire preparedness report.
- updated our *Distribution reliability and performance reporting - Electricity networks reporting manual* to include a request for licence holders to commence publishing certain information about distributed energy resources on a voluntary basis.
- engaged with the distribution network operators to ensure that they understood our requirements for reporting of incidents and public lighting compliance.
- directed audits of Ausgrid, Essential Energy and Endeavour Energy for bush fire risk management in preparation for the 2020–21 bush fire season.

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

- directed an audit of Sydney Trains to determine whether Sydney Trains had amended and implemented its ENSMS to rectify outstanding non-compliances related to bush fire risk management, and planning and preparation of its ENSMS.

5.1 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 DPIE, SafeWork NSW and the Cyber and Infrastructure Security Centre within the Commonwealth Department of Home Affairs.

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

5.1.1 Public Lighting Code

We worked with Service Providers to ensure that they understood the requirements of the Public Lighting Code. We also provided input to DPIE for their review of the Public Lighting Code. (The revised Public Lighting Code applies from 1 July 2021 and is therefore not discussed in detail in this report.)

5.1.2 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 2020–21, 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

A The legal framework for energy networks

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 LPG 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 and Environment (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 their licence conditions and relevant obligation.

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.

In 2015, we also became responsible for regulating the reliability and safety of NSW electricity network assets. In this role, we monitor compliance with the requirements of the ESSNM Regulation by both licensed and unlicensed network operators with electricity network assets within NSW. 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 consider it prudent to keep the Minister informed of the work we undertake and network compliance levels.

In addition, we monitor both licensed and unlicensed 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.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 the 4 licensed network operators listed above as well as unlicensed electricity network operators: Directlink, Sydney Trains, Metro Trains Sydney 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.

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 amend 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 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.

- 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 licence 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 three 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 Transmission Reliability and Performance Standard 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

Origin LPG and Elgas Ltd hold three distributor licences that allow the supply of liquid petroleum gas (LPG), while 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.

Jemena Gas Networks (NSW) Ltd's gas distributor's licence to distribute a mixture of natural gas and hydrogen was approved by the Minister on 8 June 2021.

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

B Who we regulate and how we assess their compliance

Section B.1 provides details of the network operators that we regulate.

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	1.8 million	Sydney, the Central Coast and the Hunter Valley.
Endeavour Energy	Distribution	2.5 million	Sydney's Greater West, the Blue Mountains, the Southern Highlands, Illawarra and the South Coast of NSW.
Essential Energy	Distribution	More than 865,000	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 Unlicensed 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

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 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 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.

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, although they are not required by law to do so.

Further, electricity network operators, including those that are unlicensed, 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.

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.

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

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 us 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 B.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* (Public Lighting Code Reporting Manual). 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 Fault Service Standards, Ausgrid, Endeavour Energy and Essential Energy are required to repair:

- Specific Faults[c] within 20 business days on average for each customer.
- General Faults[d] within 10 business days, and within 8 business days on average for each customer.

In addition, Service Providers are required to take reasonable steps to repair Priority Faults[e] more quickly than the average repair target for Specific Faults or General Faults, whichever is applicable for the fault type.

[c] Specific Faults refers to faults related to repairs to underground faults or requiring a site-specific Road Occupancy Licence.

[d] General Faults refers to all Faults that are not Specific Faults.

[e] 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).

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).[f] Based on the results of these audits, we can direct the network operators to amend 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.

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 three stages, and our reporting manual details the timeframes for each stage.

[f] 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.

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.

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.[g]

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.

[g] Refer to conditions of 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.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.

Table C.2 identifies network performance against the SAIDI average standards as reported by the Distributors for the 12-month period from 1 July 2020 to 30 June 2021. 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 2020–21 is for the 12-month period up to 30 June 2021.

Table C.2 Performance against the SAIDI average standards (minutes per customer) for 2020–21

Distributor	Feeder type	Required standard	Reported performance	Compliant with licence condition
Ausgrid	CBD Sydney	45	18.77	☑
	Urban	80	60.79	☑
	Short-rural	300	129.59	☑
	Long-rural	700	613.65	☑
Endeavour Energy	Urban	80	49.6	☑
	Short-rural	300	154.2	☑
	Long-rural	N/A	206.3	N/A
Essential Energy	Urban	125	69	☑
	Short-rural	300	210	☑
	Long-rural	700	452	☑

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.
Source: Q4 2020–21 quarterly reliability reports for Ausgrid, Endeavour Energy and Essential Energy.

Table C.3 identifies performance against the SAIFI average standards as reported by the Distributors for the 12-month period from 1 July 2020 to 30 June 2021.

Table C.3 Performance against the SAIFI average standards (number per customer) for 2020–21

Distributor	Feeder type	Required standard	Reported performance	Compliant with licence condition
Ausgrid	CBD Sydney	0.3	0.02	☑
	Urban	1.2	0.52	☑
	Short-rural	3.2	0.87	☑
	Long-rural	6.0	2.01	☑
Endeavour Energy	Urban	1.2	0.50	☑
	Short-rural	2.8	0.93	☑
	Long-rural	N/A	1.61	N/A
Essential Energy	Urban	1.8	0.86	☑
	Short-rural	3.0	1.78	☑
	Long-rural	4.5	2.68	☑

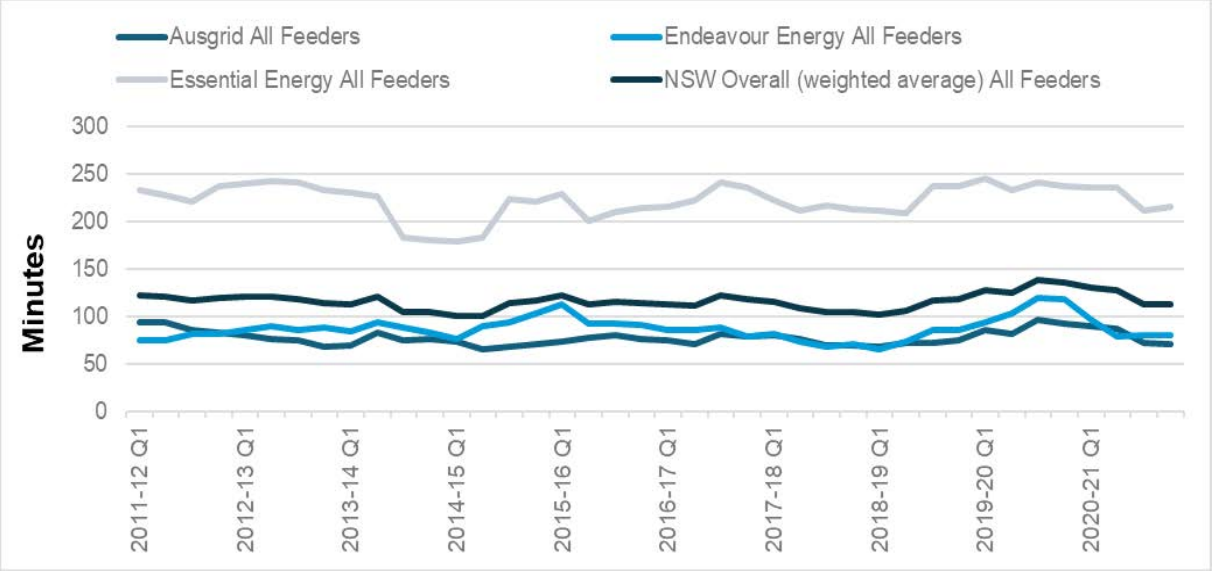
Note: A feeder type is performing better or equal to the standard if its reported performance is equal to, or below the standard value.
Source: Q4 2020–21 quarterly reliability reports for Ausgrid, Endeavour Energy, Essential Energy.

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



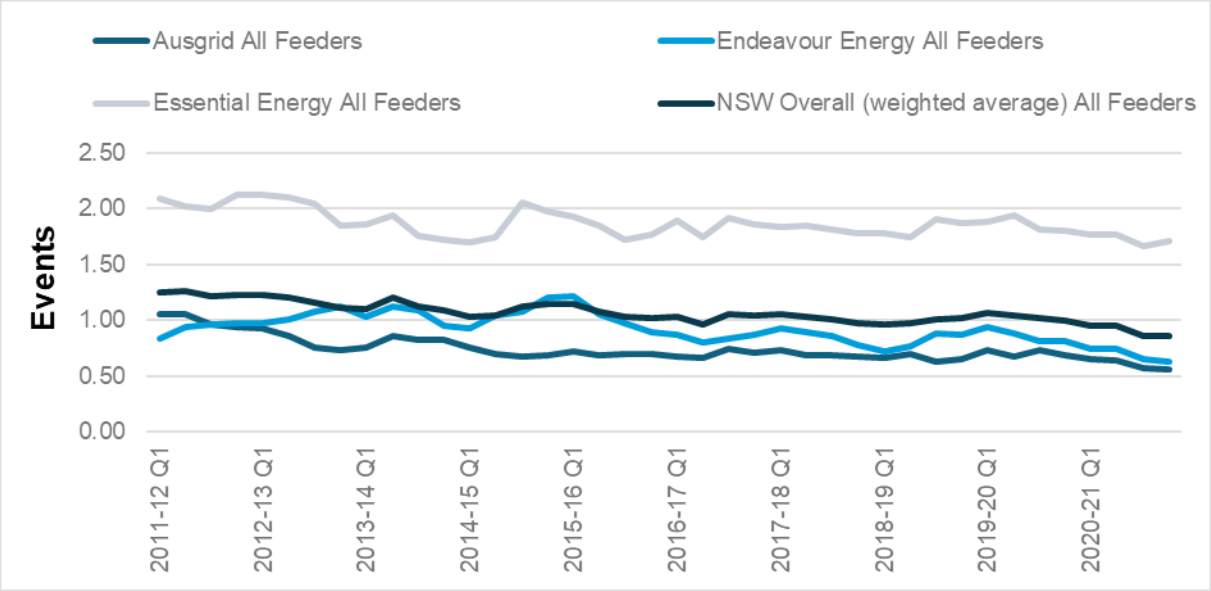
Note: The NSW weighted average is calculated using the customer numbers from each of the Distributors.
Source: Quarterly reliability reports for Ausgrid, Endeavour Energy, Essential Energy, and data provided to IPART by the then Department of Industry.

Overall, for NSW:

- the 5-year average interruption time is 117.6 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 0.98 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,[h] 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 2020–21. 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.

[h] 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.

Table C.4 Feeders not meeting performance standards by category in 2020–21

Feeder type	Ausgrid	Endeavour Energy	Essential Energy	Total
CBD	3 of 55 (5%)	N/A	N/A	3 of 55 (5%)
Urban	80 of 1,908 (4%)	14 of 1,090 (1%)	10 of 298 (3%)	104 of 3,296 (3%)
Short-rural	9 of 348 (3%)	10 of 432 (2%)	56 of 928 (6%)	75 of 1,708 (4%)
Long-rural	1 of 5 (20%)	0 of 1 (0%)	28 of 244 (11%)	29 of 250 (12%)
Total	93 of 2,316 (4%)	24 of 1,523 (2%)	94 of 1,470 (6%)	211 of 5,309 (4%)

Note: Data in brackets are percentages of underperforming feeders by type.
Source: Q1 to Q4 2020–21 Ausgrid, Endeavour Energy and Essential Energy reports.

C.4 Customer service standards

Customer service standards (interruption duration and frequency standards) are set out in Schedule 5 of the Distributors' licences. The interruption duration standard is the maximum allowable duration of an interruption to a customer's premises. The interruption frequency standard is the maximum number of interruptions in a financial year to a customer's premises. Different standard values are applicable depending on whether customers' premises are located 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 2020–21. The Distributors paid 57% of claims made in 2020–21.

Table C.5 Summary of customer claims paid and denied for 2020–21

Distributor	Claims paid (year)	Claims denied (year)	Total claims
Ausgrid	267	172	439
Essential Energy	13	18	31
Endeavour Energy	4	25	29
Total	284	215	499

Source: 2020–21 Q4 reliability reports for Ausgrid, Endeavour Energy and Essential Energy.

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