

Independent Pricing and Regulatory Tribunal
New South Wales

Review of safety management system performance measures

Electricity network operator performance reporting

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Invitation for submissions

IPART invites written comment on this document and encourages all interested parties to provide submissions addressing the matters discussed.

Submissions are due by 13 April 2018

We would prefer to receive them electronically via our online submission form <www.ipart.nsw.gov.au/Home/Consumer_Information/Lodge_a_submission>.

You can also send comments by mail to:

Energy network performance measures review

Independent Pricing and Regulatory Tribunal

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1 The purpose of this review

The Independent Pricing and Regulatory Tribunal of NSW (IPART) is reviewing the reporting requirements for electricity networks' safety management systems performance. The *Electricity Supply (Safety and Network Management) Regulation 2014* (ESSNM Regulation) requires all Electricity Network Operators (ENOs) to measure the performance of their safety management systems and report these performance measurements annually. In general, these reports seek to answer: 'How is the electricity network safety management system performing?'

This review intends to balance the usefulness of the information collected by the networks and reported to IPART and the public, against the costs to the network operators of collecting and reporting the information.

In this review we consider performance measures to be synonymous with performance indicators. For consistency with the ESSNM Regulation we refer to 'performance indicators' as 'performance measures' throughout this document.

This paper explains the context and purpose of the review, outlines our proposed approach, and discusses key issues on which we seek stakeholder comment.

1.1 Why we are conducting this review

The scope of this review is the Electricity network safety management systems reporting manual, and the Bushfire preparedness reporting manual.

The review affects all ENOs. The licences for Ausgrid, Endeavour Energy, Essential Energy and TransGrid require them to comply with IPART's reporting manuals. For non-licensed electricity network operators, the manuals guide how to measure and report safety management system performance as required by the ESSNM Regulation.

We first released a reporting manual in June 2016. This manual included requirements for both electricity network safety management system reporting and bushfire risk management reporting as well as some other obligations that we monitor. The manual had five minor revisions; the most recent version was released in October 2017. The reporting manual has now been separated into stand-alone documents covering each regulatory area to make the manuals easier to use.

The first performance reports produced by ENOs under IPART's reporting manual was for the period July 2016 to June 2017. After reviewing the reported information, we consider it is appropriate to review the performance measures used. We aim to ensure that the information we collect is useful and that we are not imposing unnecessary regulatory costs on the ENOs. Our intention is that the benefits derived from requiring licensed ENOs to report performance measures should outweigh the costs of collecting and reporting it.

We are also interested in stakeholders' views on the performance measures they would find useful, the benefits and costs associated with collecting and reporting them, and our approach to collection.

1.2 How we will approach the review

We consider it is important to identify clear outcomes and understand the justification for performance measures and performance reports. We propose that any performance measures should:

- ▼ align with the intended outcomes of a safety management system set by the *Electricity Supply (Safety and Network Management) Regulation 2014*
- ▼ provide greater benefits than the costs of collecting, reporting and monitoring, and
- ▼ not be available to us through other mechanisms.

We have developed a set of assessment criteria to guide decisions about which performance measures to apply. Using defined assessment criteria helps ensure that decisions are clear, consistent and transparent.

The proposed assessment criteria for including (or excluding) performance measures are:

1. **The performance measure must align with the desired regulatory outcomes.** The information collected must have a direct correlation to the outcomes of a safety management system.
2. **The benefits of having the information must outweigh the costs of collecting the information.** Our approach is to assess whether the absence of the information would impact on the ability to measure the performance of the ENO, or impact on benefits to IPART or the public. If not having the information does not have a negative impact, then the costs are likely to outweigh the benefits.
3. **The information should not be collected through other means.** If the ENO is required to provide information relating to the outcome under another regulatory framework, there is no need for IPART to capture the same information.
4. **The performance measure must be SMART**, that is Specific, Measurable, Achievable, Relevant and Time-bound.

Question

- 1 Do you agree with the proposed assessment criteria for the review?

1.3 How we will conduct the review

The review will involve consulting targeted stakeholders as well as researching and analysing key issues. This Issues Paper is the first step in our review process. It sets out the key issues and our preliminary views, and seeks comments from stakeholders.

We are seeking input from ENOs and users of the performance measures we currently collect. We invite interested parties to respond in writing to this paper by 13 April 2018. Information on how to make a submission is on page iii at the front of this paper.

We will continue to consult with stakeholders throughout the review. We intend to:

- ▼ hold a consultation workshop with the licensed ENOs and Sydney Trains to discuss the matters raised in the Issues Paper
- ▼ produce an Information Paper summarising stakeholder responses to the Issues Paper
- ▼ release a Draft Report with attached Draft Reporting Manuals that explains our draft decisions and invites further submissions from stakeholders, and.
- ▼ consider and analyse all stakeholder feedback before making our final decisions and releasing revised reporting manuals.

Table 1.1 below provides an indicative timetable for our review.

Table 1.1 Indicative review timetable

Date	Actions Proposed
2 March 2018	Engagement workshop with ENOs and Sydney Trains
21 March 2018	Issues Paper released
29 March 2018	Consultation workshop with ENOs and Sydney Trains
13 April 2018	Submissions due to Issues Paper
Late April 2018	Draft Reporting Manuals released for consultation
June 2018	Final Reporting Manuals in place
1 July 2018	New performance measures commence

Our revised Reporting Manuals are expected to apply from 1 July 2018.

As part of the review we will consider whether any of the performance measures require a longer period to commence, depending on the degree of changes required to the ENOs' systems.

1.4 The feedback we are seeking

We are seeking feedback from stakeholders on the questions below. The following chapters provide more context for each.

1	Do you agree with the proposed assessment criteria for the review?	2
2	How does each ENO assess the performance of their electricity network safety management system against the objectives of the ESSNM regulation?	8
3	How should the ENOs bring performance measurement results to the attention of their customers and the public?	9
4	What information should not be in the public domain? Why?	9

5	When consulting with external stakeholders while preparing the electricity network safety management system performance report and formal safety assessments, what have ENOs discovered about the information and measures of performance the public is most interested in?	9
6	Is there value in combining the electricity network safety management systems reporting and bushfire preparedness reporting into one performance report?	10
7	Do the current reporting timelines need to be modified to improve IPART's visibility of bushfire preparedness activities?	10
8	Is more frequent reporting (eg, quarterly) of key information required to ensure the objectives in the electricity network safety management system are being appropriately achieved throughout the year?	10
9	Should IPART should adopt a dual assurance approach to measuring the performance of the electricity network safety management system and bushfire risk management?	12
10	Do you agree with the tiered approach proposed for performance measures?	13
11	How would the Tier 1 and Tier 2 measures relate to the regulatory objectives?	14
12	What are the Tier 1 and Tier 2 performance measures that could be used to assess the overall and comparative performance of each ENO?	14
13	Should Tier 1 and Tier 2 performance measures be normalised and what factors should be used to normalise?	14
14	How should factors outside of the control of the ENO be captured when reporting Tier 1 and Tier 2 performance measures?	14
15	For the critical controls in place, what are the Tier 3 and Tier 4 performance measures that IPART could use to assess the performance of the electricity network safety management system?	15
16	What process should IPART adopt within the reporting manual to allow ENOs to evolve Tier 3 and Tier 4 performance measures over time?	15
17	How should IPART assess the accuracy and quality of the data reported by the networks?	15
18	Should a Bushfire Mitigation Index be developed and reported to IPART for monitoring preparedness for the bushfire danger period?	16
19	Should the Bushfire Mitigation Index calculation method be consistent across all ENOs?	16

2 Context of this review

This section outlines the context for our review, including an overview of performance measures, the legislative frameworks and our role in regulating ENOs.

2.1 Performance measures

A performance measure is something that can be simply and reliably used to measure change and assess performance against a goal or objective. They are used to measure progress against a desired outcome. Performance measures are used widely across government and private sectors.

Establishing performance measures and capturing information requires resources. It is important that the benefits derived from the information outweigh the costs of collecting it. Performance measures should be selected carefully to ensure information is well aligned to a desired outcome.

Performance measures may be lag or lead measures. Lag measures are a historical measure; they measure things that have happened in the past. They are typically output-oriented and easy to measure, but can be hard to influence.

Lead measures are a predictive measure; they measure changes associated with future events and outcomes. They are typically input-oriented and harder to measure, but easier to influence. Lead measures can inform proactive decisions or adjustments and so influence whether an outcome will be met. Being clear about the desired outcome is essential before selecting and using lead measures.

The most effective approach is likely to involve a combination of lead and lag measures.

2.2 Licensed Electricity Network Operator performance reporting to IPART

All ENOs with assets in NSW are required by the *Electricity Supply (Safety and Network Management) Regulation 2014* to measure their performance against their safety management systems and report the results of these performance measurements annually. The licensed network operators¹ also have a licence condition which requires them to comply with IPART's reporting manuals. Non-licensed ENOs are not required to comply with IPART's reporting manuals. However, the manuals provide guidance to these ENOs to assist them to meet the requirement of the ESSNM Regulation. We intend to use the reporting manuals as the tool to define the appropriate safety management system performance measures and how the networks should report against them.

¹ These are Ausgrid, Endeavour Energy, Essential Energy and TransGrid.

ENOs are responsible for meeting their statutory obligations. The obligations monitored by IPART require them to:

- ▼ comply with the conditions of their electricity networks licensing regime
- ▼ take all reasonable steps to operate safe electricity networks and comply with specific safety and reliability obligations
- ▼ comply with employment guarantees requirements (for privatised and partly privatised networks), and
- ▼ comply with the *NSW Code of Practice for Authorised Network Operators* when assessing environmental impact of their works.

IPART's role is to hold ENOs accountable for meeting their obligations by developing and implementing an effective risk-based compliance and enforcement framework. Network operators are required to report to us on their performance and compliance. IPART uses these reports in addition to our auditing framework.

The information gathered through reporting allows IPART to:

- ▼ determine whether ENOs are consistently and effectively meeting statutory obligations
- ▼ identify immediate risks
- ▼ identify trends that signify emerging issues across the industry with a view to developing safety measures or supporting industry safety initiatives where appropriate
- ▼ ensure employment conditions are maintained for employees of the leased network operators, and
- ▼ ensure compliance with the *NSW Code of Practice for Authorised Network Operators* when assessing the environmental impact of their works.

Reporting can be quarterly, annually, or in some cases, soon after a particular event or non-compliance occurs. In some cases, the reporting frequency is prescribed in licence conditions, in others we prescribe reporting frequency through published reporting manuals. The amount of information we collect varies depending on the area of regulation and, in the case of a breach, the severity of that breach.

The subject of this review are the reporting requirements for 'electricity network safety management systems' and for 'bushfire preparedness'. We provide the other reporting requirements for context. Reporting manuals for each compliance area are shown in Table 2.1.

Table 2.1 Summary of current ENOs reporting requirements

Compliance area – reporting manual	Report due to IPART	Reporting period	Is an audit report required?	Affected network operators
Incident reporting	Ongoing – more information in the reporting manual	Report on individual significant incidents	No	All ENOs with assets in NSW
Electricity network safety management systems	31 August	The preceding financial year	At IPART's discretion.	All ENOs with assets in NSW
Bushfire preparedness	31 October	12 months to 30 Sept.	At IPART's discretion.	All ENOs with assets in NSW
Compliance with critical infrastructure licence conditions	30 September	The preceding financial year	Yes	TransGrid Ausgrid Endeavour
Compliance with reliability and performance standards	31 October 31 January 30 April 31 July	The preceding quarter	Yes, by 30 Sept. for preceding financial year	Ausgrid Endeavour Essential
Compliance with other licence conditions	31 August	The preceding financial year	At IPART's discretion.	Ausgrid Endeavour Essential TransGrid
Employment Guarantees	31 October 31 January 30 April 31 July	The preceding quarter	At IPART's discretion.	Ausgrid Endeavour TransGrid
Code of Practice for Authorised Network Operators	Ongoing 30 April	Report individual significant breaches as soon as known, and all breaches for the calendar year	At IPART's discretion.	Ausgrid Endeavour TransGrid
Transmission reliability standard	31 August	Report on compliance as of 1 July of each financial year	At IPART's discretion.	TransGrid

Note: Some of these dates in this table are at the Tribunal's discretion and may be changed from time to time.

Source: IPART. This and more information can be found on the 'reporting' page on our website:

<https://www.ipart.nsw.gov.au/Home/Industries/Energy/Energy-Networks-Safety-Reliability-and-Compliance/Electricity-networks/Reporting>

3 Approach to monitoring electricity networks' safety management systems performance

The performance assessment of each ENOs electricity network safety management system should relate directly to the regulatory objectives that each ENO is required to achieve. The objective of the safety management system is to ensure that the design, construction, commissioning, operation and decommissioning of its network is safe.

The electricity network safety management system must support:

1. the safety of members of the public
2. the safety of persons working on networks
3. the protection of property (whether or not belonging to a network operator)
4. the management of safety risks arising from the protection of the environment, and
5. the management of safety risks arising from loss of electricity supply.²

The review aims to use, as much as possible, the internal performance measures each ENO currently uses to assess their performance against the objectives in the ESSNM Regulation. Understanding how each ENO assesses internally will help us develop a performance reporting manual that minimises the regulatory burden on the ENOs. We aim to closely align to the activities and reporting already being performed by the ENOs. We may use additional measures where we consider the current practices are insufficient to meet the regulatory outcomes required.

Question

- 2 How does each ENO assess the performance of their electricity network safety management system against the objectives of the ESSNM regulation?

3.1 Monitoring performance

We currently measure the performance of each ENOs' electricity network safety management system through our manuals for safety management system reporting, bushfire preparedness reporting, incident reporting, and other instruments.

The current safety management system performance report requirements are in the two reporting manuals under review. They focus on compliance reporting elements and performance measures.

² ESSNM Regulation, s 6.

For overall safety management system reporting³:

- ▼ The compliance reporting elements include:
 - narrative on the safety and reliability of the network
 - Formal Safety Assessment reviews and residual risks
 - safety risk management actions, and
 - compliance with directions from IPART.
- ▼ The performance measures include:
 - network asset failures
 - target asset failure rates
 - encroachment on network assets
 - unauthorised access to network assets, and
 - customer safety reporting.

The bushfire risk management report requires details on⁴:

- ▼ the number of inspections of overhead lines against the number required
- ▼ the number of defects identified and corrected
- ▼ the number of fire starts from network assets
- ▼ the number of fire starts from private installations
- ▼ bushfire risk management actions
- ▼ audit reports on the ENSMS, and
- ▼ compliance with directions from IPART.

The ESSNM Regulation also requires ENOs to publish results of their performance measurements annually. They must make the performance results available in a way that, as far as practicable, brings them to the notice of customers and the public. ENOs may seek an exemption from IPART from publishing information in the public facing version of their ENSMS performance report if publication would not be in the public interest in the circumstances.

Question

- 3 How should the ENOs bring performance measurement results to the attention of their customers and the public?
- 4 What information should not be in the public domain? Why?
- 5 When consulting with external stakeholders while preparing the electricity network safety management system performance report and formal safety assessments, what have ENOs

³ The reporting manual with the reporting template is available on our website: <https://www.ipart.nsw.gov.au/files/sharedassets/website/shared-files/licensing-licence-dnsp-reporting-manual-201415-and-audit-guideline-december-2014/october-2017-electricity-networks-reporting-manual-safety-management-systems-reporting.pdf>

⁴ The reporting manual with the reporting template is available on our website: <https://www.ipart.nsw.gov.au/Home/Industries/Energy/Energy-Networks-Safety-Reliability-and-Compliance/Electricity-networks/Reporting/Reporting-Manuals/October-2017-Electricity-networks-reporting-manual-Bushfire-risk-management-reporting>

discovered about the information and measures of performance the public is most interested in?

The bushfire risk management report specifically focuses on one risk area, but this report potentially relates to the full range of regulatory objectives. The information reported in the bushfire risk management report is also relevant to other risks that an ENO is managing. For example, a bushfire can be started if a pole falls down, a type of 'asset failure'. The ENOs routinely inspect and maintain their assets to prevent this happening. But an asset failure like a pole falling down can also lead to multiple consequences, such as an injury to a member of the public or network worker, property damage, or a loss of electricity supply. This type of asset failure could also be reported in the broader on safety management system performance.

Question

- 6 Is there value in combining the electricity network safety management systems reporting and bushfire preparedness reporting into one performance report?

The electricity network safety management system performance report is an annual report covering the financial year. The bushfire risk management report, is also an annual report, but covers the period from 1 October to 30 September to align with the nominal bushfire season. ENOs must submit the electricity network safety management system performance report by 31 August each year and the bushfire preparedness report by 31 October each year.

Providing the bushfire preparedness report by 31 October captures the measures that an ENO has taken up to the start of the bushfire season. However, IPART will not be aware of how each ENO is tracking with their preparations leading into the bushfire season. More frequent or earlier reporting of key information in the lead-up to the start of the bushfire season may be more informative to IPART and the public, providing confidence that each ENO has the necessary controls in place.

ENOs currently provide IPART with a quarterly report for other compliance purposes including for network reliability and performance and compliance with employment guarantees.

Question

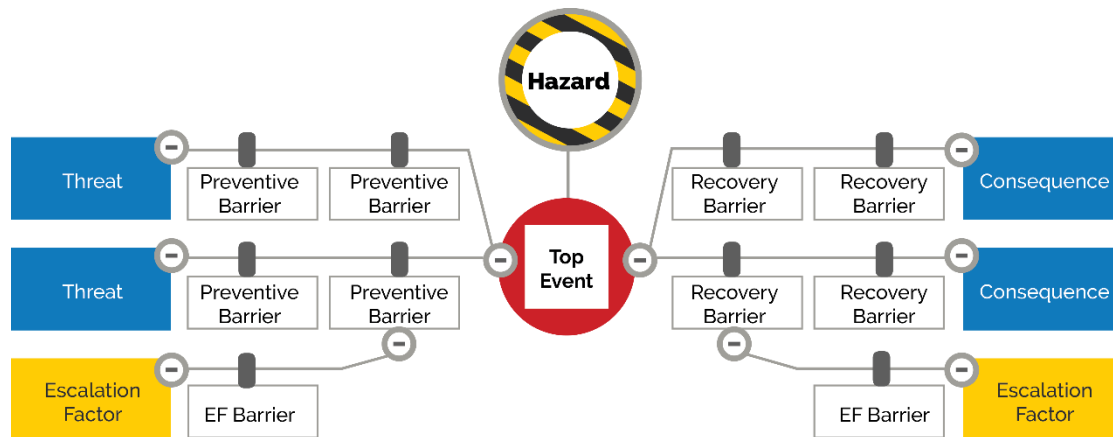
- 7 Do the current reporting timelines need to be modified to improve IPART's visibility of bushfire preparedness activities?
- 8 Is more frequent reporting (eg, quarterly) of key information required to ensure the objectives in the electricity network safety management system are being appropriately achieved throughout the year?

3.2 Leading and lagging performance measures

All licensed ENOs have developed formal safety assessments. A bow-tie risk assessment is used to diagrammatically illustrate the threats, preventative controls, escalating or weakening factors, loss of control event, mitigating controls and consequences.

Figure 3.1 presents an example bow-tie diagram and Box 3.1 has an explanation and example of how it is used in practice.

Figure 3.1 Bow-tie risk assessment (example)



Box 3.1 Using a bow-tie risk assessment

The safety ‘event’ to be controlled is in the centre of the diagram in Figure 3.1.

This ‘event’ is the risk that the ENO needs to control. For example, this could be ‘workers start a fire’.

The left side of the diagram identifies preventative actions and thus reduces the likelihood

The ‘threats’ on the far left of the diagram are the things that might cause the event to occur. Using our fire start example, one threat could be that sparks from machinery ignites a fire. There would likely be numerous threats identified for any event.

Attached to each threat are the preventative barriers that a person can reasonably take to try to prevent the event happening. Preventative actions for our example would be to clear dry vegetation from the worksite, and another would be to avoid doing the particular work in hot/dry/windy conditions, such as on high bushfire risk days.

The right side of the diagram identifies actions to reduce the consequences after the event has occurred

The far right hand side of the diagram identifies the consequences that the event can cause. For instance, a fire start might lead to a bushfire, or it might lead to property damage. These would be the consequences. Again, there are likely to be numerous consequences identified for any event.

The ‘recovery barriers’ attached to each consequence are actions that can be taken after the event occurs to mitigate the potential consequences. Continuing our example, these would be to extinguish a fire once it started, or alerting fire authorities so they can extinguish the fire before it does too much damage.

On both sides, escalation factors are factors external to the incident which have contributed to the failure of a preventative barrier or recovery barrier control.

The structure of the bow-tie assessment used by the ENOs naturally lends itself to distinguishing between leading measures and lagging measures.

Leading measures monitor the strength of the preventative barriers (controls) by measuring performance in maintaining robust controls. Lagging measures record the number of events or actual consequences where preventative barriers (or controls) have failed.

Leading and lagging measures are complementary tools. Leading measures are forward-looking and input based; lagging measures are retrospective and outcomes based. Near misses and low consequence events can be used as both leading and lagging measures of performance as they can help inform the likelihood of more severe consequences.

Good practice combines both leading and lagging measures of performance. This enables a pro-active, predictive and focussed approach on preventing adverse events. This approach is referred to as 'dual assurance'.

Question

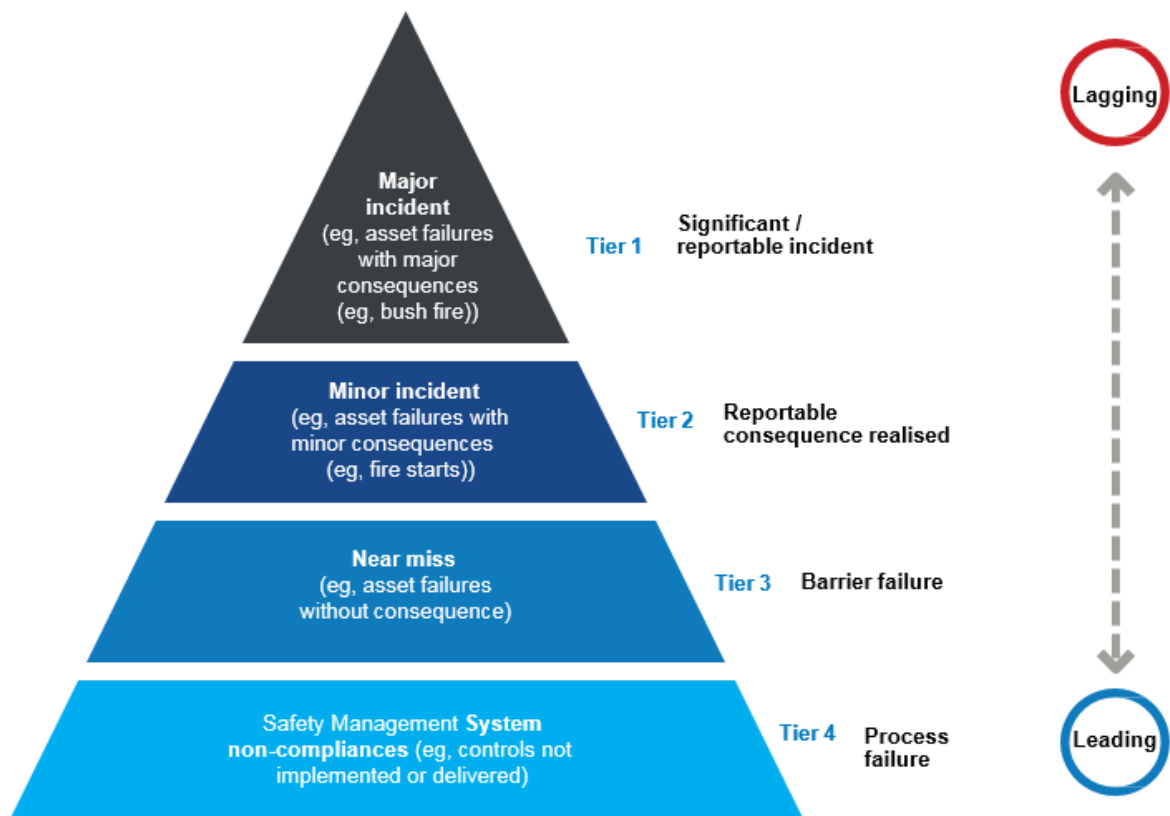
- 9 Should IPART should adopt a dual assurance approach to measuring the performance of the electricity network safety management system and bushfire risk management?

3.3 A tiered approach to performance measures

A well-established approach to understanding safety incidents is the safety triangle (also known as the accident triangle or Heinrich's triangle). The safety triangle is used to illustrate how lower level incidents in safety processes and systems convert to incidents of increasing severity. The triangular shape emphasises that there are larger data sets available of the leading measures from which to measure performance, and comparatively smaller data sets of lagging measures from which to measure performance as these are only associated with consequences being realised.

Figure 3.2 shows how the safety triangle could apply safety performance measures. The text below it further explains the tiered approach.

Figure 3.2 The 'safety triangle'



Tier 1 and Tier 2 measures

Tier 1 and Tier 2 measures as described in Figure 3.2 are lagging measures and may be suitable for ENOs to report to the public. They would assess performance against the regulatory objectives and require clear definitions. The selection and definitions of Tier 1 and Tier 2 performance measures should align with IPART's incident reporting requirements.

Tier 3 and Tier 4 measures

Tier 3 and Tier 4 measures as described in Figure 3.2 are more leading measures of performance and would generally be more suitable to being tailored to each ENOs' electricity network safety management system and Formal Safety Assessments. Tier 3 and Tier 4 measures can also be more detailed and associated with specific activities of each ENO. As each ENO has different assets and network topologies, Tier 3 and Tier 4 measures would be less comparable. However, sharing this information between the ENOs and IPART may be valuable to identify emerging issues and improvements in safety practices.

Question

10 Do you agree with the tiered approach proposed for performance measures?

3.4 Industry performance measures (Tier 1 and Tier 2)

Tier 1 and Tier 2 measures need to be relevant to all ENOs and reflect their performance in managing the risks associated with the regulatory objectives. They should allow analysing trends over time and benchmarking against the other ENOs. The Tier 1 and Tier 2 measures should remain current over time and provide an ongoing record of each ENO's performance.

The definition of Tier 1 and Tier 2 performance measures need to be clearly understood and be unambiguous.

Normalising data may support comparative benchmarking of ENOs' performance, and also the performance of each ENO over time. A range of normalisation factors are available, such as the number and length of assets (eg, distribution transformers and overhead lines) and the number of hours worked. As Tier 1 and Tier 2 events may be infrequent and impacted by factors outside of the control of the ENO (such as storms and floods), direct comparison between ENOs may not be statistically significant.

Question

- 11 How would the Tier 1 and Tier 2 measures relate to the regulatory objectives?
- 12 What are the Tier 1 and Tier 2 performance measures that could be used to assess the overall and comparative performance of each ENO?
- 13 Should Tier 1 and Tier 2 performance measures be normalised and what factors should be used to normalise?
- 14 How should factors outside of the control of the ENO be captured when reporting Tier 1 and Tier 2 performance measures?

3.5 ENO specific performance measures (Tier 3 and Tier 4)

Tier 3 and Tier 4 performance measures are useful for monitoring the risk controls that each ENO has put in place as articulated through their Formal Safety Assessments. In selecting Tier 3 and Tier 4 measures, it is important for each ENO to identify the critical controls, and state whether these controls apply to specific regulatory objectives or apply across all objectives. ENOs should first consider to higher order controls within the hierarchy of controls⁵, and how these they could effectively monitor and report against these controls. For example, identifying performance measures for critical controls such as the design of plant, compliance to standards, and competence of personnel may be necessary to ensure that the network is effectively maintaining the control environment.

Tier 4 measures are purely leading measures and monitor operational activities associated with maintaining the control environment. Tier 3 measures are generally more lagging and identify non-consequential failures of the controls. They may also be useful for monitoring the incidence of weakening (escalating) factors within the bow-tie.

⁵ The 'hierarchy of controls' is described in section A4 of the Australian Standard AS 5577 *Electricity network safety management systems*, with which the networks operators must comply. It states that where treatments or controls are applied, "physical/engineering controls should be used in preference to procedural/managerial controls". Standards Australia, *Australian Standard Electricity network safety management systems* 2013, p18.

Appropriate Tier 3 and Tier 4 measures for each ENO will need to reflect the different threats and controls that the network has identified and adopted in the Formal Safety Assessments. Under a dual assurance approach to performance measurement, a leading performance measure should be matched and correlated to a lagging performance measure allowing assessment of the strength of controls. For example, a leading Tier 4 measure may be 'the number of below ground pole inspections that are performed against the target number of inspections' (this could be normalised to show the adherence to the planned pole inspection frequency, or be more detailed to show that more critical poles are inspected more frequently). A related lagging Tier 3 measure may be 'the number of condemned poles that are not replaced within three months', or 'the number of poles that failed within 24 months of an inspection', or both. A correlated Tier 2 measure could be 'the total number of pole failures, or the number of pole failures per 100,000 poles'.

Tier 3 and Tier 4 measures may evolve over time due to technological changes and a better understanding of a control's strength and weakness. For example, one ENO may identify that they could use a Tier 4 measure to monitor progress against a multi-year plan to achieve compliance with industry vegetation management guidelines. Once compliance has been achieved, this Tier 4 measure would become obsolete and may be replaced by Tier 4 and Tier 3 measures such as 'inspections performed against a target' (Tier 4) and 'vegetation incursions not addressed within the required timeframe' (Tier 3).

Question

- 15 For the critical controls in place, what are the Tier 3 and Tier 4 performance measures that IPART could use to assess the performance of the electricity network safety management system?
- 16 What process should IPART adopt within the reporting manual to allow ENOs to evolve Tier 3 and Tier 4 performance measures over time?
- 17 How should IPART assess the accuracy and quality of the data reported by the networks?

3.6 Bushfire mitigation

Victorian electricity network businesses adopt a Bushfire Mitigation Index to monitor performance of the pre-summer bushfire activities, and to track bushfire mitigation activities during the bushfire danger period. The index captures a suite of control measures and weights them to determine a single number that is reported internally as a measure of the level of compliance to the bushfire preparedness activities. We have provided further detail about this approach in Section 4.2.

The control measures included in the index include:

- ▼ routine vegetation inspections
- ▼ routine asset inspections
- ▼ vegetation incursions
- ▼ asset defects, and
- ▼ pre-summer bushfire inspections.

Essential Energy has developed a Bushfire Mitigation Index for internal use that closely resembles that used by the Victorian electricity network businesses.

Question

- 18 Should a Bushfire Mitigation Index be developed and reported to IPART for monitoring preparedness for the bushfire danger period?
- 19 Should the Bushfire Mitigation Index calculation method be consistent across all ENOs?

4 Overview of performance measures in other Australian jurisdictions

As part of the review of our electricity network safety management system performance measures, we have reviewed the performance measures adopted in other Australian jurisdictions. The following sections provide an overview of the performance measures in place so that stakeholders can consider them in responding to the questions raised in this issues paper. Appendix A contains further detail.

4.1 Western Australia

In Western Australia, electricity network safety is legislated through the *Electricity (Network Safety) Regulations 2015* that came into effect on 6 August 2015.⁶ The regulations are designed to ensure the safety of the public, consumers and electricity workers in the vicinity of electricity supply infrastructure.

Regulation 31 of the *Electricity (Network Safety) Regulations 2015* requires the four major ENOs to publish their public safety objectives for each of the following three years. Each ENO must state a target for the maximum number of specified safety incidents, as listed in Regulation 30. Western Power, the largest ENO in Western Australia uses a trend-based method to establish the objectives. It notes, in setting annual objectives, that it strives to maintain and operate the network in a way that results in the least number of incidents as is reasonably possible.⁷

The ENOs are then required to report quarterly on their performance against the outcomes to EnergySafety, the safety regulator in Western Australia.

In Appendix A, we list the safety incidents referred to in Regulation 30. All performance measures are lagging measures and would be considered to be Tier 1 and Tier 2 performance measures. They are normalised to a rate per unit of measure (eg, unassisted pole failures per 100,000 poles).

4.2 Victoria

Under the *Electricity Safety Act 1998* (VIC), Energy Safe Victoria is the safety regulator responsible for electricity safety in Victoria. It requires all Victorian distribution ENOs to report their safety performance. In 2010, in consultation with the ENOs, Energy Safe Victoria developed a set of metrics to monitor network safety performance. It defined the metrics for specific incidents considered to pose a significant hazard or risk.

⁶ The full regulation can be found online, at https://www.slp.wa.gov.au/legislation/statutes.nsf/main_mrtitle_13665_homepage.html

⁷ Western Power, *Network Safety Performance Outcomes (FY 2017/18 Quarter 2)*, p 5, available online at <https://westernpower.com.au/media/2741/annual-network-safety-performance-outcomes-2017-18-q2.pdf>

The key safety metrics related to network assets (and not specifically work practices) are:

1. asset failures without fires
2. asset failures with fires on or in assets
3. vegetation fires due to asset failure
4. vegetation fires due to contact by vegetation, third part or animals
5. HV injection
6. electric shocks, and
7. access breaches.

Victorian distribution businesses also measure their preparedness for the declared fire danger period through a Bushfire Mitigation Index. Each ENO aims to maintain an index of zero throughout the declared fire danger period.⁸ Together with other measures, the Bushfire Mitigation Index reports the status of vegetation compliance in areas where the fire danger period has been declared.

Energy Safe Victoria's 2016-17 report on the performance of distribution businesses⁹ included concerns about the way clearance rates were reported and differences in the methods used to calculate the Bushfire Mitigation Index. Energy Safe Victoria was seeking a greater degree of detail in reporting of line clearance rates, and was looking at developing an improved performance measure.¹⁰

In 2016, the Energy Safe Victoria published a revised set of performance measures. This included:

- ▼ monthly statistical reporting of outages and vegetation
- ▼ quarterly reporting of non-serious electrical incidents
- ▼ statistical reporting of asset failures (no fire)
- ▼ vegetation causing outages
- ▼ vegetation requiring urgent pruning
- ▼ safety improvement programs, directions and exemptions, and
- ▼ annual reports for risk management review and summaries of internal audits.¹¹

We have reproduced the templates for these performance measures in Appendix A.

4.3 South Australia

The Office of the Technical Regulator is responsible to the South Australian Government for the safety and technical performance of the electrical industry. The Technical Regulator is responsible for monitoring and regulating safety and technical standards in the electricity

⁸ Victorian Government, *2017 Safety Performance Report on Victorian Electricity Networks*, October 2017, p 33.

⁹ Victorian Government, *2017 Safety Performance Report on Victorian Electricity Networks*, October 2017

¹⁰ Ibid, p 33.

¹¹ Energy Safe Victoria, *Electrical Infrastructure Safety Electricity Incident and Safety Performance Reporting Guidelines*, June 2016.

supply industry to promote the establishment and maintenance of safe and efficient electricity generation, transmission, distribution and supply systems¹².

A key licence requirement for electricity infrastructure entities (including transmission or distribution network operators)¹³ is to prepare and periodically revise a safety, reliability, maintenance and technical management plan. The details that must be included in the plan are listed in Regulation 72(2a) of the *Electricity (General) Regulations 2012*.

The Technical Regulator reviews an electrical entity's plan and, where appropriate, makes recommendations and comments to assist in refining it. The Technical Regulator then recommends to the licensing authority for the electricity supply industry, the Essential Services Commission of South Australia, that the plan be approved.

A safety, reliability, maintenance and technical management plan is a high level document relating to operational standards and is required to meet Australian Standard AS 5577¹⁴. It defines key performance measures to measure actual performance of an entity. The plan provides an auditable quality approach to industry safety and technical performance, encouraging continuous improvement of safety systems and technical compliance.

The plan addresses issues relating to the technical standards, operating and maintenance procedures and management practices, including electrical and safety requirements, applicable to an entity. The plan outlines how the entity will comply with the direct requirements of the legislation and standards and codes referenced by the legislation.¹⁵

Key Performance Indicators cover service and technical standards and include supply interruptions, power surges and low and high voltage complaints. SA Power Networks (the electricity distributor in South Australia) reports its performance against these indicators. Reliability and outage indicators are reported quarterly; all other indicators are reported annually.¹⁶ The safety performance measures developed by SA Power Networks in their safety, reliability, maintenance and technical management plans are generally lagging indicators.

¹² *Electricity Act 1996* (SA) s 8.

¹³ under the *Electricity Act 1996* (SA), s 23 (1)(c)(i).

¹⁴ *Electricity (General) Regulations 2012* (SA), cl 72(2a).

¹⁵ South Australian Government, 'Safety, reliability, maintenance and technical management plans', available online at <https://www.sa.gov.au/topics/energy-and-environment/electrical-gas-and-plumbing-safety-and-technical-regulation/compliance-and-enforcement/srmtmps> accessed 20 March 2018.

¹⁶ Department of State Development, *Annual report of the Technical regulator Electricity 2015-16*, p 11.

A Specific performance measures used in other Australian jurisdictions

A.1 Western Australia

This information is reproduced from Western Australia's *Electricity (Network Safety) Regulations 2015*.¹⁷

A.1.1 West Australian network safety performance incidents

(30) Network safety performance incidents

1. In this Division, *network safety performance incident*, in relation to a network, means
 - a) a discharge of electricity from the network that causes the electric shock, injury or death of a person or the death of livestock; or
 - b) an incident caused by the network, other than a fire, that causes damage to property other than to the network; or
 - c) a fire caused by the network that causes damage to property other than to the network; or
 - d) a fire, on a pole that is a part of the network, that originated on the pole; or
 - e) the contacting of 2 or more conductors of the network, of different phases, caused by temperature variations or wind; or
 - f) an unassisted failure of a pole that is a part of the network; or
 - g) an unassisted failure of an overhead conductor that is a part of the network; or
 - h) an unassisted failure of a stay wire that is a part of the network; or
 - i) an unassisted failure of an underground cable that is a part of the network.
2. In this Division, the types of network safety performance incident are
 - a) each type of incident described in subregulation (1)(a) to (1)(c); and
 - b) a fire on a pole, as described in subregulation (1)(d), according to whether the pole was a part of transmission or distribution works; and
 - c) the contacting of conductors, as described in subregulation (1)(e), according to whether the conductors were a part of transmission or distribution works; and
 - d) an unassisted failure of a pole according to whether the pole was a part of transmission or distribution works and according to the following categories of material out of which the pole is made – hard wood, soft wood, steel, concrete, aluminium, composite fibre and other; and
 - e) an unassisted failure of an overhead conductor according to whether the conductor was a part of transmission or distribution works; and

¹⁷ This can be found online, at: https://www.slp.wa.gov.au/legislation/statutes.nsf/main_mrtitle_13665_homepage.html. Last accessed on 14 March 2018.

- f) an unassisted failure of a stay wire according to whether the wire was a part of transmission or distribution works; and
- g) an unassisted failure of an underground cable according to whether the cable was a part of transmission or distribution works.

A.1.2 West Australian publication requirements

31 Network operator to publish annual objectives

1. A network operator must, on or before each 30 November –
 - a) give the Director a statement of network safety performance objectives that complies with subregulations (2) to (4); and
 - b) publish the statement on a website maintained by the network operator.
Penalty: a fine of \$250 000.
2. The statement must set out, for each type of network safety performance incident, the network operator's objective in relation to the maximum number of incidents of that type occurring in relation to the network during the financial year in which the 30 November occurs and each of the next 3 financial years.
3. For unassisted failures of poles, the statement must also set out the network operator's objectives in terms of maximum rates of failure, according to whether the pole was a part of transmission or distribution works.
4. The statement must explain how the network operator developed the objectives and demonstrate that the objectives are consistent with the construction and maintenance programme of the operator for each of the years.
5. The network operator must ensure that the statement remains published on a website maintained by the network operator for 4 years.
Penalty: a fine of \$250 000.
6. For a network operator that is a network operator on the day on which this regulation comes into operation, subregulations (1) and (2) are modified so that the first statement under subregulation (1) must –
 - a) be given and published before 1 October 2015; and
 - b) cover the financial year commencing on 1 July 2015 and the next 2 financial years.

32 Network operator to publish quarterly outcomes

1. This regulation applies to each financial year that begins after a network operator is required to give its first statement of network safety performance objectives under regulation 31.
2. The network operator must, within 40 working days after the end of each quarter in the year –
 - a) give the Director a statement of network safety performance outcomes for that quarter that complies with subregulations (3) and (4); and
 - b) publish the statement on a website maintained by the network operator.
Penalty: a fine of \$250 000.

3. The statement of network safety performance outcomes must set out, for each type of network safety performance incident –
 - a) the network operator’s current objective in relation to the maximum number of incidents of that type for the year, as published under regulation 31; and
 - b) the number of incidents of that type that occurred in relation to the network during the quarter; and
 - c) the number of incidents of that type that occurred in relation to the network during the period beginning at the start of the year and ending at the end of the quarter.
4. For unassisted failures of poles, the statement must also set out the matters in subregulation (3) in terms of rates of failure, according to whether the pole was a part of transmission or distribution works.
5. The network operator must ensure that the statement of network safety performance outcomes –
 - a) remains published on a website maintained by the network operator for 4 years; and
 - b) is not amended unless the Director approves the proposed amendment.

Penalty: a fine of \$250 000.

Western Power, a major distribution network in Western Australia, notes, in setting annual objectives, that it strives to maintain and operate the network in a way that results in the least number of incidents as is reasonably possible.¹⁸

A.2 Victoria

The following information has been extracted from the *Electrical incident and safety performance reporting guidelines* produced by Energysafe Victoria to assist major electricity companies (MECs).¹⁹

A.2.1 Monthly statistical summary of outages and vegetation inspection

The following data is submitted monthly.

¹⁸ Western Power, *Network Safety Performance Outcomes (FY 2017/18 Quarter 2)*, p 5, available online at <https://westernpower.com.au/media/2741/annual-network-safety-performance-outcomes-2017-18-q2.pdf>

¹⁹ Energy Safe Victoria, *Electrical incident and safety performance reporting guidelines*, June 2016, pp 10-15. available online at <http://www.esv.vic.gov.au/wp-content/uploads/2016/12/MECGuide-1.pdf>

Table A.1 Outage data submitted to the ESV monthly

Responsible Person	Number of outages		
	HV assets	LV assets	Premises
All unplanned outages			
[DB name]			
Unplanned power outages due to vegetation (Hazardous Bushfire Risk Area)			
[DB name]	[H1]	[L1]	[P1]
[Municipal council name]	[H2]	[H2]	[P2]
[Other responsible person name/address]	[H3]	[H3]	[P3]
[DB name]	[H1+H2+H3]	[L1+L2+L3]	[P1+P2+P3]
Unplanned power outages due to vegetation (Low Bushfire Risk Area)			
[DB name]	[H1]	[L1]	[P1]
[Municipal council name]	[H2]	[H2]	[P2]
[Other responsible person name/address]	[H3]	[H3]	[P3]
[DB name]	[H1+H2+H3]	[L1+L2+L3]	[P1+P2+P3]

Source: Energy Safe Victoria, *Electrical incident and safety performance reporting guidelines*, June 2016, p 10

Table A.2 Vegetation data submitted to the ESV monthly

Responsible Person	Spans inspected this month	Spans with no vegetation	Comp -liant spans	Cumulative total of non-compliant spans		
				HV	LV	Service lines
Hazardous Bushfire Risk Area (HBRA)						
[DB name]						
[Municipal council [name]						
[Other responsible person name/address]						
Low Bushfire Risk Area (LBRA)						
[DB name]						
[Municipal council [name]						
[Other responsible person name/address]						

Source: Energy Safe Victoria, *Electrical incident and safety performance reporting guidelines*, June 2016, p 11

Note: 'No vegetation' means that there is no vegetation within the spans or that the vegetation within the span will never require management to meet minimum vegetation clearance standards.

Table A.3 Vegetation data submitted to the ESV monthly

Responsible Person	Non-compliant spans last month	Spans actioned to compliance this month	Non-compliant spans this month	Cumulative total of non-compliant spans		
				HV	LV	Service lines
Hazardous Bushfire Risk Area (HBRA)						
[DB name]						
[Municipal council [name]]						
[Other responsible person name/address]						
Low Bushfire Risk Area (LBRA)						
[DB name]						
[Municipal council [name]]						
[Other responsible person name/address]						

Source: Energy Safe Victoria, *Electrical incident and safety performance reporting guidelines*, June 2016, p 11

A.2.2 Quarterly reporting of other matters to the ESV

The following information is submitted to ESV by the end of the first month following the end of the quarter:²⁰

Non-serious electrical incidents

- ▼ A quarterly report is to be submitted to ESV detailing the following:
 - Power poles, towers or crossarms that have fallen or collapsed
 - Operating errors (remote and field operation), including, but not limited to, earths left on, operation of incorrect item, incorrect sequence of operation and inadvertent protection trips while testing.
 - Incorrect protection operation (failure to operate as designed, including non-operation of protection when there is a fault, backup protection operation instead of primary, incorrect settings or failed protection item)
 - Breaches of Blue Book
 - Live line incidents.

As a minimum, the summary report is to include:

 - date of incident
 - location of incident
 - cause of incident
 - type of plant or equipment involved
 - work party involved (eg, MEC crew, MEC contractors, external contractors, etc.)
 - other factors (eg, weather, equipment, training, etc.) relevant to the event.

²⁰ **Source:** Energy Safe Victoria, *Electrical incident and safety performance reporting guidelines*, June 2016, pp 12-14

Statistical reporting of other incidents

A quarterly report is to be submitted to ESV detailing the following:

- ▼ Asset failures (no fire)
 - Number of bare conductor failures/breakages (not related to external impact)
This includes any tension section eg, terminations, compression joints, etc.
This excludes strand broken and non-tension sections eg, bridges, ties, etc.
 - Number of crossarm failures (including outage-related or maintenance-related failures)
This excludes failures due to external impact and crossarm fires.
 - Number of reported neutral failures or degradation of Major Electricity Company (MEC) neutral conductor (includes all cases where shocks have been reported)
 - Number of pole and tower failures (i.e. pole has fallen, or the pole base has no resistance to bending moment eg, only conductor or stay supports pole)
This excludes impact damage (eg, vehicle strikes).
Reporting should provide separate statistics for combinations of pole type (LV,HV, public lighting, service, stay), pole material (wood, steel, concrete) and voltage (LV, HV, public lighting, 22kV, 66kV).
 - Number of HV ties failed
 - Number of assets dislodged from their supporting structures
This excludes items included in other categories above (eg, unattached LV and HV conductor, insulator broken and not attached to crossarm or bracket, transformer or other plant that has fallen off support structure)
 - Number of HV fuse failures (including 'hang ups', etc. where no fire has occurred)
 - Number of reported instances where vehicles have struck MEC poles or towers
 - Number of reported instances where vehicles have struck MEC conductors and overhead services
 - Number of insulator failures(transmission businesses only)
 - Number of primary plant failures (transmission businesses only)
- ▼ Vegetation (tree/branch) causing outage
This excludes windborne vegetation (loose debris) and accidental contact by tree contractors. The summary report is to include:
 - Number of reports of vegetation faults that are MEC responsibility in HBRA
 - Number of reports of vegetation faults that are MEC responsibility in LBRA
 - Number of reports of vegetation faults that are not MEC responsibility in HBRA
 - Number of reports of vegetation faults that are not MEC responsibility in LBRA.
- ▼ Vegetation (tree/branch) requiring urgent pruning(DBs only)
 - This excludes windborne vegetation (loose debris) and accidental contact by tree contractors. The summary report is to include:
 - Number of reports of vegetation that are MEC responsibility requiring urgent cutting, removal or pruning in HBRA
 - Number of reports of vegetation that are MEC responsibility requiring urgent cutting, removal or pruning in LBRA

- Number of reports of vegetation that are not the MEC responsibility requiring urgent cutting, removal or pruning in HBRA.
- Number of reports of vegetation that are not the MEC responsibility requiring urgent cutting, removal or pruning in LBRA.

Safety Improvement Program, Direction and Exemptions (DBs only)

- ▼ For each nominated Safety Improvement Initiative, the summary report is to include:
 - name of initiative
 - measure for the initiative (eg, number replaced, kilometres replaced)
 - completed to date
 - annual cumulative forecast
 - program target
 - explanatory comments.
- ▼ For each Direction or Exemption, the summary report is to include:
 - name of Direction or Exemption
 - status of Direction or Exemption (eg, not started, 50% complete, completed)
 - explanatory comments.

A.2.3 Other annual reporting to the ESV

ESV requires the following information for the purposes of determining compliance with the Electricity Safety (Management) Regulations:²¹

- ▼ Risk management review

MECs are required to submit to ESV a summary report detailing:

 - when the risk register in the safety case was reviewed
 - who (roles) undertook the review
 - who (role) endorsed/ accepted the review findings (eg, Board or Risk Committee)
 - the number of items in the risk register reviewed (number and percentage of total risks)
 - the amended ratings (risk item; original and amended ratings of likelihood, consequence and risk; explanation for amendment)
 - details of any new risks added to the risk register.
- ▼ Summary of audits

MECs are required to submit to ESV a summary report that describes the MEC's internal audit strategy and activity during the previous year, including:

 - a description of the audits undertaken
 - a summary of the audit findings, corrective actions and progress to completion
 - a summary of any common themes discovered.

Internal audit activity is to include audits performed on its contractors involved in construction, maintenance, vegetation management, asset inspection etc.

²¹ **Source:** Energy Safe Victoria, *Electrical incident and safety performance reporting guidelines*, June 2016, p 15.

A.3 South Australia

The following information is reproduced from the *Annual Report of the Technical Regulator Electricity 2015/16*, produced by the South Australian Department of State Development. Table A.4 presents some safety performance measures from SA Power – a major distribution network operator, and Table A.5 presents indicators from ElectraNet – the major transmission network operator.

Table A.4 Some Key Performance Measures reported by SA Power to the South Australian Office of the Technical Regulator

Safety Management Indicators	2013-14	2014-15	2015-16
Annual cumulative numbers of lost time accidents and near misses involving SA Power Networks personnel (including contractors)	4 Lost Time 705 Near Miss	4 Lost Time 1,236 Near Miss	6 Lost Time 1,479 Near Miss
Hazard logs greater than 30 days old	0	3	0
Number of in progress hazard logs	11	4	0
Actual workplace inspections carried out per annual inspections planned	1,050	1,055	1,055 ¹
Number of shock reports per 1000 km of mains	4.4	5.8	7 ²
Number of damage claims per 1000 km of mains	8.1	4.4	4.5 ³
Number of fire starts per 1000 km of mains	0.89	0.6	0.57
Number of switching incidents	24	30	22
Number of completed emergency plan exercises	2	3	3
Technical Management Indicators			
% meters within tolerance (per planned sample)	97.2	98.2	92.2%
General Information			
Number of requests for underground locations provided per year	59,946	78,460	88,673
Number of revenue metering investigations carried out per year	5,160	5,072	4,534
Audited compliance against internal vegetation clearance procedures and agreements	Completed by GHD in December 2013	Completed by GHD in December 2014	Completed by GHD in December 2015
Number of network access permits requested and number of network access permits issued ⁴	1,684 requested 1,539 issued	1,657 requested 1,524 issued ⁵	1,922 requested 1,692 issued

Source: Department of State Development, *Annual report of the Technical regulator Electricity 2015-16*, pp 59-60.

Note: 1 Estimated only by SA Power Networks

Note 2: $7 = (623/88,819) \times 1000$ where 623 is the number of Shock Reports; 88,819 is the total circuit length of SA Power Networks network used in the calculation

Note 3: $4.5 = (404/88,819) \times 1000 \times 1,000$ where 404 is the number of damage claims (one incident can result in multiple claims)

Note 4: Access Permits are issued for all Requests for Network Access (RNA) & for vegetation clearance work not received via a RNA

Note 5: Associated with the RNA's, or with ad-hoc requests to cut trees by SA Power Networks engaged tree cutters or to dig near SA Power Networks cables

Table A.5 Some Key Performance Indicators reported by ElectraNet to the South Australian Office of the Technical Regulator

Performance Indicator	Performance Measured	Definition of Indicator	2014-15 ^a	2015-16
Substation Routine Task Rate	Volume of planned substation maintenance	Number of Substation Routine Tasks completed	4,104	5,300
Line Routine Task Rate	Planned line maintenance during the period	Number of Line Routine Tasks completed during the reporting period	1,557	1,374
Substation Corrective Task Rate	Unplanned Substation maintenance during the period	Number of Substation Corrective Tasks completed during the reporting period	5,046	7,164
Line Corrective Task Rate	Unplanned Line maintenance during the period	Number of Line Corrective Tasks completed during the reporting period	4,069	4,226
Vegetation Infringements	Vegetation maintenance	Number of reported vegetation infringements unresolved within 7 days during the fire season	0	0
Fire Starts	Line maintenance	Number of fire starts caused by ElectraNet transmission assets.	1	0
Major Plant Failure Events	Events reported under 73(3)(a) of the <i>Electricity (General) Regulations 2012</i>	Number of failures of major plant requiring replacement (eg. HV transformers, circuit breakers, disconnectors, instrument transformers)	9	7
Electric Shock Reports	Safety	Number of shock reports during the period	0	0
Switching Incident Rate	Switching safety	Number of switching incidents per number of switching plans issued	0.1%	0.08%
Lost Time Injuries	Safety	Number of injuries resulting in more than one day lost	0	0
Lost Time Injury Frequency Rate	Safety	Number of injuries resulting in more than one day lost per million hours worked	0.0	0.0
Medical Treatment Injuries	Safety	Number of medical treatment injuries	3	1
Medical Treatment Injury Frequency Rate	Safety	Number of medical treatment injuries per million hours worked	4.31	2.16
Contractor Safety Incidents involving Injury	ElectraNet's contractor safety	Number of reported construction and maintenance contractor safety incidents involving injury	4	5
Emergency Management Plan Exercises	ElectraNet's emergency response preparedness	Number of completed Emergency Management Plan exercises	1	1

Source: Department of State Development, *Annual report of the Technical regulator Electricity 2015-16*, pp 57-68.

^a We amended this year to be 2014-15, based on the results published in *Annual report of the Technical regulator Electricity 2014-15*, p57.