

Response to Submissions

Draft Report: AusNet Services' Wood Pole Management - An assessment of sustainable wood pole safety outcomes

Background

Following the St Patrick's Day fires in March 2018, Energy Safe Victoria (ESV) undertook investigations into wood pole management in the South West region of Victoria.

The second ESV report published in 2019 titled *Powercor Wood Pole Management: An assessment of sustainable wood pole safety outcomes*, focused on an assessment of Powercor's ability to deliver sustainable safety outcomes in the long term.

The report also provided commitment that ESV would conduct the same investigation across all Victorian electricity distribution businesses to ensure that their respective pole management practices deliver sustainable safety outcomes for all Victorians.

The draft report *AusNet Services' Wood Pole Management - An assessment of sustainable wood pole safety outcomes*, continues the series of detailed technical investigations into Victorian electricity distribution businesses' wood pole management by investigating AusNet Services' pole management approach. The report includes:

- objectives of the investigation,
- key findings and their implications, and
- recommendations for future undertakings.

Public submissions

ESV would like to thank those members of the community and organisations who took the time to assess the draft report and submit comments. Any personal information contained in the submissions has been redacted to protect the privacy of individuals.

ESV acknowledges the importance of appropriate pole management in keeping Victorians safe. ESV received five submissions and this document responds to the concerns raised in the submissions.

In summary, the public submissions provided comments and raised concerns categorised below:

Country Fire Authority (CFA)

- encouraged continued review, refinement and improvements to Major Electricity Company (MEC) systems and processes
- acknowledged that AusNet Services have the lowest levels of unassisted pole failures and other Distribution Businesses should be encouraged to achieve these same low levels of failures
- were concerned that reducing the frequency of inspections has the potential to increase unassisted pole failure levels
- suggested for aging wooden poles with the potential for unassisted failure that consideration be given to increasing the frequency of inspection
- supported the recommendations that ESV has placed on AusNet Services

Fire Rescue Victoria (FRV)

- questioned what is best practice in relation to MEC's choice of new pole materials
- questioned what is the inspection regime for the increasing number of aged and deteriorated poles

- would like to understand the causes of fire starts and asset failures
- would like to see the comparison of performance of MECs

Groundline Engineering

- requested clarification of statements and information within the report
- enquired whether ESV had engaged independent engineering knowledge outside of the MECs
- expressed concern that the Powercor pole replacement forecast is inadequate

Individual submission

- expressed a desire for targeting zero fire starts
- is concerned that there is a big wave of end of life poles coming but pole replacement is not matching the curve
- expressed concern that ESV has not taken appropriate action

Kingston and District Power Alliance (KDPA)

- expressed concern that ESV has not taken appropriate action
- believed a breach of the *Electricity Safety Act 1998* (the Act) has occurred with respect to AusNet Services' recently introduced changes to its wood pole management approach
- expressed concern that the report did not consider outcomes of the investigation into the St Patrick's Day fires of 2018

Where substantive matters raised in a submission had no direct relationship to the Draft Report, ESV has not addressed those concerns within this response.

Changes to the report in response to submissions

From the concerns raised, ESV has added the additional context to the report, including:

- Paragraph added below Table 1 on page 7 to explain the rationale behind MEC's use of different materials for poles.
- a footnote to Figure 7 on page 12 to define third (3rd) party cause of pole failures.

Next steps of the investigation

AusNet Services has developed a wood pole management improvement plan to address all recommendations and findings in the final report and submitted it to ESV (Recommendation 1 in the final report). The plan includes clear and measurable milestones for all identified actions that will be monitored through regular reporting to ESV.

Response to matters raised in the submissions

A list of the publicly available submissions on the ESV website can be found in

Appendix A: Submissions received.

ESV has grouped the responses to the public submissions and categorised them as:

1. Matters for clarification relating to scope of report and the inspection regime that was assessed
2. Clarification of the actions taken or to be taken by ESV.
3. Comparison of pole management practices across MECs.
4. Concerns relating to other matters outside the scope of the report.

ESV's response to each of these categories follows. It is important to note that, in responding, ESV is providing clarification regarding the matters raised.

Matters for clarification relating to scope of report and the inspection regime that was assessed

Observations and concerns were expressed based on individual interpretation of information provided in the report. The following aspects have been further explained below:

- The scope of the investigation, inclusions and exclusions as decided by ESV
- The inspection regime that is in place on the AusNet Services network

Clarification of the scope of the investigation

The submissions provided feedback requesting the inclusion of additional information relating to analysis of the relationship of pole condition and bushfire risk or causation.

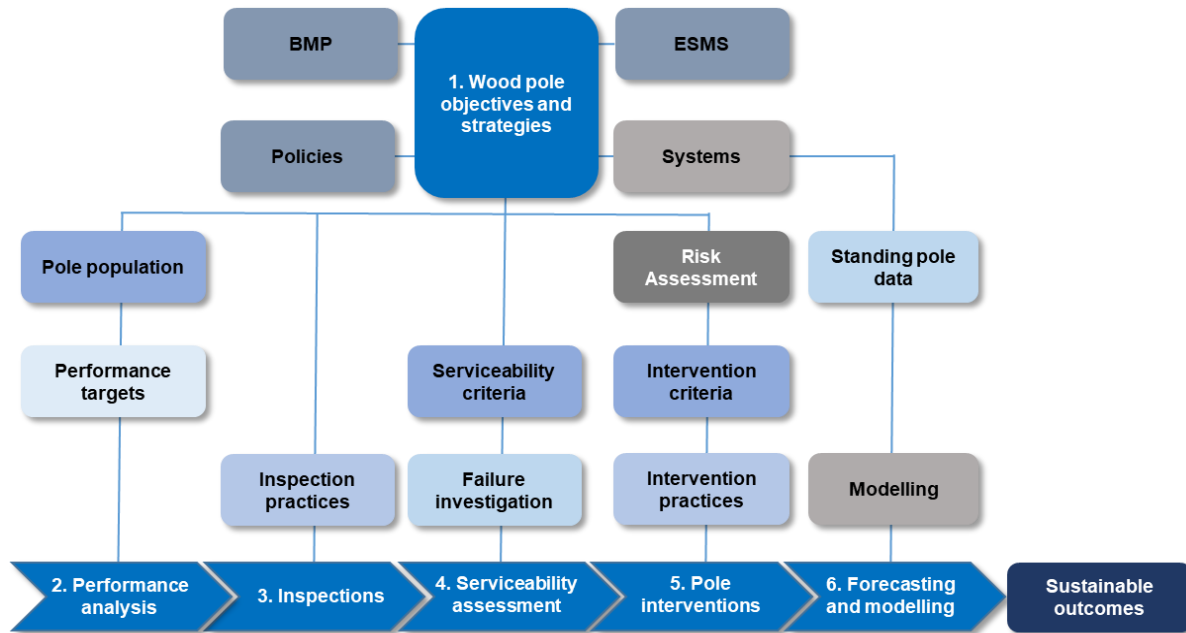
A pole failure that leads to a fire or bushfire is a rare event compared to a failure of a pole that has a lesser consequence. ESV monitors the total volume of pole failures that occur in the supply area of each MEC and consider this to be a lagging indicator of the effectiveness of pole management practices. ESV also receives individual reports for pole failure events that result in a fire start and the information obtained then informs the level of investigation or response undertaken.

The focus of ESV's pole investigations have been to assess the capability of MEC pole management practices to achieve safe outcomes, by way of pole failure volumes, and maintain or improve these into the future. Analysis of the relationship of pole condition and failure causation or risk of bushfires was not included in the scope of this investigation of assessing pole management practices.

ESV has committed to developing performance indicators relating to wood pole management to be included in the ESV annual electrical safety performance report. This will include establishing lead indicators to improve ESV's monitoring of the performance of pole management practices.

ESV has implemented the scope for the pole management investigations through a framework that looks at the pole management regime in its entirety, as per **Error! Reference source not found.** The framework must take into account all relevant aspects including wood pole objectives and strategies, performance analysis, inspection practices, serviceability criteria, risk assessment, pole interventions, and forecasting and modelling.

Figure 1: ESV's wood pole management assessment framework



Definitions of the terms used in per **Error! Reference source not found..**

BFM	Bushfire Mitigation Management Plan, as required by the Electricity Safety Act 1998, describes preventative strategies, procedures and processes within Asset Management System used to mitigate the risk of fire ignition associated with supply networks.
ESMS	Electricity Safety Management Scheme as required under the Electricity Safety Act 1998 and Electricity Safety (Management) Regulations 2019 for the provision of an asset management system to safely design, construct, operate, maintain and de-commission supply networks.

Clarification of the pole inspection regime

A number of submissions raised questions over the pole inspection regime for the increasing number of aged and deteriorated poles.

A regulatory requirement exists for each MEC to inspect poles in Hazardous and Low Bushfire Risk Areas (HBRA / LBRA) at intervals not exceeding 37 months and 61 months respectively from the date of the previous inspection¹.

The established inspection regime at AusNet Services also includes an increased pole inspection frequency for poles with a measured condition that indicates the pole is deteriorated or approaching its end of life cycle, e.g. 'limited life poles'.

Further to the delivery of an inspection plan that meets the requirements of the Bush Fire Mitigation regulations, ESV's report presented commentary and findings related to a recent change by AusNet Services to the inspection practice and frequency. Specifically, AusNet Services presented ESV with the analysis and materials that supported their decision to increase the timeframe between inspections and testing of poles in HBRA. This finding is directly related to one of the recommendations in the report which is discussed in the next section.

During Bushfire mitigation audits conducted prior to the summer period each year, ESV checks evidence to confirm AusNet Services is complying with the legislative obligations for pole inspections.

¹ Regulation 7(1)(i) of the Electricity Safety (Bushfire Mitigation) Regulations 2013

Actions taken or to be taken by ESV

ESV has identified MEC pole management practices as one of the compliance and enforcement priorities for the 2021/22 financial year². This priority includes the delivery of pole management practice investigations and ensuring MECs comply with their documented practices and commitments. Pole management practices have been prioritised by ESV in recognition of the significant consequences for people and property, which can occur from fires or bushfires that can ignite as a result of a pole failure.

In the submissions questions and concerns were raised regarding the actions that ESV has taken or will take to confirm the MECs are managing poles appropriately. Further explanation in response to the following concerns is provided below:

- questioning whether ESV has taken appropriate action
- interpretation of the content of the report as sufficient to determine that a breach of the Act has occurred
- concerns that reducing the frequency of inspections has the potential to increase unassisted pole failures

AusNet Services compliance with the Electricity Safety Act (the Act)

In accordance with recommendation four of the report, ESV requires that AusNet Services now demonstrate to ESV how its current asset inspection approach in HBRA minimises the risk of starting a bushfire as required by the general duties under section 98 of the Act.

Importantly, this recommendation extends beyond the scope of poles to include all attached asset classes that are impacted by the inspection regime, for example conductor, crossarms, insulators, fuses. If AusNet Services fails to demonstrate it meets its general duties, with particular focus on the link between the frequency of inspections and the potential for asset failures, ESV will take enforcement action.

The ESV investigation findings and recommendations do not conclude that AusNet Services has breached the Act as a result of recently changing the frequency of its full ground-based inspection regime in HBRA, or that ESV take enforcement action. Recommendation four of the report places accountability on AusNet Services to promptly undertake further work to demonstrate to ESV that its inspection regime does comply with its general duty as required under section 98 of the Act.

ESV future work to clarify its expectations for demonstrating compliance with the Act

The electricity safety regime for pole management is not prescriptive. It is a principle-based, outcome focused regime, and as such application of the legislation requires supporting information on what compliance looks like. This is where ESV needs to expand on and further explain its expectations in policy and guideline documents.

During this investigation ESV identified an opportunity to update its [Energy Infrastructure Safety Management Policy](#) document, which explains how ESV interprets and applies the electricity safety management regime. This update will further clarify what is intended or required to demonstrate compliance with legislative requirements.

Updating ESV's policy will minimise interpretability, and reaffirm more accurately the compliance requirements of duty holders. Communication of the policy update to MECs will provide greater understanding of ESV's position. This in no way shifts accountability to ESV; rather it places greater accountability on the MEC to put forward its electricity safety management scheme and demonstrate its case to ESV, for ESV to assess.

² https://esv.vic.gov.au/about-esv/energy_regulatory_framework/compliance-and-enforcement/

Comparison of pole management practices across MECs

Submissions also made comment and observations of:

- would like to see the comparison of performance of MECs
- encouraged continued review, refinement and improvements to MEC systems and processes
- best practices of the MECs in relation to choice of pole material

Progressive improvement gained from conducting investigation into each MEC

The draft public report contained a small amount of comparative analysis of the Victorian MECs relating to pole failure performance. This analysis contributed to one of the conclusions of the report; that AusNet Services' wood pole management system has historically achieved, and is currently achieving, the lowest unassisted wood pole failure rate of all Victorian MECs. This level of performance involves a low level of annual unassisted pole failures, on average between three and four per year, and less than one unassisted pole failure per year resulting in any charring or burn pattern at ground level.

As ESV progresses through the investigation of pole management practices across the MECs a more complete picture of the range of systems and processes in use, and their effectiveness, is being collected. As an example the experience gained from the investigation of Powercor was used to inform the questions and judgements that AusNet Services were subject to, by way of comparison of pole management practices in detail.

The identification of findings from the AusNet Services investigation, which informed the conclusions and recommendations, have benefited from the comparison to practices seen to be effective elsewhere. Similarly, the investigation of United Energy and Jemena will benefit from this also.

ESV acknowledges that the understanding gained from the investigation into AusNet Services has also assisted in ongoing action being undertaken by ESV to improve the performance and sustainability of Powercor's pole management practices.

Best practices of the MECs in relation to choice of pole material

The MEC's approach with regard to the selection of pole materials is to consider the lifecycle of the pole and to determine the best product to suit the MECs goals and objectives.

The materials of wood, concrete and steel are in use as distribution utility poles in high volumes across Victoria. More recently, poles manufactured from fibre glass or fibre glass reinforced concrete are being trialled or approved for use. Each type of material has various benefits and challenges.

Wood is commonly assessed as providing the lowest total lifecycle cost for a utility pole when considering its performance, its insulating properties, low up front cost and availability. As wood poles have been in use since the start of electrification, over 100 years ago, there is a level of knowledge and experience with the product and extensive data on its performance and maintenance requirements.

Concrete and steel poles are generally more expensive than wood poles and being a conductive material, this presents safety risk when there are electrical faults. Concrete pole use appears to be increasing across Victoria as local competition drives down costs and wood becomes scarcer. Concrete poles are also being nominated for use in particular scenarios where their performance will be comparable or better than wood poles, such as in areas of high termite activity.

The viability of widespread application of newer type of poles, such as fibre glass and fibre glass reinforced poles are currently affected by cost and confidence in the performance of the materials across their life. These alternatives would benefit from improved data with respect to potential failure modes and better understanding of their performance. As part of ESV continued monitoring of pole management by MECs, this will include analysis the volumes of different pole material installed and reporting on pole performance by pole material.

Concerns relating to other matters

Submissions also made comment and observations of:

- were concerned that the report did not consider outcomes of the investigation into the St Patrick's Day fires of 2018
- ESV's use of independent experts
- Powercor pole replacement rate

Consideration of the outcomes of the investigation into the St Patrick's Day fires of 2018

The Powercor pole management practices investigation in 2019 incorporated the experience gained, at the time, from the investigations of the St. Patrick's Day fires. As elaborated in the section on comparative analysis of the performance and practices of the MECs, the investigation into pole management practices at AusNet Services has benefitted from the knowledge of Powercor's practices.

In line with feedback provided following the Powercor pole management practices investigation, the experience gained by ESV staff was the result of investigation of the incidents and inspection of the assets within the area. Response to the St Patrick's Day fires included ESV staff attendance at the incident site the day after the fire, when it was safe to do so.

An investigation of the incident commenced immediately and included;

- ESV inspecting more than 1,200 poles in the area (including Sonic Topography scanning of selected poles), and
- Forensic testing and engineering analysis of pole remains from the fire by independent experts engaged by ESV.

ESV's use of independent experts

One submission questioned whether ESV engages or utilises independent industry and engineering experts, particularly those with structural / mechanical knowledge.

ESV has, and continues to engage with and utilise a wide range of independent experts in many areas such as:

- Sustainable asset and pole management practices
- Engineering, including those with structural / mechanical knowledge
- Forensic testing
- Analysis of timber
- Traditional and non-destructive pole inspection techniques, and
- The economic regime.

These independent experts, engaged where appropriate, review and assess the efficacy of MEC practices and performance, including wood pole management practices. They are used alongside ESV's internal engineering resources to ensure that any ESV improvement recommendations, when effectively implemented, should deliver a sustainable safety outcome for the community.

ESV follows the procurement requirements of the Victorian Public Sector when selecting and appointing independent expert resources

Powercor pole replacement rate

Concerns raised about the adequacy of the Powercor pole replacement rate are outside of the scope of the AusNet Services investigation report. However, in the AusNet Services report ESV has supported the type of modelling that is used to analyse the effect of the rate of intervention on the wood pole population over a long term period, and to consider the impact of this on management systems, practices, and decisions. From the report;

Assessment and modelling of the longer-term implications of systems and practices on key asset classes such as wood poles, is reflective of the type of asset management approaches that ESV recommends should be undertaken by MECs.

In conclusion

ESV values the input and views of the community and organisations, and seeks to engage through the release of the ESV draft report written for public consultation. ESV has endeavoured to clearly and transparently provide information and provide a greater understanding of this technical area of management of the electricity supply network.

The submissions to ESV's draft report, and submissions on previous reports, has led ESV to amend the report. ESV's role in ensuring electrical safety is only enhanced by engagement with our stakeholders, and the community.

Appendix A: Submissions received

- Response to ESV Draft Report – Country Fire Authority (CFA)
- Response to ESV Draft Report – Fire Rescue Victoria (FRV)
- Response to ESV Draft Report – Individual submission
- Response to ESV Draft Report – Kingston and District Power Alliance (KDPA)
- Response to ESV Draft Report – Groundline Engineering