

Response to Submissions

Draft Report: Powercor 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 the first of two investigations into the state of wooden power poles in the South West region of Victoria.

These fires resulted in significant loss of property and stock, and trauma to the community. A fire at Garvoc, referred to as The Sisters fire, was caused by the failure of a wooden power pole within Powercor Australia's (Powercor) network. ESV recognises that the safety of network distribution assets including power poles are vital community safety issues. ESV will continue to work with the community to ensure ongoing safe and effective management of assets by distribution businesses.

The findings of the first part of this investigation were released after public consultation in a report titled '*Final Report: The Condition of Power Poles in South West Victoria*' on 29 July 2019. ESV concluded in this report that there was no immediate systemic risk of wood pole failures in the South West region at that time.

The report also gave a commitment that ESV would do further work over the following six months to determine whether Powercor's asset management practice would deliver sustainable safety outcomes in the long term. The included an investigation into the efficacy of Powercor's pole condition assessment process to provide a comprehensive, publicly available report that addresses the above matters before the end of 2019.

This commitment was met with the release of the Public Technical Report titled '*Draft Report: Powercor Wood Pole Management - An assessment of sustainable wood pole safety outcomes*' on 23 December 2019 for public consultation. ESV determined that the electricity distribution business Powercor had to improve its management regime for wooden power poles to ensure community safety over the long term.

ESV invited public feedback on draft report and received two submissions. One wished to remain confidential, however this document specifically addresses the concerns raised by those contributors.

A link to the publicly available submission can be found in Appendix A. ESV would like to thank those members of the community who took the time to assess the Draft Report and submit their comments.

ESV continues to focus on engaging with the community to reach shared and effective solutions that take into account people's experiences.

Amendments to the Draft Report

ESV has made changes to the wording of Recommendation 1 of the December 2019 Draft Report to provide greater clarity of ESV's role and expectations of the Powercor wood pole management improvement plan.

Response to other matters raised in the submissions

ESV has grouped these responses and categorised them as:

1. Matters for clarification and regulatory process
2. Concerns relating to the regulatory regime
3. Next phase – implementation of Powercor’s wood pole management improvement plan.

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 and regulatory process

Comments were made regarding the timing and process of the actions ESV took following the St Patrick’s Day fires of 2018, and whether they were the direct result of community advocacy and campaigning.

Other observations related to:

- the level of local community engagement
- certainty of pole replacement numbers to provide assurance to the community
- the Powercor review of the draft report for errors of fact
- ESV’s use of independent experts.

ESV’s response to matters for clarification and regulatory process

ESV’s response to the Garvoc Fire

In the response to submissions received on its July 2019 report titled ‘*Final Report: The Condition of Power Poles in South West Victoria*’, ESV stated that its staff attended the incident site the day after the Garvoc Fire and immediately commenced investigation.

The forensic testing of the remains of pole 4 of the Sparrow line was conducted by independent experts engaged by ESV. Powercor representatives were allowed to witness the dissection of the pole butt remains in preparation for testing; however no parties other than the independent tester were permitted by the testing agency to be present at the laboratory during testing due to safety and access restriction concerns.

This investigation continued in the months after the fires; it included forensic testing, inspections and engineering analysis, and led to ESV inspection of:

- 202 poles in the Terang area / South West region in September 2018, incorporating “*poles on the same feeder or in the same area as Pole 4*”, .e.g. Sparrow 16 and many poles in the immediate area including along Sisters – Garvoc Rd, Occupation Lane and Ellerslie – Sisters Rd, and
- another 1,000 poles in the region in early 2019 and, using the hammer test, selected over 100 poles (20 of which were selected for not containing a hollow using the hammer test) for further testing with Sonic Topography scanning technology.

ESV’s community engagement and consultation

ESV has openly engaged and visited with key community stakeholders throughout its investigation. ESV has attended Powercor community engagement sessions, and presented at South West Community Safety Committee meetings.

ESV is committed to clearly communicating to the community that the Victorian energy network is fit-for-purpose and safe. As such, it publishes reports of its investigations on its website. Investigations are undertaken if ESV is concerned that there are serious network safety risks or breaches of legislative

requirements, which have been brought to its attention by its staff, standard regulatory processes, or reports of non-compliance made by the community. When a report invites submissions, ESV publishes them in accordance with its regulatory policies and practices, consistent with the public consultation processes used by many regulators.

ESV is actively working to continue to improve its engagement and consultation processes to work in an open, transparent and consultative manner with its key stakeholders, including the community.

Certainty of pole replacement numbers to provide assurance for the community

ESV is committed to ensuring that the sustainability of Powercor's wood pole management is improved and community assurance is restored. To achieve this, ESV requires a number of improvements to be made as per the report recommendations (through Powercor's thorough implementation of its wood pole management improvement plan) before the sustainable forward pole replacement numbers can be communicated with certainty.

In the interim, ESV will monitor the number of wooden poles Powercor identifies for intervention and actions against its current documented 2020 forecast to ensure replacement rates are increasing.

Powercor review of the draft report for errors of fact

As stated on page 15 of the December 2019 Draft Report, "The findings of this review have been discussed with Powercor. Powercor was provided with a draft copy of the technical review report to comment on errors of fact. ESV has made corrections to the report based upon Powercor's feedback, as it deemed necessary."

To be clear, no amendments were made to any of ESV's analysis, conclusions, findings or recommendations in the draft report based on Powercor's feedback. The only corrections ESV made to the draft report from Powercor's review related to where existing Powercor documentation had been misquoted or paraphrased and wording was amended for accuracy.

ESV's use of independent experts

One submission concluded that ESV does not utilise or leverage from independent industry experts, particularly for the independent assessment of regulatory improvement plans.

ESV has utilised independent experts in areas such as, forensic testing, traditional and non-destructive inspections, and analysis of timber.

To assess sustainability ESV engaged independent industry experts in sustainable asset management practices, including the economic regime. These same independent experts will review and assess the efficacy of the Powercor wood pole management improvement plan alongside ESV's internal technical engineering resources to ensure that the plan adequately addresses the ESV recommendations and that, when fully implemented, it will deliver a sustainable safety outcome for the community.

How sound wood depth is correlated to strength, durability and load/safety factor

The design of wood poles allows for loss of strength over time. Poles will lose significant strength before they reach the point at which they are no longer serviceable.

Hardwood poles are available in a number of different timber species, each species having an associated strength group and durability class. It is the strength group of the timber species that determines the size (in particular the diameter) of a new pole that is required to achieve the high initial strength. For example, a pole that must perform to a specified rating of 8 kilo newton (kN) will require a minimum initial strength of 20 kN. A new timber 8 kN pole will require a lower initial diameter when sourced from a strength group 1 (higher strength) timber species, when compared to a strength group 3 timber.

The timber durability class of a pole reflects its inherent resistance to decay and insect attack and this affects the rate of deterioration over time. The residual capacity of wood poles must be determined during each inspection cycle and the timber durability class is referenced to indicate the potential loss of capacity before

the next inspection. The majority of a pole's strength lies in the annulus of outer wood surrounding the pole and the measurement of the thickness of this annulus is referred to as the sound wood.

As the pole deteriorates (internally and externally) this reduces the annulus of outer wood and the residual strength of the pole is assessed by measurement of the remaining sound wood. The threshold that Powercor applies to this sound wood measurement during inspection varies with consideration to the durability and strength class of the timber species. Durability determines the loss of strength of the pole that can be tolerated between inspections.

The use of remaining sound wood as a measure of residual strength was established prior to the privatisation of the industry and subsequently referred to as a Factor of Safety (also referred to as a safety margin) for each serviceability state. The sound wood thresholds relating to these different states of serviceability were designed to ensure a pole's residual capacity will remain higher than the poles rating, and therefore higher than any allowed loading on the pole.

ESV, as per Recommendation 7 of its December 2019 Draft Report, notes that the development and implementation of a Serviceability Index (SI)-based serviceability assessment methodology is key to improving Powercor's current system. This approach aligns with AS/NZS 7000:2016 and will introduce a requirement for understanding the actual load on the pole. It is reasonable to expect that this change will lead to a more accurate representation of the likelihood of pole failure over time and more effective management of this asset.

Concerns relating to the regulatory regime

Submissions referenced aspects of the Victorian Bushfire Royal Commission, the progress report on the implementation of the Independent Review of Victoria's Electricity and Gas Network Safety Framework (Grimes Review), and on the *Electricity Safety Act 1998* relating to ESV increasing its technical capacity and independence to hold electricity distribution businesses to account.

Observations were made around the regulatory regime's effectiveness, in particular ESV's regulatory powers and remit including:

- transparency of distribution business Electricity Safety Management Schemes (ESMS) and procedural documents
- the timing of ESV assessing the sustainability of the distribution businesses' wood pole management
- compliance with Australian Standards.

ESV's response to concerns relating to the regulatory regime

Progress on the implementation of the Grimes Review

Comment was made regarding the implementation of all Grimes Review recommendations. The final report of the review made 43 recommendations. The Government Response to the Grimes Review was released in August 2018 and supported 42 of the 43 recommendations either in full or in principle. Of the supported recommendations, 22 were directed to ESV. ESV is progressing the implementation of the recommendations within its remit and is working closely with the Department of Environment, Land, Water and Planning (DELWP) to acquit the actions. ESV's website is updated with relevant actions and ESV provides input to the Implementation Updates released by DELWP on its website and the Engage Victoria website.

The Regulator's capacity and resources

Since 2009 ESV's resources directed to electricity infrastructure and data and analytics has grown sevenfold (from four to 30 staff – an increase of 750% since 2009), with an annual budget increase in excess of \$5 million.

In 2020 ESV is continuing to expand its capability, particularly with regard to asset management practice and bushfire mitigation of electricity networks.

The safety regime

Victoria's electricity safety framework (Act and regulations) is a process-based regulatory regime that utilises a mix of principle, performance and outcome based regulatory approaches.

The nature of this regime reflects that the safety risks are complex, geographically diverse, have significant and widely varying consequences), and require individually tailored solutions by the electricity businesses reflecting the different network designs and environments. Whilst network businesses are generally similar in engineering principles for transmitting electricity, they are vastly different in other aspects such as network design and operating environments, geography and customer base that can affect their network safety performance. For these reasons prescriptive approaches cannot be utilised for all aspects of safety management.

Deciding the balance of prescription and outcome in legislation is a matter of policy and is determined by Government. Policy settings ultimately reflect the balance adopted between economic and safety considerations, incentives and the allocation of risks between the state and industry.

Under the existing regulatory regime, it's the electricity business that must submit an Electricity Safety Management Scheme (ESMS) and Bushfire Mitigation Plan (BMP) describing how it meets its duty under the Electricity Safety Act 1998 (the Act) to minimise risk "as far as practicable" However, they do not and cannot eliminate risk entirely.

ESV is able to prosecute for breach of general duties, and for non-compliance with an accepted ESMS or BMP.

Transparency of distribution business ESMS and procedural documents

Victoria's Electricity safety legislation does not require a MEC to publish its ESMS and internal procedural documents; however the legislation does require a MEC to publish its BMP.

ESV assessing the sustainability of the distribution businesses wood pole management

ESV's legislative remit addresses the management of electrical safety risks in the immediate to medium term, i.e. up to the five year regulatory period. Historically the longer term, life-cycle assessment (10, 20, 40 years) has been considered by the Australian Economic Regulator (AER). However ESV has foreseen the need to assess the longer term itself, as articulated in the 2015/16 and subsequent electrical safety performance reports on Victorian electricity networks, ESV is actively undertaking this important work.

Compliance with Australian Standards

Like most regimes, Victoria's Electricity safety legislation does not require a MEC to strictly comply with all Australian Standards. Additionally, relevant Australian Standards are not applied retrospectively (i.e. they cannot be applied to products or systems in place long before the standard was published). The relevant regulations require that MECs list the published technical standards that they comply with relating to design, construction, commissioning, installation, operation, maintenance and decommissioning.

Where a MEC does not to comply with a particular published technical standard, it must:

- explain in its ESMS why this is the case, and
- ensure a level of safety in relation to those activities that is at least equal to, or greater than, the level of safety that would be achieved by compliance with that standard.

Next phase – implementation of Powercor's wood pole management improvement plan

Observations and concerns were expressed regarding the formulation of the Powercor wood pole management improvement plan, ESV's scrutiny and oversight of its efficacy and implementation, and that

the final outcome is not yet known, e.g. the sustainable forward pole replacement numbers to deliver assurance to the community.

ESV's response

ESV has amended Recommendation 1 of the December 2019 Draft Report to provide greater clarity of ESV's role in testing the efficacy of the Powercor wood pole management improvement plan, and its expectations of the implementation and outcomes of the Powercor wood pole management improvement plan.

ESV will utilise internal and independent external expertise to scrutinise and assess the merits of the submitted plan. ESV will accept the plan when it is satisfied that the plan, once fully implemented, will deliver sustainable safety outcomes for the community.

Once the plan has been accepted by ESV, the plan commitments must be incorporated into an updated and publicly available Powercor BMP for ESV to monitor and enforce compliance.

ESV will revise the reporting guidelines to include more specific performance indicators relating to wood pole management of all MECs in the quarterly and annual performance reporting. This will include the establishment of leading and lagging indicators and clarification for the classification of assisted and unassisted pole failures, allowing ESV to monitor wood pole performance over time.

ESV will publish quarterly reports on the implementation of the Powercor wood pole management improvement plan, and report annually on the wood pole management of all MECs.

In conclusion

There is no doubt that local knowledge is important in optimising community safety in the business of electricity distribution.

Through the release of the ESV Draft Report written for public consultation, and by providing the supporting Detailed Technical Report containing more granular and complex information, ESV has endeavoured to transparently provide information as clearly as possible, and hopefully, provide a greater understanding of this technical area.

The submissions to ESV's December 2019 Draft Report on this and previous reports have led ESV to amend the report and are greatly appreciated. ESV's role in ensuring electrical safety is only enhanced by engagement with all our stakeholders, especially the community.

Appendix A: Submissions received

- [ESV submission Feb 2020 – J Porter](#)
- Confidential submission