



EnergyAustralia

LIGHT THE WAY

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Dear Mr Girardi

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DELWP Voltage Management in Distribution Networks

EnergyAustralia is one of Australia's largest energy companies with around 2.4 million electricity and gas accounts in NSW, Victoria, Queensland, South Australia, and the Australian Capital Territory, of which around 22k customers are supported under our hardship program (EnergyAssist). EnergyAustralia owns, contracts, and operates a diversified energy generation portfolio that includes coal, gas, battery storage, demand response, solar, and wind assets. Combined, these assets comprise 4,500MW of generation capacity.

EnergyAustralia appreciates the opportunity to participate in the DELWP review of Voltage Management in Distribution Networks. As outlined in the consultation paper, adherence to voltage standards is vital to improve the longevity of appliances and limit the risk of increased consumption/costs to consumers. We strongly agree with the consultation paper's view that compliance with voltage standards has increased importance as we move to an abundance of customer side Demand Energy Resources (DER) and demand response capable technology that will be fundamental in our shift to a low carbon energy system.

We believe that compliance is the appropriate form for promoting improvement in the delivery of voltage standards to customers. Distribution networks have many incentive schemes available for providing their service efficiently or at a high level, and - based on the data provided in the consultation paper - this has not resulted in the adherence to voltage standards that is desired by the DELWP, or what is expected by a customer base routinely absorbing higher network charges.

Compliance is the preferable form of control as the detriment for not ensuring voltage within the appropriate range is something that impacts customers directly. While there are protections in Victoria¹, they are only applicable when the voltage damage is extreme, either burn/brown out of appliances, or - worse case – damage to the residence. It seems fair that not adhering to the appropriate voltage range should result in some form of direct compensation to customers, as this non-compliance has likely resulted in a reduction in the life span of their appliances and/or increased consumption resulting in higher charges.

¹ ESC Voltage Variation Compensation

The primary risk of a compliance regime is that distribution networks have an almost completed cost recovery framework, and this could see any compensation paid simply recovered in a subsequent AER determination. Therefore, we suggest the DELWP consider that any compliance regime's compensation costs to be unrecoverable, as we believe the consideration of impacts on actual profit margins will drive a more stringent adherence to voltage standards.

Improved oversight of network voltage is another necessary action to substantiate distribution network compliance with voltage standards, to provide the competitive market insight into areas of the network that would benefit from non-network investment/ solutions, and provide clarity to customers about the standard they are receiving (either impacting them currently or for future investment decisions).

The consultation paper's *Figure 13*, outlines the capex for Victoria distribution networks in their current determinations. This significant expenditure seems of particular contrast to the reported voltage levels advised in the consultation paper, in which, reported voltage standards have been outside of allowable limits prior to any influx of DER being installed on the network.

Figure 13: AER approved network capital expenditure for DER integration

Network	DER capex (\$M)	% of total approved net capex	Initiatives
AusNet Services	58.9	4.3	Voltage compliance (existing voltage issues), hosting capacity (future voltage issues), customer supply compliance, DER ICT
CitiPower	44.2	7.5	Solar enablement (voltage and capacity issues), digital network incl. DER management systems (DERMS), Dynamic Voltage Management System
Jemena	30.4	4.8	Enabling DER through improved network management and optimised asset investment
Powercor	63.7	3.1	Solar enablement (voltage and capacity issues), digital network incl. DERMS, Dynamic Voltage Management System
United Energy	39.9	4.4	Solar enablement (voltage and capacity issues), digital network incl. DERMS

EnergyAustralia believes there should be more onus on networks to substantiate how their investment has made any tangible improvements to the voltage standards experienced by customers. The reporting required should break down adherence in a granular level, as presenting compliance as an average can dilute the performance of networks as experienced by customers; a customer may be in an area where they receive compliance with voltage standards if averaged out across a year, but if the voltage standards exceed the appropriate ranges periodically, this will be more important to customers or entities considering investing in the area.

If you would like to discuss this submission, please contact me on 03 9060 1361 or
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Regards

Travis Worsteling

Regulatory Affairs Lead

- Q1. How have current distributor voltage reporting requirements been useful since their introduction? How could these requirements be updated to provide more meaningful data for consumers and useful information to support public transparency?*

We have not identified any benefit from the reporting requirements for other market participants, as there is not enough access provided for this information to be used in investment decisions. However, it is clear from the consultation paper that it is useful information, if for nothing more, it has provided evidence that is being used in this process/ policy decisions.

- Q2. Can third-parties who wish to provide non-network solutions (such as neighbourhood batteries and electric vehicle chargers) currently access voltage data to support their needs? Is there other data and information from distributors that could cover this need? Are there any privacy issues associated with sharing this data and if so, how can they be managed?*

Some distribution businesses may have quite sophisticated metering and measuring equipment on their substations and transformers that would be extremely useful for third parties establishing a business case for provision of non-network solutions.

Third parties/ market participants cannot access the voltage data from the network to support their business decisions. There are options available to third parties instead of relying on network data; however, as Victoria has full exposure of smart metering, it is far more efficient for networks to provide the data.

For improved investment decisions, granular reporting of network voltage data would be useful. It does not need to be provided immediately, and as long as it is available upon request, and in a format that is easily accessible, we do not believe there is a need for it to be real time data.

- Q3. Do you have any comments about the analysis presented on voltage levels in Victoria's distribution networks? What further evidence or investigations should be considered to understand the voltage in Victoria's distribution networks?*

The analysis of the data was insightful, it was particularly interesting that there was not a sizable increase in voltage issues with the rapid uptake of solar in recent times; whether this was because networks began investing in improving voltage standards and this coincided with the increase in DER, or because the networks have always had voltage issues, is up for debate.

It would be useful if the analysis were more nuanced and went beyond average voltages, as impacts to the network are identifiable on a more granular level than is represented in averages. For example, identify the location, frequency, and period, voltage was outside the allowable ranges will provide a better indication as to where there are issues in the network and whether investment is needed.

- Q4. How could regulatory arrangements for voltage management be enhanced to accommodate high levels of DER and new technologies such as electric vehicles and batteries and deliver better value for consumers?*

Distribution networks have been provided guidance by the AER for investing in providing greater service for DER, these guidelines and methodologies were produced as requirement of allowing distribution networks to charge customers for export services². With this guidance, distribution networks are able to develop the appropriate substantiation to provide to the AER to justify their investment in providing increased or improving their network's ability to host DER.

We believe that there is no further need for distribution networks to be provided incentive for adhering to voltage standards, as there are many mechanisms that either reward efficient or improved operation of the

² AEMC Access, pricing and incentive arrangements for distributed energy resources

network and many options for networks to substantiate the need for further investment to improve the standards. Therefore, voltage standards should be treated under a compliance regime. As this is such a fundamental requirement of providing their service to customers, it should be a compliance burden that is not recoverable under any subsequent AER determinations; customers should be compensated for the poor service, and this should not then be directly recouped.

Q5. What levers would support greater accountability for distribution businesses to deliver investments for network voltage?

As above.

Q6. What is the role of energy users in providing services to manage network voltages and how can others, such as aggregators, operationalise this? What opportunities are there to ensure energy users and others are fairly compensated for delivering network voltage support?

Providing incentives for energy users is the best way to achieve a positive reaction, this could include providing no network charge for consuming during period of excess solar, or other consumption/generation that would reduce or improve voltage variance on the network. This could be achieved in several ways, including time-of-use tariffs, and payment to VPPs for responding to a signal from the distribution business.

Q7. Do you agree with how the impacts of undervoltage and overvoltage have been characterised? What further impacts should be considered?

EnergyAustralia has no issues with the way the impacts of undervoltage and overvoltage have been characterised.

Q8. What further evidence and studies are required to better understand the impacts of voltage on consumers, appliances, and DER?

It would be useful to understand how variance from voltage standards impacts the life span and effectiveness of customer's appliances. If the DELWP were to consider a compliance regime that resulted in compensation for customers impacted by voltage outside the standards, it would be worthwhile to have some alignment with the actual impacts of this divergence.

Further investigation into the impacts of voltage outside the acceptable ranges would also provide more insight into the need for greater oversight, e.g. the costs of providing an improved service and the potential compensation for poor service should be compared against the direct impact, if no change were to occur and the cost imposed on customers (replaced assets, etc) was less then is it justified to consider changes to the framework?

Q9. Do the current regulatory arrangements adequately protect consumers from the impacts of undervoltage and overvoltage? If no, what improvements are required?

Many consumers have been suffering the impacts of overvoltage for a considerable period. Improved reporting is a good first step taken by the ESC, further improvements would be obtained by ensuring customers receive compensation from the networks for any poor performance; as previously discussed, this should not be able to be recouped in a subsequent AER determination.

Q10. How can the objective of voltage management which maximises consumer benefits in the high DER future be balanced with the need to ensure network investment is prudent and efficient?

Addressed in Q4.

Q11. What steps and strategies could help to maximise voltage compliance and deliver value for consumers?

EnergyAustralia believe a combination of the following steps will help maximise voltage compliance and deliver value for customers; increased reporting, at a more granular level (transformer or node at five-minute intervals), accessible to trusted partners (market participants), and a compliance regime that compensates customers when networks do not provide voltage within the required limits.

Q12. What are your views on the risks and benefits of going beyond compliance? What other risks and benefits should be considered?

As discussed previously, networks have incentives for prudent investment in their networks and any risk with an improved compensation framework would be addressed by ensuring the losses are unrecoverable.

*Q13. Is pursuing policy and regulatory reform to improve voltage management beyond compliance a worthwhile exercise? If yes, which options in **Error! Reference source not found.** are most worthwhile pursuing further that have a low potential to increase consumer electricity bills from upgrading the network? What other options which should be considered?*

EnergyAustralia believes regulatory targets coupled with enhanced regulatory pressure are the appropriate avenues to promote improved voltage management beyond compliance.