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8 August 2022

Katie Brown  
Director, Energy Strategy  
Department of Environment, Land, Water and Planning  
8 Nicholson Street East Melbourne  
Melbourne Victoria 3000

Dear Ms Brown,

## **AER Submission – Voltage Management in Distribution Networks consultation paper**

The Australian Energy Regulator (AER) welcomes the opportunity to comment on the Victoria Department of Environment, Land, Water and Planning's (DELWP's) consultation paper regarding the management of voltage in distribution networks in support of the recently released Victorian Government 'Harnessing Victoria's Distributed Energy Resources' paper.

We appreciate the issues raised by DELWP – in particular, that:

- Voltage management and consumer energy resources (CER)<sup>1</sup> integration are closely linked, with effective CER integration often involving voltage management; and
- The potential impacts of voltage management on broader consumer outcomes including billing, equipment life and reliability.

We also acknowledge and support the steps DELWP is taking to engage closely with other key stakeholders, including DNSPs, energy retailers, aggregators, technology providers, consumer and community organisations in addition to researchers. The AER supports an approach that is transparent and adequately identifies the costs, risks and benefits associated with potential changes to the jurisdictional regulatory arrangements. This is essential in ensuring consumers are adequately protected and not paying more than they need to for safe and reliable access to electricity.

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<sup>1</sup> We note that Energy Consumers Australia (ECA) have been strong advocates for a shift in language to better reflect this dynamic for consumers. In response, the Energy Security Board and AER have been seeking to shift to the use of 'CER' over 'DER' where appropriate.

The AER recognises the opportunities and challenges posed by integrating CER into the power system, and the current streams of work underway to ensure consumers benefit from this transition. In particular we note the following:

- **Energy Security Board DER implementation plan including AER work on Dynamic operating envelopes**
  - The AER is leading the dynamic operating envelopes (DOE) workstream of the Energy Security Board's (ESB) DER Implementation Plan and is currently developing an issues paper for stakeholder consultation.
  - The establishment of DOEs has important implications for customers and the role of the AER in relation to distribution network investment and pricing, consumer protection, governance and associated enforcement and compliance arrangements.
- **DER Expenditure Guidance Note**
  - The AER recently released its DER Integration Expenditure guidance note that outlines the AER's expectations of what evidence should be included in distribution network proposals for integrating higher levels of customer DER.
  - This was accompanied by the Customer Export Curtailment Value (CECV) Methodology and accompanying explanatory statement that determines the value of reduction in export curtailment to all customers.
  - These materials form a core component of our overall network regulatory framework to support DNSP's efficiently integrate CER into the electricity system in a way that will benefit electricity consumers in the long term.
- **Incentive Review and DNSP Performance Reporting for Export Services**
  - Under the AEMC's final determination on Access, pricing and incentive arrangements for distributed energy resources<sup>2</sup>, the AER is required to review the incentive arrangements and publish annual performance reports related to DNSPs export services.
  - The AER is about to commence consultation through the publication of a consultation paper seeking stakeholder views on the potential options associated with these activities.

We have included detailed responses to a selection of questions in the Attachment and also make the following broader observations regarding the consultation paper:

- A key objective of the consultation material appears to be reviewing voltage management to enable high CER enablement in support of the Victorian Government Harnessing Victoria's Distributed Energy Resources paper<sup>3</sup>. We note that reviewing Victorian DNSPs management of voltages on their networks is an indirect way of assessing DNSPs provision of export services. Network voltage can be a good proxy for determining available headroom for exporting purposes, however voltage is driven by many other exogenous factors. This indirect approach can become problematic in respect some of the potential incentive issues DELWP is exploring in the consultation paper. Specifically, as will be noted in our upcoming review of incentives for export services, we outline how attempts to incentivise network voltage could create

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<sup>2</sup> [Access, pricing and incentive arrangements for distributed energy resources](#)

<sup>3</sup> [Harnessing Victoria's Distributed Energy Resources](#)

perverse and unintended incentive outcomes. For example, DNSPs could respond to an incentive that encourages them to maintain lower levels of network voltage by simply reducing customer export limits.

- We are supportive of more work being done to demonstrate that there is indeed a material voltage concern on the Victorian distribution networks. The consultation paper contains observational voltage ranges, but this is not accompanied by enough detailed information to suggest customers are not receiving reasonable access to export services. Sources of supporting information could include customer complaints regarding over-voltage, tripping, measured curtailment or unreasonable export limits. All of which would all help to contextualise the suitable solutions to the regulatory problem on which DELWP is consulting.
- As outlined in the consultation paper, Victorian DNSPs have only recently sought to include the provision of export services as part of their regulated required revenue arrangements and received funding to do so. It will take time for the initiatives they have proposed as part of the determination process to be implemented and realised in voltage observations. As pointed to in the initial stakeholder workshop, there is a slight trend in reduced voltages observable in the high-level data presented in the consultation paper. This has coincided with increases in CER penetration rates over the same period, so it is reasonable to assume that this slight decrease in voltages is driven by the projects and programs Victorian DNSPs have implemented since the commencement of the current regulatory period. It may be appropriate to gather further observational data that supports the identification of a problem in DNSPs' efforts to manage voltage when considering the enhancement of incentives.
- We note, IPART NSW conducted a recent review of its Electricity Distribution Reliability Standards,<sup>4</sup> which included a review of DNSP's incentives to provide export services. The final report recommended new reporting standards that require DNSPs to publish DER information on a quarterly basis to provide more data about the impact of export constraints on customers and inform future decisions. This additional data could support contextualising the unique level of voltage data available in Victoria.

We look forward to continuing to work with DELWP and other key stakeholders to further explore consumer benefits associated with voltage management in distribution networks. If you have any queries relating to this submission, please contact Robert Clear, Senior Technical Advisor, at [REDACTED].

Yours sincerely,



Mark Feather  
General Manager – Strategic Policy and Energy Systems Innovation  
Australian Energy Regulator

Submitted via email on: 08 August 2022

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<sup>4</sup> NSW Independent Pricing and Regulatory Tribunal, [Review of the electricity distribution reliability standards, Final report](#), May 2021.

## **Attachment: Specific responses to the Consultation Paper Questions**

We have provided detailed responses to several questions outlined in the consultation paper. For clarity, the specific questions have been repeated before each response.

**Question 4:** *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?*

We are supportive of distribution business managing their networks prudently and efficiently and acknowledge that voltage management is a key component of this. We believe that when considering any potential incentives related to voltage management it is important that the desired outcomes of the incentive are clear. As outlined above, in our soon to be published AER consultation paper reviewing the incentives associated with export services, we note that voltage is an indirect measure of DNSP service performance in providing export services. Incentives directly targeted at voltage management can create perverse outcomes. For example, an incentive targeting the maintenance of lower network voltages could encourage DNSPs to impose lower static export limits. This is likely to achieve the objective of lowering network voltages but will have a negative effect on customer's experiences with respect to export services.

We also acknowledge that while Victoria has access to substantially more voltage data than any other jurisdiction, the underlying links between voltage and CER export capability are being experienced across all distribution networks in the NEM. Therefore, a coordinated, NEM-wide approach to regulating efficient CER integration would likely benefit networks, industry participants and customers alike.

**Question 5:** *What levers would support greater accountability for distribution businesses to deliver investments for network voltage?*

As outlined in the consultation paper, Victorian distribution businesses have received approval for approximately \$240 million in CER integration expenditure for the 2021-26 regulatory period, with a substantial amount of this related to voltage management. We understand that the majority of voltage management programs being undertaken by distribution networks are aimed at managing CER hosting capacity.

The AER reviews expenditure proposals to ensure that proposed expenditure is both prudent and efficient, meaning the network voltage would have to be linked to an outcome (i.e. not just investing in voltage, but keeping it inside tolerances for consumer benefit). The revenue determination process is part of an incentive framework with limited scope for ex-post review. The absence of incentives relating to the provision of export services by DNSPs is being considered as part of the AER's review of incentivising and measuring export service performance. We note that though this lack of direct incentive has always existed, DNSPs NEM-wide have been providing export services for quite some time. This suggests DNSPs are already responsive to the preferences of their customers and deliver those services customers even without a direct incentive, financial or otherwise.

As demonstrated through a number of our regulatory processes, we are supportive of greater accountability for networks through transparent performance reporting where appropriate to do so.

**Question 10:** *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?*

The balance of maximising consumer outcomes while maintaining prudent and efficient investment is a core component of our recently released DER Integration Expenditure Guidance note<sup>5</sup>. This outlines how the regulatory framework supports this process and provides guidance for DNSPs in how to prepare investment proposals seeking to integrate higher levels of DER on their networks. The DER integration expenditure guidance note includes direction on how distributors should:

- develop business cases for network investment integrating higher levels of customer DER and quantify DER values
- develop DER integration plans and investment proposals, and
- quantify DER benefits in a cost-benefit analysis.

We also note that non-network investment should be considered as an alternative to achieving consumer outcomes and assessed relative to network options to ensure solutions are prudent and efficient.

**Question 11:** *What steps and strategies could help to maximise voltage compliance and deliver value for consumers?*

We are supportive of efforts to increase the transparency and effectiveness of accessible performance reporting to support voltage compliance. This could contain information such as customer complaints regarding over-voltage, tripping, measured curtailment, unreasonable export limits or other data points identifying the impact on consumers. Any information should be presented in a manner that is easily understood by customers, capable of being trended to identify ongoing performance and clearly identified compliance thresholds.

**Question 12:** *What are your views on the risks and benefits of going beyond compliance? What other risks and benefits should be considered?*

We would support an approach that demonstrates consumers receive benefits for any costs incurred on their behalf and would be cautious of an approach that is not supported by substantial analysis. We would also be cautious of any approach that could be 'gamed' for multiple rewards or where the outcome was not clearly linked to the incentive.

The consultation paper demonstrates that the challenge faced by DNSPs in managing voltage on their networks will increase over time as higher levels of CER are installed. This means the swings between high and low voltage are likely to become wider<sup>6</sup> and more difficult to manage using traditional voltage management options. Until the costs associated with implementation of dynamic voltage management approaches are supported by the benefits derived from smoothing voltage fluctuations, DNSP investment proposals related to dynamic voltage management are unlikely to be considered prudent and efficient from a regulatory perspective. A similar cost benefit analysis should be performed when considering the imposition of any additional jurisdictionally imposed voltage management regulatory requirement.

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<sup>5</sup>[AER DER integration expenditure guidance note](#)

<sup>6</sup>Voltage Management in Distribution Networks consultation paper – Page 18

**Question 13:** *Is pursuing policy and regulatory reform to improve voltage management beyond compliance a worthwhile exercise? If yes, which options in Figure 15 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?*

We note that there is not sufficient information presented within the consultation paper to determine that there are any material consumer benefits associated with going beyond compliance. We would be supportive of additional analysis being performed to establish the magnitude of these benefits before assessing proposed regulatory or policy changes. We note that some of the proposed options in the consultation paper do not require substantial regulatory or policy changes and would suggest that options such as a consumer awareness campaign could support accountability and increase informed engagement with distribution networks.