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Electricity Distribution Code Review: Issues Paper

AGL would like to take this opportunity to respond to the *Electricity Distribution Code Review: Issues Paper* (Issues Paper) released by the Essential Service Commission of Victoria (ESC) on the 13 August 2019.

As identified by the ESC, the energy system is rapidly changing with the installation of solar power and the advent of micro-grids and aggregation models, and ensuring the regulatory framework supports these technologies and business models in a cost effective, stable and safe manner is paramount.

The review of voltage standards to support how customers are connecting and using the grid is particularly important, given the increased volume of Distributed Energy Resources (DER) being installed across the networks.

AGL encourages the adoption of Australia Standard (AS 61000.3.100) in Victoria, as this would align with other jurisdictions and help focus distributor compliance. AGL does not believe a 'best endeavours' voltage standard would be appropriate and provide further information on this in the attachment.

AGL also notes the Issues Paper is also considering the obligations on distributors for planned outage communications, guaranteed service levels and payments. While AGL agrees with a review of these requirements, it would caution against additional regulatory obligations being imposed without due consideration of the cost to Victorian energy consumers.

AGL's comments on the Issues Paper are attached and if have any questions in relation to this submission, please contact me on [REDACTED] or Patrick Whish-Wilson on [REDACTED].

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Elizabeth Molyneux'.

Elizabeth Molyneux
GM of Energy Markets Regulation



Attachment: AGL Responses to the ESC Issues Paper

Technical standards

Voltage standards

AGL does not support the implementation of a ‘best endeavours’ voltage standard, that would enable distribution network businesses to apply an aspirational approach to compliance and thereby reduce the need for appropriate investment in the network to support the participation of DER.

Rather, we support Victoria adopting the Australia Standard (AS 61000.3.100) for voltage in the Electricity Distribution Code (Code). This would align Victoria’s regulatory framework with other jurisdictions and would allow distributors to deviate from the defined limits only on occasion (1 per cent of the time). In considering this approach, we would urge the ESC to assess the compliance framework for voltage to minimise the impact of non-compliance for customers during the 1 per cent time period and provide an effective avenue for compensation in the event of non-compliance.

We note that the Electricity Industry Guideline 11 – Voltage variation compensation currently allows for a capped payment to be made to customers if their equipment or property is damaged as a result of excessive voltage (according to the fixed limits in the Code). In our view, Guideline 11 does not provide adequate customer protections given that, in some circumstances, customers may not be aware of the high voltage levels being experienced. To improve compliance, we would encourage the ESC to require that distribution network businesses provide ongoing voltage data to the AER and Office of the Technical Regulator that is then measured against the proposed Australian Standard (AS 61000.3.100). It should also be made available to consumers to support appropriate compensation claims.

High voltages may also result in customers being required to provide reactive power to support the network, potentially reducing the value of customers’ DER assets. We would also encourage the ESC to consider how the regulatory framework could enable compensation to customers where they are providing network support services, including in the context of Guideline 11.

Voltage management

In AGL’s view, the effective management of voltage levels across low voltage distribution networks will be a key enabler for the integration of DER into Australia’s energy markets.

In our experience with the operation of our SA VPP, high voltage levels in many parts of the distribution network have regularly affected some customers by making their energy storage systems inoperable.

While we recognise that sustained overvoltage issues present a challenge for distribution network businesses to manage with the increased penetration of DER, we note that DER is typically not the sole cause of the problem.



As has been reported in recent academic literature,¹ the high voltages at which the distribution network businesses are being run is not particular to South Australia. High voltage levels observed in Victoria also suggest some non-compliance in Victorian low voltage distribution networks.

These high voltage levels increase the risk of customers' DER assets being impacted. As noted in the Issues Paper, there is the potential for solar generators detecting high voltages to temporarily shut down. Alternatively, higher voltages may result in customers being required to supply reactive power more frequently. When customers are required to supply reactive power, their ability to provide real power could be curtailed when the inverter kVA limit is reached, thereby reducing:

- the return on their investment in an energy storage system for self-consumption; and
- their ability to transact in the value of that capacity, including for example in the context of an orchestration program such as a virtual power plant.

However, the provision of that reactive power support does not address the underlying high voltage issue. Rather, its effectiveness is limited to pockets of the distribution network where reactive conductor types are installed.

In our view, there is unlikely to be one solution that suits all circumstances. Distribution network businesses will need to consider a range of approaches that suit the distribution network businesses' topology. We would therefore encourage distribution networks businesses to continue to explore a range of strategies to better manage voltage levels on the low voltage distribution network, whilst meeting the Australian Standard (AS 61000.3.100). All network investment solutions must be subjected to a clear cost benefit analysis and the assessment needs to take into account the value of customers' DER assets including their potential to provide benefits to the broader energy market, such as grid support services during periods of high electricity demand.

Supply frequency

We note the ESC's interest in considering whether frequency management should be regulated under the Code, given the growing community interest in alternative power supply models such as stand-alone power systems and microgrids, that are disconnected from the wider electricity network either temporarily or permanently.

In our view, frequency management should only be regulated to the extent that it is being managed by an entity separate to the Australian Energy Market Operator (AEMO). Careful consideration will be required to understand the interaction of these new power supply models with the national frequency control regulatory framework and the appropriateness of regulating frequency through the Code rather than through the national framework.

¹ See, for example, Stringer and others, 'Data Driven exploration of voltage conditions on the Low Voltage Network for sites with Distributed solar PV' (Asia Pacific Solar Research Conference, 2017).



Minimum technical requirements for embedded generation

The ESC has highlighted that the Code does not currently contemplate new models of embedded generation such as aggregation and has sought feedback on what requirements, if any, should be considered to account for these new models within the Code.

We note the ESC's findings in its 2015 inquiry into the value of distributed generation, including that 'for reasons including but not limited to the roll out of advanced metering infrastructure, there may be opportunities in Victoria for the earlier development of an established market for grid services that are not currently available in other jurisdictions'².

AGL recognises the importance of market models such as aggregation that provide the opportunity to optimise the provision of services provided by DER for the benefit of consumers, networks and the broader energy markets. However, in order to enable investment in and operation of DER to be optimised to the greatest extent possible, AGL believes that a national market-based approach should be preferred.

Whilst we recognise that further regulatory reform is required to develop an efficient distribution market, we consider that the Australian Energy Market Commission's Distribution Market Model provided an important starting point for these national reforms³. The Energy Security Board's work program on the Post 2025 Market Design for the NEM also provides an opportunity to progress a long-term, fit-for-purpose market framework that appropriately accounts for the aggregation of DER services.

Customer service standards

Customer Notifications

The Code has specific requirements on when distribution network businesses are to contact customers about a planned outage. This is appropriate but AGL doubts the usefulness and indeed the practicality of requiring distribution network businesses to then notify customers if a planned outage is cancelled or rescheduled

The suggestion in the Issues Paper that distribution network businesses need to generally notify customers ahead of an unplanned outage event is similarly impractical.

AGL does agree that a minimum requirement or threshold for when distribution network businesses should contact life-support customers during an extended unplanned outage is reasonable.

Guaranteed Service Level (GSL) scheme

The GSL scheme has no financial impact on distribution network businesses because of the regulated framework with any payments being recovered from all Victorian network customers. As such, the ESC must carefully consider any extension of scope or scale of the GSL payments.

² <https://www.esc.vic.gov.au/electricity-and-gas/inquiries-studies-and-reviews/distributed-generation-inquiry-2015-true-value>.

³ See AEMC (2017), *Distribution Market Model Final Report*, Available at <https://www.aemc.gov.au/sites/default/files/content/fcde7ff0-bf70-4d3f-bb09-610ecb59556b/Final-distribution-market-model-report-v2.PDF>



AGL supports the current scope of the GSL payments for:

- Timeliness for appointments made with customers;
- Failure to supply when customers are without power for multiple days; and
- Low reliability customers where the cost of improving their quality of supply is prohibitive.

AGL does support the ESC reviewing the definition of its worst served customers to consider several years of data to better identify customers experiencing systemic poor service, rather than providing payments to customers impacted by significant one-off events.