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Dr Ron Ben-David

Chairperson

Essential Services Commission

By email: DGInquiry@esc.vic.au

12 December 2016

Dear Dr Ben-David,

Re The Network Value of Distributed Generation – Distributed Generation Inquiry Stage 2 draft report

AGL welcomes the opportunity to comment on the Essential Services Commission (ESC) 2016, *The Network Value of Distributed Generation – Distributed Generation Inquiry Draft Report* (Draft Report), November 2016.

AGL is one of Australia's leading integrated energy companies and the largest ASX listed operator and developer of renewable generation. Our diverse power generation portfolio includes base, peaking and intermediate generation plants, spread across traditional thermal generation as well as renewable sources. AGL is also a significant retailer of energy, providing energy solutions to over 3.7 million customers throughout eastern Australia.

Market mechanism for rewarding value

AGL commends the Commission's thorough analysis and concurs with the majority of the Draft Report's findings. Specifically we agree with the Commission's finding that distributed generation can and does provide network value, but that the value is highly variable and dependent on a number of key factors. These include the location of the distributed generation on the network, its capacity, output profile and availability, and when within the lifecycle of the relevant network assets the value is being measured.

As a result, we strongly agree with the Commission's conclusion that it would be very difficult to design and administer a feed-in-tariff regime that effectively and efficiently reflects this variability in network value. A feed-in tariff regime would also be biased towards distributed generation as a source of network value, over other sources (such as demand response and load management) that might deliver network value more efficiently in some circumstances. Given the heterogeneous nature of network constraints and potential solutions (e.g. batteries, in-home displays, solar PV, electric vehicles), a market based solution will be more efficient than a regulated one.

National focus

However, we do not agree with the conclusion that the substantial penetration of smart metering in Victoria indicates that opportunities exist in Victoria for the further development of a well-functioning market for grid services that may not presently exist within the other jurisdictions. The rollout of digital metering outside Victoria is gathering pace. AGL alone has already rolled out over 120,000 digital meters for our customers, and

we expect the rollout to scale noticeably with the new contestability in metering framework formally coming into effect in 2017.

Further while digital metering is a key enabler for the transformation of a customer-led energy market, digital metering is not 'the' single enabling technology for demand respond and grid support services, but a means of measuring delivery. Through a number of trials, AGL is demonstrating alternative means of implementing programs for customer demand management that benefit network operations. Rather than relying on the meter to deliver the load/demand management, these programs leverage sophisticated cloud based control of smart AC units and energy storage systems over the public 3G network. This infrastructure provides high data resolution, real-time monitoring, and the ability to actively control connected smart devices.

In AGL's view, national consistency is fundamental. Any divergence between the NEM-wide and jurisdictional network regulatory framework risks becoming unwieldy and difficult to manage and may inadvertently interfere with the efficient operation of those NEM-wide schemes and frameworks. State-based regulatory frameworks will ultimately slow down uptake of new technologies due to higher transaction costs for producers and consumers.

Flexibility

At such an early stage of this emerging market, flexibility is also key. We are at a point of rapid technology evolution and improvements in technology availability and cost. These developments are expanding the range of circumstances and scenarios in which a non-network solution may be a viable alternative to a traditional network solution. However many of these applications are only newly being tested. At this point of 'test and learn', AGL considers that it would be ill-advised and impractical to attempt to establish rigid market frameworks, such as a facilitated market with standardised products.

The fact that each network constraint will have its own particular characteristics also suggests that more bespoke and customised solutions are likely to be required. AGL considers that aggregators and other businesses seeking to operate in this space will be successful where they design and implement demand response programs that deliver value to the network while also maintaining a high degree of comfort and ease of participation on behalf of the customer. This model, where customers participate through an aggregator as an intermediary, also allows delivery and performance risks to be managed as between the network business and the aggregator, rather than falling to the small customer.

Existing mechanisms underpinning a grid-services market

As noted by the Commission, there already exists a suite of regulatory mechanisms in the National Electricity Rules (NER) that have a direct bearing on the efficient deployment and reward of demand side resources (including distributed generation) that provide network benefits. These include the:

- Regulatory Investment Tests for Distribution and Transmission (RIT-D, RIT-T);
- Demand Management Incentive Scheme and Innovation Allowance;
- Capital Expenditure Sharing Scheme and the Efficiency Benefit Sharing Scheme; and
- Requirement for distribution businesses to develop more cost-reflective distribution network tariffs.

There a number of interrelated rule change proposals and other developments in train aimed at improving the efficacy of these mechanisms in supporting a market for grid-services. These include:

- Rule change launched by the Australian Energy Regulator on replacement expenditure planning arrangements. Amongst other things, this rule change seeks to expand the application of the RIT to also include replacement expenditure. In the current environment of flat or declining network demand, the existing focus of the RIT solely on augmentation expenditure significantly limits the number of projects that fall to be considered within this framework. The current $5 million threshold is another highly limiting parameter that requires reconsideration.
- Rule change launched by the COAG Energy Council on the contestable provision of energy services. And rule change launched by the Australian Energy Council (AEC) on the implementation of demand response and network support services. Both of these rule changes focus on the competitive delivery of services from distributed energy resources (including embedded generation) that support network

operation. The AEC rule change also proposes changes to the RIT to ensure competitive non-network solutions are considered for the widest practicable range of investment decisions.

- Australian Energy Market Commission final determination to require distribution businesses to publish information about expected system limitations. The purpose is to ensure consistent and accessible information that will enable embedded generators and other providers of non-network solutions to better use existing mechanisms in the NER in order to defer or reduce the need to invest in the network.
- AER publication of a revised, nationally consistent Electricity Distribution Ring-fencing Guideline. Effective ring-fencing of regulated monopolies from entities operating in contestable markets is essential to the development of vibrant, competitive markets for the delivery of products and services utilising DER, including embedded generation.

AGL considers that each of the above are important steps towards enabling more effective use of the mechanisms which already exist in the NER to encourage efficient use of non-network solutions (including small-scale embedded generation) to reduce the costs of operating and maintaining the distribution network, and thereby support the emergence of a grid-services market.

AGL's DER orchestration activities

In 2015, AGL established a New Energy division, with a dedicated focus on distributed energy services and solutions. We offer customers 'beyond the meter' energy solutions, new and emerging technologies including energy storage, electric vehicles, solar PV systems, digital meters through our ring-fenced subsidiary business Active Stream. We are actively working with customers and in partnership with network businesses to develop a network services capability involving load management and demand response solutions.

A more recent example of our effort in DER orchestration is the launch of the Virtual Power Plant Trial in South Australia. Over the next 3 years AGL plans to have one thousand smart, connected energy storage devices installed behind the meter at homes and small businesses across Metropolitan Adelaide. When aggregated, the batteries will act like a 5 MW solar peaking plant that will be able to be called upon at times of grid instability to provide support services to the grid. The project will demonstrate at a commercial scale the value that DER (solar and batteries in particular) can provide three groups:

- Consumers are able to use the batteries to self-consume more of their solar power by storing energy produced during the day that might otherwise be exported to the grid;
- Networks are able to benefit from peak load shaving and voltage management services that potentially avoids further infrastructure expenditure; and
- Retailers are able to benefit from their reduced wholesale exposure during peak demand periods, and through the use of the battery to provide synthetic inertia and frequency balancing services.

Importantly, all grid users stand to benefit from such an arrangement through the reduced spending on network infrastructure and improved grid stability.

Should you have any questions related to this submission, please call me on 0 or Eleanor McCracken-Hewson, Policy and Regulatory Manager, New Energy, on 0 .

Yours sincerely,

Stephanie Bashir

Head of Policy & Regulation New Energy