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To	Energy Policy WA (**EPWA**)
By email	submissions@energy.wa.gov.au
Date	11 November 2021
From	Con Hristodoulidis, Senior Manager Regulatory Strategy
Subject	Low Load Responses – Distributed Photovoltaic Generation Management – discussion paper

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AGL Energy (**AGL**) welcomes the opportunity to provide a response to the consultation on Low Load responses – Distributed Photovoltaic Generation Management as set out in Energy Policy WA's discussion paper dated 19 October 2021 (**Paper**). AGL is a leading integrated essential service provider, with a proud 184-year history of innovation and a passionate belief in progress – human and technological. We deliver 4.2 million gas, electricity, and telecommunications services to our residential, small and large business, and wholesale customers across Australia.

AGL is an active participant in the National Electricity Market (**NEM**) around demand management of distribution-connected rooftop solar photovoltaic systems (**DPV**) and has provided extensive feedback and solutions on similar low load issues facing markets in the East, such as the South Australian Smarter Homes initiative and the Energy Security Board's Post 2025 Market Design Project.

Further, in 2016, AGL in partnership with the Australian Renewable Energy Agency (**ARENA**) launched a virtual power plant (**VPP**) trial which at the time was the largest virtual power plant in Australia and the first residential VPP in the world to reach the 1000 battery milestone[1] providing up to 5MW of peak generation and a range of network support services. AGL has since expanded its VPP to other states in the NEM enabling customers to participate in orchestration by purchasing a more affordable solar battery solution or by bringing their own battery. Solar and solar battery solutions are also offered to commercial customers in the Southwest Interconnected System (**SWIS**).

Our following responses to the Paper, draw on this commercial experience, our research and insights, with the aim of ensuring energy consumers can actively participate and benefit from any policy response in addressing low load events. By way of example, AGL recently launched a Solar Grid Saver product in the NEM that rewards customers who provide explicit consent for AGL to control their solar generation during low demand events:

Policy development

The Paper recommends the capability for all new and upgraded DPV generation to be remotely reduced or curtailed (**DPV Management**)[2] as a backstop emergency measure to deal quickly with grid security issues arising from low level demand the result of small DPV systems' export and does not

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[1] https://thehub.agl.com.au/articles/2020/09/spotlight-on-virtual-power-plants

[2] Paper, page 6.

detract from EPWA's actions under the DER Roadmap to facilitate active participation of DER in the power system over the medium term.

Whilst we acknowledge the current stability issues facing the grid due to residential DPV uptake, the current model only appears fit for two parties, Western Power and Synergy. We recommend that a foundational framework is established setting out the process for DPV Management which contemplates and allows for the participation of any electricity retailers[3], not only Synergy, together with consideration of a broader policy reform to enable market demand response mechanisms. We also query the extent to which the policy based on DPV Management considered the alternative network solution of reducing or curtailing a small volume of large customers, which could result in the same outcome.

Significant orchestration possibilities will become apparent as greater battery uptake occurs in the SWIS, together with the new security dispatch and 5-minute market reforms. Despite the delay to the new market start in WA, orchestration will lead to substantial opportunities for market scheduling to overcome the need for curtailment, which will enable market and customer-based outcomes rather than addressing the problem through DPV Management. To further incentivise battery storage investment by residential customers, this policy could provide an exemption for those customers with battery storage or hybrid storage systems above (say) 10kWh.

We also note that the Paper does not propose any payment to customers if their solar is curtailed but does allow them to continue to self-consume offsetting their electricity costs. Whilst solar PV is considered in the Paper as the cause of low demand problems, inversely with the right incentives solar generation can become more flexible and could provide a range of network support services, including low demand response, through competitive market offers that reward solar customers who choose to participate.

We support the principle that DPV be valued in terms of its flexibility to not only underpin household consumption but also provide wider essential services support[4]. To this end, in developing an approach to actively manage customers' solar PV, we believe it is critical that their participation is value accretive, rewarding the generation flexibility that they provide to the electricity system, at least equivalent to the actual generation itself[5].

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[3] This is addressed in the Paper at various points, such as Part 3.3, page 7, and Part 4.2.3, page 10.

[4] https://thehub.agl.com.au/articles/2021/11/maximising-solar-to-support-australias-evolving-grid-part-2

[5] https://thehub.agl.com.au/articles/2021/11/maximising-solar-to-support-australias-evolving-grid

Innovative product offerings

As previously advised to EPWA, AGL electricity customers who have a solar battery in the NEM can participate in AGL's VPP[6] allowing the customer to continue to use any excess daytime stored energy when the sun isn't shining but also be rewarded when AGL draws on this stored energy to provide network support. This maximises the value of the stored capacity to the customer.

Drawing on our extensive experience, AGL has recently introduced the Solar Grid Saver[7] offer, which allows AGL to curtail a customer's DPV when grid stability is at risk due to low demand with the customer rewarded with bill credits for participating in this innovative solution. With minimal impact to the customer's self-consumption from the DPV, the customer's solar may be curtailed from exporting to the grid on average up to 3 hours per week (with a capped amount per annum).

Whilst we understand the Paper proposes that DPV Management is only an emergency short term measure, with the continuing rapid adoption of solar PV in WA and without other mechanisms available, this capability may be required more than initially thought. As DPV Management does not include any payment to the customer, it is important that other competitive market-based solutions are developed to ensure consumers can access the potential value streams from their DER assets[8], which in doing so, further supports the grid and ensures that DPV Management is only needed in extreme conditions.

In the SWIS, due to the contestability threshold within the Wholesale Electricity Market (**WEM**), small use customers are restricted to the products offered by their electricity retailer, Synergy. Accordingly, customers cannot seek innovative products which are already developed and on offer by other electricity retail participants or service providers who also operate in the NEM. Further, these products have already undergone technical integration and development costs and can be leveraged into the WEM, which is a sunk cost if similar products are to be developed by Synergy.

These market products may assist in countering low level demand and in doing so, address the issues facing the SWIS raised in the Paper. As a broader policy issue, we recommend that reduction or removal of the contestability threshold could see innovative solutions quickly available to WA electricity customers with DPV.

DPV management as a response

If DPV is reduced through a managed response, there will concurrently be a need for increased generation to match the increased load to the system. To ensure that this process works seamlessly and transparently, DPV management should be part of a market process where DPV reduction is scheduled together with generation to ensure system security.

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[6] https://thehub.agl.com.au/articles/2020/09/spotlight-on-virtual-power-plants
[7] https://discover.agl.com.au/solar/helping-to-maximise-your-solar-savings/
[8] https://thehub.agl.com.au/articles/2020/12/benefitting-from-sustainable-and-affordable-energy

Practical considerations in implementing the proposed DPV Management model

AGL raises the following issues in relation to the proposed Low Load response hierarchy model:

- the hierarchy of instruction: EPWA has stepped out this process based on the current legislative and regulatory framework, however, we believe this is convoluted and recommend that AEMO directly notify Synergy (or if the ability is extended beyond small DPV systems, any retailer) cutting out the requirement to notify Western Power.
  As we understand it:
    - AEMO has the capability via its market systems to send a signal directly to Synergy using market systems which are designed for action and response and would be part of AEMO's security dispatch process.
    - AEMO indicated that this was considered by EPWA and is being treated like a load curtailment (which would be done via a network) rather than a generation curtailment. In a load curtailment scenario, load is being shed to align load to available generation. However, in a DPV curtailment, one form of generation is being curtailed, so that another can operate securely. This makes the process more a security dispatch process, as the central generation must also be scheduled to manage the curtailment of the DPV. If AEMO's powers under the WEM Rules do not allow this, then we do not see this as an impediment as the rules could be amended.
    - A key requirement (not specified) is that as part of this process, participants should be seeking clarity from AEMO on how their dispatch instructions and market notices will be issued – noting the impact on generator scheduling and market pricing.
    - The longer-term plan is to include this as part of the demand response process. However, like many things, once a process is established, it can be more difficult to wind it back.
    - We note that technology already exists to implement these DPV Management measures and query if it will be implemented to be retailer agnostic. Further, an "off the shelf" product would be much cheaper to implement than a establishing a technology platform from the ground up.
    - Also, the process as described, does not contemplate large C&I solar being curtailed, since other retailers are not involved. As set out above, we recommend a foundational framework be developed and this policy be established around the concept of the retailer, so it can be extended to large DPV systems and contemplate retailers other than Synergy.
- We assume that customers with new solar PV installations or upgrades will have smart meters installed with the appropriate communications requirements and necessary wi-fi provision to ensure that any DPV Management can be actioned.
- The issue of low demand could also be supported by network tariffs to direct increased energy consumption during the daytime lows, such as the "solar sponge" network tariff offered in South Australia by SA Power Network.

Mechanisms to inform of DPV Management events

As an example, AGL believes there are multi mechanisms available that the responsible retailer could use, including issuing an SMS notice to affected customers or provide information through an associated app. This requirement should not be placed on installers of PV systems but retailers.

As always, we are happy to discuss further if you have any questions in relation to AGL's response, please feel free to contact Sarah Silbert, Regulatory Strategy Manager on SSilbert@agl.com.au .

Kind regards,

(Submitted by email)

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