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EnergyAustralia

LIGHT THE WAY

Matt Armitage

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Dear Mr Armitage,

AEMO 2018, NEM Virtual Power Plant Demonstration Program

EnergyAustralia is one of Australia's largest energy companies with around 2.6 million electricity and gas accounts in NSW, Victoria, Queensland, South Australia, and the Australian Capital Territory. We also own, operate and contract an energy generation portfolio across Australia, including coal, gas, battery storage, demand response, solar and wind assets with control of over 4,500MW of generation in the National Electricity Market (NEM).

We welcome the opportunity to comment on AEMO's Virtual Power Plant (VPP) demonstration program consultation paper (the paper) and are fully supportive of advancing the role of VPPs and Distributed Energy Resources (DER) in the Australian market. EnergyAustralia sees the role of VPP and DER resources as being of material benefit to the market and customers. These resources will deliver an improvement in power system operation, security and reliability that in our view is likely to far outweigh the prospective disadvantages (such as concerns around the future impacts to system security that large numbers of aggregated resources could have) and will do so for a considerable period of time. For this reason, we want to ensure any VPP demonstration project progressed, is structured in a light-handed way that advances the cause of VPPs and has a clear cost benefit consideration. Not one that may limit their development through regulation or concerns over future obligations that may be imposed on VPPs that participate in, or simply respond indirectly to signals from the energy and Frequency Control Ancillary Services (FCAS) markets at present, or in the future.

EnergyAustralia currently offers products to allow customers to take control of their energy consumption including solar and battery systems as well as demand response products. We are also a participant in the Australian Renewable Energy Agency's (ARENA) demand response trials.¹ While customer adoption of storage at a household level is increasing, the aggregation and value stacking of these resources is still only in its infancy. A number of residential storage projects are progressing with support from ARENA to understand how they can best be commercialised.

¹ <https://arena.gov.au/funding/programs/advancing-renewables-program/demand-response/>

VPP Definition

The paper focuses solely on distributed batteries but the developing issues that AEMO considers may eventuate are in fact relevant to any form of small scale distributed generation or demand response. EnergyAustralia would like clarity on how AEMO is defining a VPP for the trial program, noting the complementary trials that are also occurring.² As AEMO highlights a VPP can be any aggregation of resources, coordinated using control systems³, or even indirect orchestration of appliances such as air conditioners. This is a far-reaching definition that could, for example, encroach on a single customer, who has multiple sites and automated systems to curtail load subject to dispatch or even pre-dispatch forecasts of regional spot prices. For this reason, we think AEMO also needs to investigate the impacts of price responsive demand from a top down 'bulk supply point' perspective, rather than a bottom up one as envisaged in the proposed trial.

VPP demonstration trial

It is not clear to EnergyAustralia why AEMO is fast tracking a demonstration program at this time, or the issues that the trial is aiming to address. It appears that AEMO's primary concern is the potential impact on system security that VPPs could have in the future. Can AEMO articulate in more detail the system security issues that they see from these resources and why there is such a need to fast track any changes? Do these issues justify the potentially significant (or at least unknown) spending of customers funds now to complete these trials, or could these resources be used more efficiently in other ways to encourage further use of VPPs or address known and quantified issues facing system security? We would encourage AEMO to expend similar levels of resources and effort (as they are on the demonstration program) on developing leading indicators of system security and reliability issues that can be used as signals to the market of the technical constraints imposed by orchestrated DER or VPPs.

We would also like AEMO to transparently present to participants the projected costs of the demonstration trials. This could include for example, costs to build internal AEMO systems and the proposed application programme interface (API) to facilitate the trial. We would encourage AEMO to explore the potential of obtaining external funding to support trials if it is believed that the rapid penetration of VPPs is a topic that needs to be addressed in such short timeframes.

Further, EnergyAustralia would like more clarity from AEMO around what obligations and/or requirements they are considering implementing for VPPs in the future based on outcomes and findings from the trial. For example, is the goal to require all VPPs to participate in the scheduling process? If so, has AEMO explored other potential approaches for managing/mitigating increasing penetration of VPPs, rather than enforcing mandatory scheduling? For example, improving their (AEMO's) short-term forecasting, managing increasing penetration of VPPs via existing market mechanisms such as FCAS or potentially enforcing ramp rate restrictions.⁴

² AEMO paper, page 5, <https://www.aemo.com.au/-/media/Files/Electricity/NEM/DER/2018/NEM-VPP-Demonstrations-program.pdf>

³ *ibid.*, page 3

⁴ For example, VPPs ramp rate restrictions could be broadly in line with existing requirements of scheduled generators/batteries to ensure this would not disadvantage VPP's.

The other key conflict that we see with the VPP demonstration trial is AEMO's first objective, which is to allow participants to demonstrate basic control and coordination capability for VPPs providing market services for energy and FCAS. We envisage a future where orchestrated DER portfolios are made up of a complex, and diverse range of devices and technologies that are purely 'behind the meter' and therefore have only indirect implications to the energy market through changes in distributed meters. Therefore, these orchestrated DER portfolios may not and actually cannot (by design) be directly providing 'VPP' style market service in the NEM. To this end we see the VPP demonstration program may be flawed in its ability to deliver holistically on its stated objectives.

EnergyAustralia is concerned that imposing any significant scheduling requirements on VPPs at such an early stage of their development may in fact stifle continued development in this area and may limit the ability for customers to unlock the potential value in the future. At some future point scheduling may be required to manage high levels of penetration, or high volumes of aggregated energy, but AEMO should focus on identifying current issues and tracking these over time rather than seeking full control and visibility immediately.

Interaction with AEMC DR rule change

The Australian Energy Market Commission (AEMC) is currently progressing a DR rule change through its rule change process⁵. The focus of this rule change is to understand changes (if any) that are required to the regulatory framework to encourage additional demand response to participate in the market. We are concerned that some of the proposed requirements that AEMO is considering in relation to the VPP trials (relevant to any distributed resources) may in fact create additional barriers to further participation of these resources.

Further, AEMO has indicated that learnings from the VPP trial will be used to inform the DR rule change process. We are concerned that the timeframe for the rule change process may compromise the rigour of the trials and the value of the learnings in the rule change assessment. With the trials commencing in mid-2019, and the AEMC rule change process expected to be completed by approximately September 2019, AEMO may expedite the trial with the aim of being in a position to provide input to the AEMC process. We would urge AEMO not to rush the proposed trials or jump to conclusions around required changes without thorough consideration.

Interaction with NSW government smart energy for homes and businesses program

EnergyAustralia also notes the strong intent to align and coordinate the NSW government program and the AEMO demonstration. It is our view that the NSW program is well considered and clearly designed to advance the expansion of DER through a significant funding commitment. We would encourage AEMO to overlay its objectives under this VPP demonstration proposal in a light-handed manner and not to replicate objectives under two similar processes.

⁵ <https://www.aemc.gov.au/rule-changes/mechanisms-wholesale-demand-response>

Conclusion

EnergyAustralia continues to support the integration of VPPs into the NEM. We are concerned that the current approach AEMO is considering does not have a clear cost benefit consideration and may result in onerous obligations being placed on VPPs, increasing the challenges in aggregating these resources and reducing the potential value to the customer.

If you would like to discuss this submission, please contact Andrew Godfrey on 03 8628 1630 or Andrew.Godfrey@energyaustralia.com.au.

Regards

Andrew Godfrey

Industry Regulation Lead