21 December 2018

The Australian Energy Market Operator Ltd
Level 22, 530 Collins Street
Melbourne, VIC 3000

via email: *derprogram@aemo.com.au*

Subject: Response to NEM VPP Demonstrations Program Consultation paper[1]

Dear Madam/Sir,

sonnen is a major supplier of residential storage batteries and an operator of Virtual Power Plants in Australia and overseas. Recently, the sonnen virtual battery started operating in the German primary reserves market[2].

We commend AEMO in devising the DER Demonstrations program to help AEMO, the AEMC, and the industry understand the challenge of integrating distributed energy resources in the power grid and the power markets.

sonnen has two key recommendations to improve the attractiveness of the program from participants' viewpoint:

1. Funding – the program requirements for data and operational integration is greater than that currently required for participating in the markets. The participants' costs to comply will be significant. It is unreasonable for the participants to carry the full cost of participating in these demonstrations, while AEMO itself is being funded by the government to run the demonstrations. We recommend that AEMO, together with the relevant government agencies, develop a funding mechanism to compensate VPP operators.

2. Creating flexibility within existing operating procedures and rules – there should be some exceptions provision to existing rules and procedures to

[1] AEMO's *NEM Virtual Power Plant (VPP) Demonstrations Program, November 2018, Consultation Paper*
[2] *Households replacing power stations in Germany – sonnen is putting the largest virtual battery of its kind into operation creating the power grid of the future*, https://sonnen.com.au/households-replacing-power-stations-germany-sonnen-putting-largest-virtual-battery-its-kind/

facilitate experimentation in the delivery of existing services, and in the creation of new services which leverage the performance capabilities of DERs.

Our response to your specific questions are attached.

Yours truly,

Jitendra Tomar
Director, sonnen eServices

Attach: Response to Consultation Questions

Response to Consultation Questions

Questions 1.1: The primary focus of these trials is to demonstrate VPP aggregating battery storage systems. Do intending participants envisage incorporating demand response resources into your aggregated portfolios, and should this be incorporated into the VPP Demonstrations?

Response: Battery systems are intelligent devices which have the ability to control other devices within the house, so from AEMO's perspective, is there really a difference in outcomes where the service is delivered by a battery charging or discharging; or a battery controlling other load(s); or another household control unit controlling household loads? The issue for AEMO would be around measurement. Batteries have direct measuring devices but demand response may require the use of baselines.

Question 2.1: Are these objectives logical and achievable? Should any other objectives be considered for these VPP Demonstrations?

Response: The stated objectives are reasonable, but AEMO should consider using this framework to develop new services which leverage the unique capabilities of the DERs.

Question 2.2: How can projects involved in the VPP Demonstrations better capture consumer insights and improve customer experience and outcomes?

Response: The VPP operators probably understand and affect the consumer experience better than anyone else in the industry. AEMO should aim to maximise the number of VPP operators participating in the trials to capture the broadest set of consumer insights.

Questions 2.3: Is AEMO's high-level approach to the VPP Demonstrations appropriate? What other arrangements could be tested under the VPP Demonstration framework?

Response: AEMO's approach is reasonable. This demonstration framework should also be used to address the regulatory and operational barriers, many of which have already been identified by AEMC reviews. For instance, having 50ms metering at each battery installation for fast contingency FCAS is uneconomic for VPP operators, and you have already identified that a possible solution may be to use sampling techniques. Another known barrier is that exported energy by loads (DERs)s is not recognised by the Rules for FCAS raise services. Additionally, participants should be able to offer < 1 MW capacity in the FCAS markets to try about resource segmentation by type, location, and regions. e.g. in Tasmania, where DER penetration is lower than the mainland.

Questions 4.1: AEMO would like the aggregated VPP dataset to be refreshed every five minutes to align with its operational forecasting function. Are VPP operators able to provide this data on a 5-minute refresh basis?

Response: Yes.

Question 4.2: Should the values be reported as an average value across the 5-minute interval, or an instantaneous value at the end of the 5-minute interval, or both?

Response: AEMO should let the participant decide, and can then determine which approach best meets AEMO's operational requirements.

Question 4.3: What is the appropriate frequency for VPP operators to submit the device level dataset to AEMO? Is there a material difference in resources required to upload the data on a daily, weekly, or monthly basis?

Response: Daily data uploads would be reasonable.

Question 4.4: Are there any regulatory or other obstacles to participants facilitating the data sharing arrangements contemplated in this section?

Response: Data services are integral to VPP operators' business models, and hence participants may require compensation to provide data to certain recipients.