



21 December 2018

Matthew Armitage
Australian Energy Market Operator
GPO Box 2008
Melbourne VIC 3001

Submitted via email: DERProgram@aemo.com.au

Dear Mr Armitage

**NEM VIRTUAL POWER PLANT (VPP) DEMONSTRATIONS PROGRAM – CONSULTATION
PAPER – NOVEMBER 2018**

Origin Energy Limited (Origin) welcomes the opportunity to comment on AEMO's VPP demonstration program. The development of VPP's are in their earliest stages and Origin welcomes this program to discover VPP capabilities and ensure that they can be integrated into the NEM efficiently and securely.

Generally the VPP has sound objectives, especially where it looks to gain an insight into the provision of services across both energy and FCAS markets. Participants should be free to choose which markets they wish to enter as there are additional requirements and bidding systems for the provision of FCAS.

Origin believes that the VPP trial should incorporate demand side response as it will play an integral part in the commercial offerings of a VPP. There are valuable insights to be gained by allowing trials of demand side response at the consumer level and understanding how these can contribute to the lowering of peak demand, time shifting demand and offering localised network services will be beneficial.

Finally, Origin supports the sampling of high speed metering for FCAS provision under a VPP. Installing high speed metering across thousands of consumer level devices is cost prohibitive and will prevent VPPs from offering FCAS. Understanding how sample metering might work will be key to the provision of more FCAS in the NEM.

Further responses to the questions posed in the consultation paper can be found below.

Should you have any questions or wish to discuss this information further, please contact James Googan in the first instance via email james.googan@originenergy.com.au or phone, on (07) 3512 4138.

Yours sincerely,

A handwritten signature in blue ink, appearing to read "K. Robertson".

Keith Robertson
General Manager, Wholesale and Retail Regulatory Policy
Origin Energy

Responses to Consultation Questions

Do intending participants envisage incorporating demand response resources into your aggregated portfolios, and should this be incorporated into the VPP Demonstrations?

Demand response is an important capability of VPPs and there should be an option to include this in the trial. However, it shouldn't be a mandatory offering of VPPs and participants should be free to decide if they offer demand side response as part of their capabilities.

The recent Q&A webinar suggested that the VPP would be targeted at incorporating consumer batteries into the NEM. Origin believes that this would restrict the potential offerings of the VPP and not unlock the full value stack that is available to VPPs. Demand side response is a crucial element in shifting demand to different parts of the day, or to respond to peak demand events. Thus, understanding how demand side response can be utilised by VPPs will be important.

Overall demand side response from VPPs can be used by participants as one tool to manage increasingly diverse energy portfolios.

Are the VPP Demonstrations objectives logical and achievable? Should any other objectives be considered for these VPP Demonstrations?

AEMO's three objectives of the trial are sound. Allowing participants to demonstrate their capability to control and dispatch multiple sites in an aggregated manner is crucial to the success of the VPP trial. Participants should not be restricted to one particular method of operating, rather, if they can demonstrate compliance with Rules requirements, they should be free to operate their VPP to achieve the best commercial outcomes. Availability and certainty of supply will be key to efficient functioning within the electricity market.

AEMO data requirements and visibility of plant should strike a balance between operational requirements and compliance costs. Excessive data collection, compliance costs, reporting or metering requirements will lower the value proposition, potentially excluding participants and reducing competition.

Providing clear guidance on the regulatory frameworks for VPPs during the demonstration period is welcomed. Policies should be consistent where similar themes exist, e.g. AEMO's developments on the operation of large scale batteries in its Emerging Generation and Energy Storage paper and how the Market Ancillary Services Specification (MASS) may impact FCAS bidding for VPPs.

Origin agrees that this trial will help better understand the realities of operating a VPP rather than the theory. One of the questions posed in the consultation centres around potentially requiring scheduling of VPPs in the future. Origin believes that a thorough practical understanding of the operation of a VPP is needed to justify any requirement for a scheduled service below the current thresholds under the Rules.

How can the VPP Demonstrations projects better capture consumer insights and improve customer experience and outcomes?

It is important that AEMO understand the VPP participants experience of operating in the NEM. AEMO should look at the ease of connecting and disconnecting sites, the interaction with DNSPs (especially information sharing about their networks) and the knowledge transfers between parties. These insights will help better inform current participants about shared experiences and future participants as to whether they wish to enter the market.

It would be helpful if DNSPs are obligated to work with VPP trial participants to better understand what areas of their networks could be better managed by a VPP and how that could contribute towards system security outcomes.

It's also important to ensure that VPP participants are fully aware of all the compliance requirements, and subsequent penalty regimes, and that they are well understood by participants prior to commitment.

Consumer experience of VPPs could also be measured to better understand what the customers think of the product. For example, a survey of participants could look at the following variables:

- Customer happiness ratings
- Impact on the consumers use of electricity
- Levels of payment or benefits a customer receives; and
- A customers perceived value of the product.

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

The trial timeframe of 12 months is appropriate; however, participants should not be required to continue for the full 12 months if their circumstances change.

As mentioned above, determining if a VPP is required to be scheduled must be backed by substantial practical evidence, especially where it is below current regulatory thresholds for scheduled generators and loads. AEMO should also assess the impacts of extra compliance requirements for scheduled generators/loads (e.g. NEMDE bidding systems, metering obligations, cost of compliance) and how that may impact the numbers of current and future VPP participants.

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?

Our initial assessment of capabilities suggests that aggregated datasets could be provided at a 5-minute basis level. It will be important to understand how strict the data requirements will be, as co-ordinating thousands of individual power plants will mean data provision may not always be available 100% of the time.

It is important to note that at an individual site level, not all individual devices will communicate in all intervals using currently available communications technologies such as 3G/4G, RF mesh etc. It is therefore essential that the refresh data rate is at an aggregate level as proposed, not at an individual NMI or site level within the VPP fleet.

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?

From a technical perspective a VPP platform should able to provide both an average and an instantaneous value; from a requirements perspective, this should depend on what best suits the provider. Origin suggests that consistency between existing rules regarding 5-minute intervals should be maintained (currently at the end of the 5-minute interval). Where this differs, it should be justified as to how a VPP is different and why it is appropriate.

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?

There would be no material difference between data uploads undertaken on a daily, weekly or monthly basis. However, if there are technical issues with data submission, VPP operators should not be penalised where justifiable reasons can be provided.

As noted above, not all devices will communicate in 100% of intervals using currently available communications technologies such as 3G/4G, RF mesh etc. This will in part be due to device faults and in part due to transient communications network issues.

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

It is important that both commercial and customer data not be shared or distributed wider than AEMO. Thus, tight controls on the amount and type of data needs to be maintained. Only data that is required to understand a VPP operation should be sought.

There may also be commercial constraints to sharing device level information depending on what information is sought. For example, where data is obtained through proprietary vendor systems rather than by the VPP operator, vendors may charge for the information or may treat it as proprietary or confidential and withhold it. This will depend on the exact nature of the data sought.