

AEMO DER MASS consultation response by Members Energy

6 August 2021

Background

Members Energy commends AEMO for this consultation and for the VPP demonstration project preceding it. We believe this visionary yet practical work is required to facilitate the energy transition with a minimum of consumer disruption.

Members Energy co-founders, David Rogers and Leon Siebel, chair, Rod Woolley, and VPP strategic planner, Geoff Lamb, have extensive experience in this industry.

- From 2009-2014 Leon Siebel was a founding member and the key sales growth strategist behind Australia's largest residential PV solar company, True Value Solar. These results eventually converted to a full acquisition of True Value Solar by the German powerhouse M+W Group. He is the current co-founder and Head of Communications at Solar SG and Members Energy.
- David Rogers operated Australia's largest solar PV installation contracting company and was an exclusive internal installation service provider to True Value Solar managing over 100 PV Solar installers nationally, at peak installing over 150 systems per day. He is the current co-founder and Head of Operations at Solar SG and Members Energy.
- Rod Woolley has over 30 years' experience in senior roles, with the past 15 years being in energy efficiency and renewable energy management and policy. He is the current chair of Solar SG and related companies.
- Geoff Lamb has over 40 years' experience spanning heavy industry, electricity generator maintenance, government policy and program delivery, and energy efficiency scheme regulation and delivery.
- Members Energy currently employs 9 full time equivalent staff and its sister company, Solar SG, employs over 68 full time equivalent staff.

The Members Energy VPP currently has over 2200 customers across the NEM (excluding the Ergon region), including around 900 currently enrolled in the AEMO VPP demonstration project across NSW and Vic - equating to 1 MW of capacity in each state.

We continue to enrol new customers at the rate of 100 per month nationally. We currently have two battery technology brands enrolled in the AEMO VPP demonstration and three in our VPP more broadly.

We believe our VPP model is an excellent example of the way this industry will grow. With multiple enrolments across the most populous states, multiple battery technologies (with plans to add more DER), and an organisation structure including multiple consortium partners rather than a single organisation, we believe we embody a low risk, sustainable, diverse, competition rich model for the future VPP industry.

Submission

This submission is for the DER MASS review component of the consultation only.

There are technical reasons why the current concerns of AEMO, used to justify retaining the current MASS rules for VPPs, are either unfounded or at least overstated. These concerns can be addressed by using statistical methods (in relation to the proposed 50 ms measurement) and other rules (in relation to the point of measurement). These are explored below and detailed in submissions by our partners and competitors in the VPP industry including Evergen and Tesla. Even if AEMO proceeds as planned, despite good technical reasons not to, commercial and social considerations require a longer transition period for the VPP industry to adapt. This would provide time to investigate the technical requirements and adapt to them if possible or pursue other revenue sources to move the current business model away from FCAS provision if necessary.

The ultimate trajectory of VPPs in the FCAS market is unknown but what is widely accepted, including by AEMO, is that there will be an ongoing role for VPPs in the electricity network. We suggest that role includes at least orchestration of demand response and data provision to AEMO and distribution network service providers (DNSPs), and possibly also provision of FCAS and grid stabilisation related services to DNSPs. It is also clear that VPPs are providing improved return on investment (ROI) for residential battery installations already, and that incentivising residential battery installation is essential for the energy transition and system security broadly. Batteries address the challenges of excess rooftop solar PV generation and may also provide system security services to the wider network.

The AEMO CEO has noted (Daniel Westerman's CEDA keynote address: 'A view from the control room' of 14 July 2021) Australia leads the world with solar PV penetration, which inherently moves power from incumbents to prosumers, requiring AEMO to foster social licence to facilitate the energy transition. We suggest VPPs are an essential part of that social licence. To destroy the current business model of multiple VPPs, and the aspirations and ROI assumptions of their members, for disputable technical reasons, would not be acting to protect and enhance social licence. It would therefore be a risk to the energy transition.

The likely steep uptake of battery electric vehicles (EVs) in the near future poses an additional significant risk to system security if smart charging is not widespread. VPPs provide an ideal way to provide smart charging to residential EV owners and commercial charging infrastructure and to provide visibility to AEMO and DNSPs of this emerging risk.

The VPP demonstration has:

- begun establishing social licence
- demonstrated visibility for AEMO
- demonstrated FCAS value for AEMO and prosumers.

The current AEMO position on VPPs via unchanged MASS requirements:

- reduces social licence with prosumers by pricing VPPs out of the market in favour of incumbents for disputable reasons
- abandons visibility of the sector for AEMO
- reduces FCAS value for AEMO and prosumers by increasing barriers to entry at a very early stage of VPP development (when the network stability risk they pose is low) and thereby removes an essential revenue source in the early stages of the VPP development lifecycle.

We suggest AEMO's rulemaking should protect the current business model of VPPs as well as the stability of the electricity network. This would ensure VPPs can continue to mature, protecting social licence while their ongoing role is revealed. This will allow existing VPPs and new entrants to protect and grow their customer base while the energy transition progresses, the ongoing role of VPPs is clarified, and technical and marketing efforts have time to move VPPs towards a long term sustainable business model. All while protecting the interests of existing customers to ensure that AEMO's social licence is protected, while also incentivising uptake of residential batteries and smart EV charging.

We therefore suggest continuation of the VPP demonstration MASS technical requirements, with more stringent requirements detailed to commence several years hence if necessary. This is the best way to balance short and long term system security and minimise risks to the energy transition. If necessary, AEMO could also impose a maximum size on participants during the transition period (with more stringent specifications required if the size is exceeded or by the end of the transition period, whichever occurs first). This will keep the risk to system security low, while allowing the sector to mature in technical sophistication while growing social licence – effectively an incubator approach to the VPP industry – which will maximise its benefits and minimise its risks.

The transition conditions should also include the ability of VPPs to increase their current fleet size up to a specified maximum and allow new VPP entrants to enter the market. Limiting access to only current participants and at their current registered capacity inhibits competition as very few currently have a sustainable business model due to their small fleet size. Allowing current participant fleets to increase to a sensible maximum and welcoming new entrants, provided they can demonstrate appropriate competence, would maximise competition and increase the number of consumers participating (hence building social licence) without adding undue risk to system stability. Providing such competition and a sustainable business model would allow participants to move quickly to add other revenue sources which will greatly benefit the energy transition, including demand response generally, and EV smart charging in particular.

Another significant advantage of the suggested approach is enhanced data provision from VPPs to AEMO and DNSPs. AEMO and VPPs have invested considerable effort and expense in the current API data transfer mechanisms from VPPs to AEMO. The current AEMO/ARENA EDGE project is further exploring how to leverage data to provide greater visibility, forecasting and network flexibility. As rooftop solar PV continues to increase its penetration, provision of data becomes even more essential to minimising wastage of energy due to inflexible network limits being imposed on solar export. Facilitating the ongoing role of VPPs to continue to encourage residential battery purchase, plus maintaining the existing

VPP to AEMO API data transfer mechanism will both contribute to ongoing capacity of AEMO and DNSPs to manage distributed solar export in such a way as to minimise impact on AEMO's social license. We therefore suggest maintaining this API.

Technical observations

Members Energy has liaised extensively with our partners and fellow VPP providers in relation to the main technical concerns raised by AEMO to justify its proposal to abandon the VPP demonstrations settings and revert to the existing MASS settings, being 50 ms metering at the point of connection.

Our colleagues, Evergen and Tesla, have submitted comprehensive technical arguments in favour of 1 second metering, with several possible rationales indicating greater measurement accuracy for distributed fleets at 1 sec resolution than for a single connection at 50 ms resolution. We support their findings and suggestions.

Our research, including with our international battery supply partners, indicates a wide range of possible costs which would be incurred by moving to 50 ms, with an effective sliding scale between 1 sec and 50 ms, with less granular options being cheaper and more granular more expensive. Our findings are:

- Meters in the 500 ms – 1 sec range \$150 – \$250
- 50 ms meters range \$500 - \$3000
- Variation also exists based on connection type (single phase vs 3 phase), accuracy, RS 485, Modbus-RTU input/output peripherals
- In addition, there are the developmental costs associated with meter/inverter compatibility (passed on by manufacturers in the price), installation costs, and in-situ costs including possible increased data storage (although it may be possible to reduce storage of other data points which are not required and thereby negate this additional cost).

Our current revenue from FCAS is dwarfed by these meter costs. Notwithstanding the fact that our fleet is currently marginal, given the VPP demonstration transition requirements, it is likely that requiring 50 ms metering at the point of connection would make FCAS participation uneconomic even with an acceptable fleet size. This would require us to quickly explore other revenue options for our VPP fleet, with the unavoidable and undesirable policy impact of reducing visibility of our fleet data to AEMO.

We suggest, given the clear evidence advanced by others, that requiring 1 sec resolution is preferable. Given the fleet sizes required for VPPs to be economically viable it seems clear that the fleet accuracy from 1 sec resolution per system will be superior to the existing 50 ms resolution for single system market participants. Keeping metering cost to a minimum allows for increased VPP competition and reduced service provision cost to customers, in line with the National Electricity Objective, and maximises AEMO's social licence and therefore better supports the energy transition.

Our colleagues, Evergen and Tesla, have also submitted comprehensive technical arguments in favour of metering at the device level rather than at the point of connection, at

least in the case of a simple VPP connection involving a single battery and solar PV array. We support their findings in relation to simple systems, allowing device level metering. We also support an approach where the VPP must ensure that more complex systems involving more than one appliance, must bid conservatively in order to ensure the vector sum of responses from the various appliances behind the meter are accurately reflected in the bid, and that this be allowed by various means including metering at the point of connection or other reasonable means.

Conclusion

AEMO is dealing with the most complex energy transition anywhere, at breakneck speed. We commend its efforts and vision.

The VPP demonstrations project is an excellent example of working with a fledgeling industry to identify an excellent opportunity to foster innovation, support the energy transition, and bring with it significant public support at minimal system security risk. We suggest AEMO take heed of what has been learned and built with this project, capitalise on its achievements and learn from the minor risks identified.

Maintaining the VPP demonstration technical settings relating to point of metering and metering resolution is the best way to grow this industry and allow it to support the energy transition both technically and by harnessing significant social licence. If strong technical reasons are proven which require sensible transitions to more stringent settings (noting that we don't believe this has occurred yet) then this should be done slowly enough to allow the industry to transition to new revenue models while protecting the legitimate interests of the customer base and continuing to incentivise customer uptake of residential batteries. This approach will also provide a foundation to build demand response capabilities which will be essential in the near future, especially for anticipated EV charging uptake, and capture distributed data which will be invaluable to both AEMO and DNSPs in the transition.

To do otherwise would be counter to the National Electricity Objective and squander the opportunity provided by the VPP demonstrations project to advance the energy transition.

We are happy to discuss any aspect of our submission at your convenience.

Kind regards,

A handwritten signature in dark ink, appearing to read 'David Rogers', with a long horizontal line extending to the right.

David Rogers

Co-founder and Director of Operations