

9 November 2021

By email to submissions@energy.wa.gov.au

Perth Energy submission on Low Load Response – Distributed Photovoltaic Generation Management – Discussion Paper

Good Morning

Perth Energy is a significant player in the south-west electricity system as both a retailer and generator. We appreciate the system security issues arising in the power system due to increased penetration of solar PV systems. We have also noticed an increasing trend among commercial entities for purchasing increased quantities of renewable electricity beyond their current obligations. As such, we believe that the low-load issues are only going to increase.

We consider that management of domestic solar PV systems, which are now by far the largest single generation source on the SWIS, as essential. The suggested alternative of disconnecting a distribution feeder or substation which is a nett generator would be untenable as would a restriction on the installation of additional renewable energy sources.

Below we have addressed some of the matters raised in the discussion paper and added some general comments.

1. Expected duration and usage of system

At the on-line briefing, presented on October 27, it was stated that managing DPV would be a rare, last resort action and that a similar mechanism in South Australia had only been instigated once. In the WEM, we are seeing a significant impact from high DPV in the increasing number of negative price events in the balancing market and the need for additional system reserves during low load periods.

The new-WEM has just been deferred by a year because of the workload required to develop and implement new IT systems. There must be a reasonable risk that any commercial behind-the-meter arrangements that might have displaced this proposed DPV management arrangement will also be delayed.

For these reasons EPWA should develop a process sufficiently robust that it can, if necessary, accommodate fairly regular use over at least two to three years.

2. System specification

Section 4.3.1 of the paper recommends that systems be configured to enable reduction of exported real power to zero rather than just turning the DPV off. We would see this as far preferable as it avoids the DPV owner facing a cost of 29 cents per kWh for imports when they expect three or seven cents income for export. It also supports the customer desire to use renewable energy, rather than grid energy, for their internal use thereby reducing their greenhouse gas emissions.

If EPWA adopts the approach of turning the DPV off, rather than restricting export, then serious consideration should be given to some monetary compensation. If events arise which lead to a few hours'

interruption each day over a couple of long weekends the cost impact on a customer's bill will be quite noticeable.

Perth Energy also notes, that while battery installation is still embryonic, the specification should be sufficiently flexible to allow for control/orchestration of batteries to charge during these periods.

3. Cybersecurity

Considerable effort has been taken to ensure that the communication systems used for control in the power system are well protected from any possible cyber-attack. Great care would be needed to ensure that the communications system used for this mechanism, especially if it is reliant on the internet or wi-fi, cannot be hacked. Synergy, and other retailers in the future, would also need to have appropriate security systems in place to prevent illicit use.

4. Public acceptance

It would be wise for EPWA to undertake a public education campaign to alert existing and prospective purchasers of DPV that this mechanism is to be implemented. There has already been some comment in the press about the possibility of interrupting DPV and some of the responses have been quite hostile, probably because of lack of information.

People are suggesting, for example, that these limitations will undermine the economic benefit they will achieve from their significant investment in solar. There needs to be some explanation as to why this is necessary, how often curtailment is likely to take place and an estimate of what the impact on customer costs would be. In this way EPWA will control the discussion and ensure that any potential hostile groundswell will be avoided.

At the on-line presentation it was stated that this mechanism would only apply to new and upgraded systems. We suggest that Synergy could include a notice, either physical or electronic, with their account to any owner of a DPV system. EPWA should also provide a background briefing to the press explaining the benefits and necessity of this system and the low impact on customers.

5. Scheduling of DPV management

With any reduction in DPV there will need to be a commensurate increase in grid connected generation to balance the increase in system load. To enable Market Participants to appropriately set their market positions, AEMO should, as far as possible, clearly define the system conditions, including minimum dispatchable generation level, under which DPV management will be undertaken. AEMO should also issue appropriate market notices ranging from pending (where possible) to implemented.

Adequate notice of activation, perhaps four hours, should be provided on the day. This will allow Synergy, and other market participants, to anticipate activation of this system and assess the likely impact on their operations and market prices.

6. Transition to longer term DPV management

The DPV management mechanism to be introduced now should be designed, as far as possible, such that it transitions seamlessly into the DER orchestration mechanisms being developed through Project Symphony. To this end, it would seem better to have AEMO liaise directly with Synergy, rather than going through Western Power, because this is likely to be the longer-term process route.

This would emphasise the fact that DPV Management is one of a suite of services that behind-the-meter assets may be able to provide to the power system through either retailers or alternative BTM service providers and is integrated into market scheduling. As more batteries are introduced, together with security constrained economic dispatch and five-minute pricing, there will be increased opportunities for orchestration of these technologies with DPV management being a back-stop to these.

DPV Management can then be presented to the public, correctly, as the start of orchestration through which they can gain more benefit from their PV investment. As such it becomes part of the future market rather than an emergency response to a potential crisis.

Further, if DPV Management is presented as part of orchestration, with Synergy and other retailers acquiring this from residents through a commercial arrangement, it then becomes available to be purchased by Western Power if required anytime to protect individual distribution feeders.

7. Smart meters

It is not clear in the paper, but presumably these customers will have to have smart meters with full communications installed.

8. Tariffs

Noting that it is expected that these sites (and others) will have smart meters, this is also an appropriate time to consider network tariffs (such as the SA 'Solar Soak' tariff) which encourages load during the solar peak periods. This would help offset the impact of DPV curtailment.

Should you have any questions in respect to this submission please do not hesitate to contact me on 0437 209 972 or at p.peake@perthenergy.com.au.

Yours sincerely,

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