

12 November 2021

Ms Kate Ryan
Energy Policy WA
Locked Bag 11
Cloisters Square, WA 6850
Sent by email to: submissions@energy.wa.gov.au

Dear Ms Ryan

Discussion paper on Low Load Responses – Distributed Photovoltaic Generation Management

Change Energy is part of the Solargain family of companies. Solargain has been in operation for over 20 years, and has installed over 72,000 solar photovoltaic (PV) systems across Australia. Almost half of these were installed in Western Australia over the last decade.

Change Energy supports the State Government's Energy Transformation Strategy. Delivery of key elements of the strategy will provide the mechanisms to enable more low-cost, low-emissions generation sources while maintaining security and reliability in the South West Interconnected System (SWIS). The effective management of the intermittency of these new sources of generation is paramount.

The Australian Energy Market Operator's (AEMO) recently published Renewable Energy Integration – SWIS Update report¹ highlights that the frequency and severity of low load events have increased significantly as the change in energy mix to more inverter-based renewable generation continues at record pace. AEMO states we are "on a clear trajectory towards being able to meet up to 100% of demand from renewable energy sources, including particular time intervals where 100% of demand is able to be met from residential and commercial solar systems"².

AEMO acknowledges the initiatives being undertaken as part of the ETS will defer the system security risk by enhancing the capability of the system to reasonably accommodate low load events, but considers more needs to be done. One of AEMO's recommended priority actions is the management of distribution connected PV systems, which it describes as:

As soon as practically possible, enable the capability to manage newly installed and upgraded DPV (i.e., for output reduction and/or curtailment) on instruction from AEMO to a third party to assist in managing power system security and reliability in all emergency operational conditions, including during extreme low system load conditions and black start, as a measure of last resort (i.e., backstop capability). This may require the development of separate methodologies for managing DPV output, depending on the operational condition of the power system.

¹ Available at: https://aemo.com.au/-/media/files/electricity/wem/security_and_reliability/2021/renewable-energy-integration--swis-update.pdf?la=en#:~:text=This%20Renewable%20Energy%20Integration%20%E2%80%93%20SWIS,of%20the%20power%20system%20accelerates

² Renewable Energy Integration – SWIS Update report, AEMO, September 2021, page 3.

WA's power system is small. Our peak solar production periods are aligned across the SWIS meaning solar generation cannot be shifted for use within the network. As a geographically isolated islanded system, there is also no opportunity to export the excess generation to other networks as can be done in the National Electricity Market (NEM). This makes curtailment the only option in the SWIS to manage system security in periods of expected low, zero and negative demand.

Change Energy supports the use of output reduction and/or curtailment of DPV generation to manage system security, especially in emergency operational conditions.

AEMO has highlighted the need for DPV management capability as soon as practicably possible, but only proposes it be applied to new and upgraded systems. We expect the intent of this 'grandfathering' of existing systems is to protect customers who have already based their investment decision on previous arrangements and associated costs. However, we are concerned the application of DPV management capability only to new and upgraded systems will not provide sufficient controllable DPV capacity within the timeframe to ameliorate the system security risk.

We highlight that within the Solargain family alone, we have more than 30,000 systems, or around 100MW of installed capacity that could be made controllable and safely meet the recommended technical specifications within a short period of time.

Change Energy recommends EPWA expedite the following ETS initiatives that would provide DPV aggregators the necessary commercial incentives to provide DPV management:

1. establishment of a clear framework for the provision of network support services; and
2. access for aggregated DPV to provide ancillary services (or essential system services).

Change Energy recommends this is supported by the re-design of Western Power's network tariffs to incentivise the necessary change in usage patterns. As part of its next access arrangement, Western Power should be required to introduce time of use tariffs that reflect the whole of market costs (and benefits) of electricity being supplied through the network and system. This would drive behaviour changes commensurate with those being sought by AEMO (i.e. the shift of system supplied use to peak solar producing periods).

We consider these changes together, would provide network users (predominantly large loads and electricity retailers) with the best incentive to shift load through whatever means available to them – a commercial incentive. The willingness of participants to respond to such incentive-based regimes is demonstrated through the Individual Reserve Capacity Requirement (IRCR) response framework, in which around 75 of the largest 500 customers reduces consumption of almost 150 MW over 12 peak periods in summer with a view to avoid capacity charges³.

Thank you for the opportunity to comment on EPWA's discussion paper.

If you have any questions, or would like to arrange a meeting to discuss any aspect of this submission, please contact me on 0401 903 210 or at Geoff.Gaston@changeenergy.com.au.

Regards

Geoff Gaston

CEO, Change Energy

³ AEMO's analysis of the 2019/20 response to IRCR is available at: https://aemo.com.au/-/media/files/electricity/wem/planning_and_forecasting/esoo/2020/2020-wem-esoo-ircr-analysis.pdf?la=en