

Noel Schubert

13 April 2018

Ms Jessica Shaw MLA, Chair
Economics and Industry Standing Committee
Legislative Assembly
Parliament House
4 Harvest Tce
West Perth WA 6005

Submission re: Committee Inquiry into 'The emergence and impact of microgrids and associated technologies in WA'

Dear Ms Shaw,

Thank you for the opportunity to provide a submission on the above subject. I commend the Committee for undertaking the Inquiry.

I have worked as an engineer in the WA electricity industry for 32 years, in a number of roles relevant to this Inquiry, across the whole supply chain from generation through to customer end-use of electricity. Brief details of this work are given at the end of this submission.

I have read the Evidence Transcript of the Public Utilities Office representatives, and the four submissions, posted on the Inquiry website to date. Having worked on a number of the projects discussed in these documents, and related commercial and regulatory matters, I can offer the Committee additional independent comment and insights on many of the matters separately to this submission.

I strongly support and commend Western Power for its work on grid transformation and the trials it is undertaking, as well as its efforts to remove regulatory barriers.

I also recommend improvements to the rules, charges and practices Western Power currently uses to process the applications of parties who wish to connect new or expanded developments to the network. I'm sure Western Power is aware of the need for changes in this regard, but I mention a few that I would recommend be investigated by this Inquiry because they are barriers to the adoption of more economically-efficient solutions.

'Connection' and 'Headworks' charges and practices

I consider that the connection and headworks charges and practises currently used by Western Power have a material impact on the viability of connection of microgrids or other developments to the network, or the decision for new developments to go stand-alone and not connect to the network.

The actual connection to the network and its cost, plus any headworks charges to cover upstream augmentation of the network, are very affected by the electrical capacity being sought by the proponent from the network to cover the demand of the proposed development on the network.

Western Power generally bases these charges on the estimated highest 'anytime' demand from the new development.

The connection assets of the new development itself must be designed and sized to be able supply this anytime maximum demand, because it is likely to occur sometime.

However the additional capacity of any new network augmentation necessary upstream of the actual connection assets, to supply the new development, is very dependent on the new development's demand level – called 'coincident demand' - at times of the day and year coincident with when the network elements supplying the new development have their highest loadings. For most of the rest of the year, the new development's actual demand level does not matter to the network, nor cause the need for any network augmentation, because there is spare capacity.

Emerging technologies such as battery storage, ICT systems for aggregation and control of behind-the-meter equipment, and some generation sources can reliably shift a new development's peak demand to other times of the day that do not matter to the network in that the peak demand would not cause the need for any network augmentation.

A development's reduced coincident demand should reduce Western Power headworks charges, but I understand that at present Western Power does not actively propose such options to developers.

Demand-based network tariffs

The demand-based network tariffs currently offered by Western Power also do not recognise or incentivise a developer's ability to move a development's peak demand away from Western Power's network element peak load times to avoid or defer network augmentation. The demand charges apply for the measured anytime maximum demand of customers in a rolling twelve months, or the customer's contract maximum demand that applies at all times and is not time-based.

It would not be difficult to improve these network tariffs to make the demand charges time-based so they apply at times that matter to the network and provide price signals that stimulate more economically-efficient solutions to reduce the impact on the network and lower costs.

Return-on-Assets driver for networks

It is often discussed that the network return-on-assets model has incentivised networks to build and own more assets rather than adopting alternative solutions that may result in a smaller asset base.

The National Electricity Market (NEM) also has tighter regulatory requirements on network owners to investigate non-network solutions before augmenting the network, than apply in WA. Further detail can be provided on this.

These are just a few of the commercial barriers to better solutions, which exist in WA.

I commend both Western Power and Horizon Power for trialling the innovative solutions they are doing.

Thank you for the opportunity to comment. I would be pleased to be able to elaborate on any of these matters.

Yours sincerely,

Noel Schubert