



SA Power Networks LV Management Strategy TEC submission to AER May 2019

TEC is funded by Energy Consumers Australia to advocate for the role of distributed energy resources in the equitable decarbonisation of the NEM. We represent solar and other environmental consumers in the current NEM-wide revenue determination processes for the next regulatory period. Our interest is primarily in tariff reform, but we are also interested in longer term strategies to accommodate the transition to a high DER energy system.

This short submission should be considered as supplementary to our presentation at the AER public forum in Adelaide on 4 April. We are making it in response to the AER's feedback to SAPN wherein it has been asked to consider whether it could defer any new expenditure to enable greater energy exports to the grid from solar, batteries and VPPs in South Australia, and instead allow customer inverters to "self constrain" by tripping off.

TEC reiterates its support for SAPN's dynamic DER management strategy, for the same reasons detailed in the Clean Energy Council's submission:

Relying on repeated inverter tripping as a grid management strategy would have wider negative impacts – it would be inequitable, it could worsen over-voltage problems, it would undermine prospects for VPPs, it would degrade the value of DER investments, it would adversely affect network performance and it would do nothing to address problems arising from high DER penetration that are not restricted to voltage rise.

We also repeat our argument at the public forum that, by facilitating the integration of high bidirectional flows for less than 1 percent of network revenue requirements, the SAPN proposal represents extraordinarily good value.

We would emphasise two arguments also made by the CEC:

- **Efficiency:** Unlike static limits or self-tripping, dynamic DER management allows greater utilisation of solar and battery systems and the distribution network, by facilitating more exports at times when there are not voltage or thermal capacity constraints.
- **Equity:** With one in three South Australian households now having a rooftop solar and significant state government support for batteries and VPPs, it is important that some DER owners are not disadvantaged vis-a-vis others merely according to where they sit on feeder lines or the sophistication of their meters or inverters.

To emphasise the necessity for this modest funding to be approved, the AER should consider the counterfactual—ie, what would happen (apart from the impacts referred to above) if it is rejected. These are likely to include greatly reduced customer investment in rooftop PV, batteries and participation in VPPs; the economically inefficient wastage of surplus PV energy unable to be exported to the grid; and what the CEC calls "an unstoppable move towards unmanaged, economically inefficient grid defection by angry DER owners." It is hard to see how these outcomes would be in the long-term interest of consumers.

As the AER is aware, SAPN is the most advanced distribution network in the NEM in thinking strategically about the energy transition in the long term, and responding to high bidirectional flows in the short term. The AER's response to SAPN's plans may create a precedent for other networks, so it is critical that it does

so in a way that supports this transition in a least cost, equitable and forward-thinking manner. An efficiently functioning high DER energy system is inconceivable without (a) distribution networks having visibility of their LV networks, and (b) the ability for them to communicate with DER. SAPN should be considered as a live, full scale trial or test case, with the learnings able to be implemented to other networks beyond 2025.

We therefore also draw the AER's attention to the concern raised by Consumer Challenge Panel (CCPI4) members at the public forum concerning the cost-benefit analysis undertaken by HoustonKemp, which finds a net benefit to all SAPN customers—not only DER owners—from SAPN's proposed dynamic DER management strategy. These concerns were not detailed at the forum, and do not appear to have been substantiated to date in the public domain, so cannot be addressed by other stakeholders. This is unfortunate. HoustonKemp are reputable energy economists, and the role of rooftop solar in placing downward pressure on wholesale prices by increasing low cost supply and pushing demand peaks to later in the day has been widely substantiated for nearly a decade (eg, by McConnell in 2012 and Energy Synapse in 2018).

While TEC does not have specialised expertise in energy economics, we note SAPN's statement that "HoustonKemp have estimated [the value of 'passive rooftop PV and from battery exports due to VPPs dispatching in response to wholesale market price signals'] using a methodology consistent with the AER's RIT-T and RIT-D guidelines", and consider this to be a reasonable approach. We also note SAPN's observation that HoustonKemp's methodology "gives a more conservative estimate of future benefits than other methods that consider factors such as wholesale market price or customer benefits arising from feed-in tariffs or avoided retail costs"; nor does it include "other benefits such as avoided transmission costs, the impact of avoided or deferred investment in new generation and reduction in network losses."

To give just one example of the relevance of SAPN's approach, the operation of retail VPPs in a manner that is not coordinated with network voltage and capacity constraints could lead to significant problems for consumers as well as the network (eg, if aggregated batteries are discharged simultaneously to take advantage of spot market arbitraging), requiring either significant augmentation investment or reduced reliability. Greater LV network visibility and the ability to communicate with smart meters and inverters are critical to managing VPPs in the best interests of all consumers.

If the AER still has concerns, we recommend that it adopt a similar approach to that taken in relation to TransGrid's Powering Sydney's Future proposal, by creating a stakeholder advisory group to oversee the project. TEC would be happy to participate.

Yours sincerely,

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Jeff Angel
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