EVC response to the AER on the SA Power Networks – Determination 2025-30

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With reference to:

SA Power Networks - Determination 2025–30 | Australian Energy Regulator (AER)

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Introduction

The Electric Vehicle Council (EVC) is the national body representing the electric vehicle industry in Australia. As the market is emerging in Australia, our work is particularly aimed at increasing certainty for investment through policy, knowledge sharing and education.

The EVC welcomes the opportunity to provide feedback to the AER on the SA Power Networks (SAPN) 2025-2030 regulatory proposal.[1] As noted in our previous submission to SAPN, we limit feedback in this submission to issues directly relating to electric vehicles and the arrangements supporting their recharging that are likely to be impacted by the approach proposed by SAPN.

We commend SAPN for proposing to introduce TOU tariffs across their customer base as soon as possible. While it is pleasing to see some opt-out of demand charge provisions for small businesses, these measures do not go far enough, and there are a range of other areas that remain where the AER needs to consider exercising their regulatory powers.

In making its final determination on the SAPN 2025-2030 regulatory proposal, the EVC recommends the AER to:

- Mandate SAPN to align with other DNSPs to implement volumetric thresholds for opting-out of demand charges.
- Consider the limited benefit likely to arise from orchestration of EV charging in the 2025-30 period in South Australia when assessing the Demand Flexibility program.
- Ensure tariffs are structured to truly encourage Vehicle-to-Grid (V2G) technology adoption which will become increasingly important in the lead up to 2030.
- Encourage SAPN to improve network visibility to improve operational efficiency and reliability.

These recommendations are further detailed in the submission below.

Demand charges for businesses >120kVA

As previously explained in the EVC's submission to the SAPN draft regulatory proposal, all Australian DNSPs either currently employ or plan to implement the use of volumetric thresholds to determine eligibility to opt-out of demand charges. This approach allows for businesses consuming ≤160MWh p.a. (ACT, NSW, Tas, Vic, WA) or ≤100MWh p.a. (Qld, NT), to opt-out of capacity-based demand charges should they choose to do so.

The current approach by SAPN does not allow customers with usage of less than 160 MWh p.a. and demand greater than 120kVA to opt out of demand charges. This approach is not only out of step with the rest of the country, it unfairly financially burdens customers who infrequently draw high current. As per the example outlined in the previous submission, the difference in annual electricity bill can be significant, potentially doubling costs for affected consumers. Maintaining this approach will perpetuate South Australia's status as the most expensive jurisdiction in Australia for Charge Point Operators (CPOs) to deploy and operate public EV charging.

A challenge facing Charge Point Operators (CPOs) lies in their limited control over when load is drawn onto their assets. Unlike other customers, CPOs cannot predict when drivers will arrive to charge their vehicles. While CPOs could curtail the capacity of their assets or install fewer chargers to avoid incurring high demand charges, this would result in a poor service to

[1] The EVC submission to the SA Power Networks (SAPN) 2025-30 draft plan can be found here: EVC response to SAPN draft regulatory proposal 2025-2030 - Electric Vehicle Council

consumers, who are both SAPN and CPO customers, and undermine the broader objectives of accelerating EV adoption and promoting the shift to sustainable transport.

Although it may not be the role of DSNPs to ensure the financial viability of CPOs' intended sites in regional areas, it is their role to serve electricity to their customers and support the energy transition. Increased EV uptake can contribute to more efficient network utilisation, which puts downward pressure on bills for all consumers. Importantly, there are broader benefits to energy security from the transition of billions of dollars[2] of expenditure on foreign oil to Australian produced electricity and the resulting cleaner air and a healthier environment.[3]

Fortunately, transitioning to a volumetric threshold for SAPN is straightforward, given SAPN already utilises volumetric thresholds as an opt-out pre-requisite for certain tariffs, and there are relatively few extra customers that would become eligible to opt-out of demand charges if the opt-out ability was extended to customers >120kV and ≤160MWh p.a. as shown in Figure 52 Tariff Structure Statement Part B (p67). This is because most customers with a connection above 120kVA consume much more than 160MWh p.a. This allows a network to make the tariff change without the large task of tariff re-balancing. A similar precedent was set by Ausgrid offering a tariff for >100kVA and ≤160MWh p.a. with the ability to opt-out of demand charges.[4]

An example of what a revised tariff could look like is shown in the table below (**Table 1**).

Medium Business Time of Use Demand | MBTOUDNE	**Default 40-160MWh p.a.** **Opt-out 40-160MWh p.a.** Interval meter >30kW export capacity	Fixed	$/day	Fixed supply charge per annum
		Fixed	$/day	Fixed metering charge per annum
		Usage-Peak	$/kWh	5:00pm – 9:00pm All days November - March
		Usage – Shoulder	$/kWh	7:00am – 5:00pm WE November – March and 7:00am – 9:00pm WD April - October
		Usage – Off Peak	$/kWh	Off Peak pricing for all other times not captured in the Peak or Shoulder windows.
		Demand - Annual	$/kVA/day	Highest 30-minute demand interval during the last 12 months.

Table 1. Not all customers necessarily opt-out of demand charges as they may receive more competitive volumetric rates.

Accelerating EV uptake helps to meet NEL obligations including the achievement of targets for reducing Australia's greenhouse gas emissions.[6] The lack of public charging infrastructure, especially in locations where it's most needed and with sufficient plugs and capacity, ranks among the top three barriers to EV uptake, following model availability and price considerations.

The cost associated with moving from demand thresholds to volumetric thresholds is insignificant when compared to the substantial benefits that could result from enabling the

[2] https://oec.world/en/profile/bilateral-product/refined-petroleum/reporter/aus
[3] https://electricvehiclecouncil.com.au/wp-content/uploads/2023/07/State-of-EVs_July-2023_.pdf.
[4] Ausgrid - Revised proposal - Att. 8.2 - Our TSS Explanatory Statement for 2024-29 - 30 Nov 2023 - public.pdf (aer.gov.au)
[6] https://www.aemc.gov.au/regulation/neo

rollout of additional charging infrastructure in the regions. Accelerated EV uptake puts downward pressure on electricity prices and increases supply of EVs to the second-hand vehicle market. Accordingly, the EVC recommends the AER to require SAPN to align with all other Australian DNSPs in using volumetric thresholds to determine eligibility to opt-out of demand charges.

Import limits for EV chargers in homes

The EVC is pleased to see Time of Use (TOU) tariffs being rolled out across the residential customer base, in a move that will support incentivising EV owners to schedule EV charging during off-peak hours, primarily midday during peak solar hours or the middle of the night. While EV supply equipment (EVSE) typically contributes an average 250W/EV to network peak demand under flat tariffs, the implementation of TOU tariffs can significantly reduce EVSE consumption to around 110W/EVSE.[7]

While the 2023 AGL-ARENA study on EV orchestration also found that control of EVSE can push it down to around 25W/EVSE between 6-8pm (a further 85W/EVSE reduction), we note that the benefit of orchestration is small compared to the costs of implementation – particularly as the majority of the benefit can be achieved through correctly weighted TOU tariffs.[8]

The EVC is concerned about the direction being taken with respect to the introduction of dynamic operating envelopes, particularly given the implications it may have on EV uptake which is already slow in SA relative to other states.[9] SAPN have set aside $7.7m for "new 'dynamic operating envelope' flexible load connection capabilities" which, if applied to EVSE, is not yet necessary and will add additional cost to consumers as they pay for the infrastructure and upkeep.

To rework the example provided in our previous submission with updated figures, if we consider SAPN's LRMC per this regulatory proposal of $83.58kVA/annum, the value of each orchestrated EV charger, in terms of avoided network cost, is about $7.10 p.a. – this being the 85W/EV difference (in the AGL trial) between what can demonstrably be achieved without control, and the floor level of what can be achieved with control, multiplied by the LRMC figure.

This $7.10 per EV charger per year isn't the ***net*** benefit. It's the top line benefit in terms of avoided network costs, before the operating costs of the solution necessary to secure the benefit are taken into account. In order to secure this benefit, the charger needs to be smart, connected and cyber secure. The consumer needs a help desk to call if something goes wrong. The software platform linking all the bits of the system together needs to be maintained. A wide variety of costs, well explored in the reports produced for the ARENA – funded smart charging trials, need to be addressed.

The SAPN draft proposal on this matter is to spend $7.7m on this element in the 2025-30 period in order to create a capability that, if it is applied to EV charging, will predictably cost consumers significantly more than it will save them. If we take a conservative estimate on the operating costs of this solution of $100 p.a. per EV participating, and assume a future state in 2030 where 40% of the 200,000 vehicles (80,000) predicted by SAPN to be in South Australia

[7] 20230703-AGL-Electric-Vehicle-Orchestration-Trial-Final-Report.pdf (arena.gov.au)

[8] In this study, participants were allowed to opt-out of orchestration if they needed their car charged, likewise in the real world if a customer is not given the opportunity to opt-out, they could just plug their car in to a power point.

[9] EVC-Australian-EV-Industry-Recap-2023.pdf (electricvehiclecouncil.com.au)

are participating, then in addition to the $7.7m capex cost of this solution, consumers will be carrying an $8m ($100 x 80,000) annual operating cost, in order to deliver a benefit of about $568,000 p.a. to SAPN in the form of avoided network augmentation ($7.10 x 80,000).

If instead of the conservative '$100 per participating EV' cost used here, we apply the actual costs associated with the ARENA programs that deliver home EV charging orchestration (100% subsidised smart EV charger installation, properly managed help desk to resolve customer problems, etc.) then the cost to secure this benefit rises to about $164m in CAPEX (~80,000 smart chargers at $2050 each), and $41.1m/annum in operating costs borne by the consumers (given the '$514 per annum per EV operating costs' referenced in the AGL ARENA report).

Conversely, we can consider the benefit that home EV charging brings to the network when it is not controlled but is instead left in the hands of the consumer. A typical EV will consume about 2500kWh of energy each year, most of which will be consumed at home behind a residential connection. Assuming peak demand contribution of 250W per EV (the existing baseline), and based on SAPN's stated LRMC, the cost of network augmentation created by home charging of each EV is ($83.58/kVA/annum x 0.25kW/EV) = ~$20.82 per annum per EV. If we assume that ongoing efforts to educate and encourage consumers to charge their EVs outside of peak times are successful, this figure will fall.

The contribution each EV driver makes to paying for network costs, however, is a function of the residential bill. This is analysed by the AEMC in their price trends report.[10] We see from this that in South Australia, the total price in c/kWh is about 35c, and that 12c/kWh of this goes to SAPN. Multiplying the 12c/kWh by the 2500kWh consumed produces a contribution to distribution network operating cost, by the residential bill payer, of $300 per annum per EV.

From this, it is clear that EV owners are paying far more towards the cost of operating the network than they are adding in costs associated with augmenting the network.

In the case of EV charging, the economically sensible move is to encourage well behaved charging with appropriate pricing structures, educate consumers, and leave them in control. Import limits are not yet required and may never be required if vehicle-to-grid (V2G) is correctly implemented.

The EVC asks the AER to consider the limited benefit likely to arise from orchestration of EV charging in the 2025-30 period in South Australia when assessing this element of the proposal.

Export tariffs and vehicle-to-grid

Faced with delays in the roll out of large-scale renewable energy such as wind and solar farms due to lack of transmission infrastructure and social licence, energy storage will be an important feature of the energy transition and ensure the ability to meet legislated emissions reduction targets. Rooftop solar and more local storage solutions like V2G will be essential components to empowering Australian consumers to benefit from the renewable energy transition. To facilitate V2G to succeed here, the key objective will be to incentivise EV charging during off-peak hours and encourage energy discharge during peak periods.

[10] Policy_Portrait_Layout (aemc.gov.au)

Whilst the EVC does not oppose export tariffs, we have been vocal in warning that inextricably linking export tariffs with export rewards risks poor incentivisation for V2G. We are pleased to see export tariffs have not been exclusively applied to tariffs targeted at V2G.

Rooftop solar and EVs often complement each other, with one frequently serving as a catalyst for the adoption of the other. If, for example, a network charge at peak time was 25c/kWh, with network prices often about a third of the retail price the consumer sees, that would result in a 75c/kWh peak charge. This structure presents challenges for consumers interested in adopting V2G, as their vehicles may not always be at home during peak periods, resulting in increased costs on those nights. It's crucial that V2G remains appealing to a wide range of households, rather than being limited to single-person households who are consistently with their vehicles. Tariffs structured like this may discourage consumers from adopting V2G and lead them to opt for retail flat tariffs instead, impeding the widespread adoption of V2G technology.

Charging very high prices during peak periods may not be necessary because consumers will already be getting very low reward for solar exported in the middle of the day and therefore are being incentivised to shift load into solar periods or charge batteries. They can then consume less during peak periods and/or discharge batteries. Price signals during peak periods need only be slightly higher than shoulder. While achieving price reflectivity in tariffs is important, it is equally important to consider the evolving nature of the grid to 2030. With the introduction of V2G, current peak periods may no longer be an issue.

Concurrently, strong export credits will need to be available for consumers able to export during peak periods in summer to support and green the grid. This doesn't mean that there should be no export credit at peak times year-round, but a weaker pricing signal could be imposed to reflect the value to the network implied by the high peak consumption prices year-round, as electrification continues to drive peaks in winter heating months.

In summary, the AER should:

- Ensure peak consumption prices are not too high.
- Encourage peak export rewards act as incentives year-round.

Network visibility

We note that some expenditure has been allocated for "enhancing visibility of the dynamic state of our network through greater access to interval meter data resulting from this smart metering roll-out." This will help SAPN to manage their network. SAPN currently make capacity information at a feeder level available to the public.[11] It would be helpful to proponents wishing to rollout public EV charging equipment and renewable energy projects to be given access to capacity information at the pole and pad mounted transformer level, like in the Essential Energy region.[12]

This kind of tool improves the quality of applications coming into DNSPs and makes the connection process more efficient. The AER should actively encourage SAPN to make this information readily accessible. While the accuracy of the information may not be perfect initially, the key is its availability, as accuracy can be refined through practical use and collaboration with industry.

[11] New Network Visualisation Portal launched (sapowernetworks.com.au)
[12] Essential Energy (arcgis.com)

Conclusion

While DNSPs have a variety of tools at their disposal, it is inefficient to seek to introduce a range of measures at once, as it becomes difficult to assess what is having the desired effect. In shaping the future of South Australia's energy landscape, SAPN must prioritise measures that ensure a prosperous, equitable transition to a low-carbon and environmentally responsible future. This entails focusing on reforms and measures that support, rather than hinder, the widespread adoption of EVs and renewable energy technologies. Tariff reform, through good design of TOU tariffs and two-way tariffs, including options to opt-out of demand/capacity charges for consumers <160MWh/annum, stands out as the most cost-effective and impactful way to achieve this outcome.

In making its final determination, the EVC urges the AER to prioritise tariff reform as a key strategy for SAPN to facilitate the energy transition and enable further adoption of EVs.