

Submission to AEMC Issues Paper: 2020 Retail Energy Competition Review: Electric Vehicles



The Electric Vehicle Council is the national peak body representing the electric vehicle industry in Australia. We represent members involved in providing, powering and supporting electric vehicles. We are a cross sectoral organisation whose engagement with a wide range of stakeholders supports the advancement of a strong domestic electric vehicle industry.

The Electric Vehicle Council welcomes the AEMC's consideration of electric vehicles. Electric vehicles will have a significant effect on the grid and while uptake of electric vehicles in Australia is comparatively low, it is timely to initiate actions to ensure the energy system is both prepared for and an enabler of greater electric vehicle adoption.

The retail component forms just part of the cost stack to consumers undertaking electric vehicle charging. The AEMC should also therefore consider the wider impacts and needs of both public and home charging across the entire energy system as this has a significant impact on the environment faced by retailers.

1. Are there any other contextual development the AEMC should consider in relation to EV uptake and use in Australia?

Policy environment

Australia continues to lag the world in electric vehicle uptake. The prime reason for this is the absence of national policies to support electric vehicles which detracts from the viability of Australia as a key market to supply electric vehicles.

Around the world, governments have:

- set electric vehicle sales targets, providing car makers with certainty around policy direction
- provided consumer incentives to minimise the cost differential between electric and petrol/diesel vehicles
- mandated tighter fuel efficiency standards, compelling car makers to bring more electric vehicle models to these markets
- invested in public charging infrastructure.

Despite policy absence at the Federal level, state governments are implementing a range of policies, including the NSW Government's recent policy announcements to support electric vehicles as part of their Net Zero plan. However, national policies are still needed to ensure Australia is considered as a viable market for car makers to supply electric vehicles.

Investment in public charging is also vital for supporting electric vehicle uptake. In a survey undertaken for the Electric Vehicle Council, 70% of respondents claimed the provision of public charging infrastructure would encourage them to purchase an electric vehicle.¹ This is relevant to the energy system due to the variety of benefits which electric vehicle charging will provide to the grid, such as increasing capacity utilisation, supporting renewable generation and ancillary services such as frequency and voltage control. Without public charging infrastructure, these opportunities for the grid will not be realised because electric vehicle uptake will remain low.

Fleets will also play an important role in driving electric vehicle uptake. The electrification of fleets will provide car makers with a stable level of demand and will also provide vehicles to the second-hand car segment. The electrification of buses and heavy vehicles will also be a significant customer market for the electricity sector, and their charging needs will have a significant effect on the grid.

Relevant activities

The AEMC also needs to consider the challenges and benefits of electrification of transport on the entire energy system. There are already a number of undertakings by the electric vehicle industry and energy market participants to identify and address these. In 2019, the Electric Vehicle Council formed a Working Group comprising the EV charging industry and the energy sector to identify these challenges and benefits. The issues identified through this process included:

- Data and knowledge gaps – the energy sector has no visibility of where electric vehicle chargers are being installed and limited understanding of charging profiles
- Inconsistent and delayed connection processes – the timeframes and uncertainty of connecting a fast charger to the grid is inhibiting the rollout of fast public chargers
- Tariff structures for public charging – existing tariff structures do not reflect the true cost of electric vehicle charging
- Managing residential demand – there is a need for further understanding on appropriate tariffs and demand management mechanisms

Following this work, the Electric Vehicle Council partnered with AEMO, ARENA and other groups to form the DEIP EV Working Group. This DEIP Working Group is currently setting up taskforces to address these issues. An additional taskforce will also look at the standards landscape for the electric vehicle sector, including any international developments.

There is a need for the energy sector to balance the need for readiness with the need to support evolving technologies. It is vitally important that Australia does not lock in additional requirements or burdens for the electric vehicle sector given Australia is already behind the rest of the world when it comes to uptake and these would act as a further barrier. Now is the time to engage with the industry, commence trials, and position Australia as an enabler of electric vehicles, rather than focusing on regulating their activities.

¹ EVC (2019) *State of Electric Vehicles* <https://electricvehiclecouncil.com.au/wp-content/uploads/2019/09/State-of-EVs-in-Australia-2019.pdf>

2. What challenges and opportunities, given the current role of retailers in the NEM, are EVs likely to provide retailers?

The uptake of electric vehicles in Australia offer a number of opportunities for electricity retailers. Firstly, it will lead to greater electricity consumption, creating an increased potential source of revenue for retailers.

EV charging also offers a more flexible load than other loads which means that there is significant potential for managing this additional demand. The ability to charge during off-peak times, and the benefits this will derive to the grid, will enable retailers to offer more attractive time-of-use products to customers. In standalone homes, this can occur with a smart meter alone and does not require smart charging equipment (which is generally more costly than other types of charging equipment).

EV customers will also access multiple points of the energy network providing retailers with the opportunity for bundling offers. The existing approach is to treat these separate charging events as different customers, but there are opportunities for retailers to bundle home and public charging within their product offerings.

Vehicle to grid will also offer a new value stream for retailers as customers can export stored electricity from their vehicle back into the grid. The technological and commercial applications of vehicle to grid capability is still being trialled but is expected to become mainstream within the next decade.

Electric vehicles will also create challenges for retailers and the broader energy market to overcome. Some of these challenges are unique to electric vehicles but some are also relevant to other loads and technologies.

There is currently no way of knowing the locations of residential electric vehicle charging installations, and therefore potential electric vehicle product customers, due to no existing method to inform utilities of charging equipment installations. In addition, a significant proportion of electric vehicle owners may use their standard household power point to charge their vehicles. For example, in Norway, a country about 12 years ahead of Australia on uptake of electric vehicles, 63% of 11,274 surveyed electric vehicle drivers do exactly this.² There is also little understanding of consumer charging behaviours due to the low volume of electric vehicles in Australia. These factors create a challenge for retailers in designing and marketing retail products for electric vehicle customers.

Smart technology can also enable greater participation in energy markets which will create potential for more revenue streams for retailers. However, there are no current incentives for customers to purchase smart technologies. The limited rollout of smart meters is currently limiting the capacity of retailers to offer time-of-use pricing

The interaction between network tariffs and the retail products creates both opportunities and challenges for retailers in the electric vehicle market. As network tariffs are being redesigned to become more cost-reflective, which includes increased time-of use pricing and demand tariffs, retailers will need to balance the incorporation of these tariffs with being innovative and reflecting the desires of customers.

² <https://elbil.no/wp-content/uploads/2016/08/EVS30-Charging-infrastructure-experiences-in-Norway-paper.pdf>

3. Regulatory Environment

a. Do you consider that regulatory changes, like multiple trading relationships, that improve a consumer's ability to engage with multiple FRMPs at a household would enable innovative services and products to develop for EV consumers?

Multiple Trading Relationships

In principle, the ability for customers to have multiple relationships with different service providers would likely lead to a more diversified and innovative product range. A regulatory system needs to adapt to technology change to ensure it continues to support a level playing field for service providers to offer new and diverse products, which is vital to drive competitive outcomes in the market and benefit consumers. New technologies increase the flexibility of loads and ability for consumers to interact with the market.

While this issue is relevant to electric vehicles, it is not confined to electric vehicles; instead it is an issue for the wider energy market to consider in detail. Significant consultation on a detailed proposal will need to be undertaken to consider what outcomes are desired and what regulatory changes are appropriate. Stakeholders will need to consider whether the current regulatory system is adequately supportive of innovation and whether multiple trading relationships are already possible to a sufficient degree.

There are few EV products in the market at the moment. This would seem to lend support to reconsidering whether the regulatory environment remains fit-for-purpose and leads to the best consumer outcomes.

That being said, the EV products that are available are showing there is some potential for innovation. For standalone residential dwellings, the presence of a smart meter at the point of connection already enables a wide range of possible interactions which are supportive of electric vehicles.

For example, Powershop are already offering a super off-peak tariff aimed squarely at the EV driving community, providing energy at ~12c/kWh in Melbourne from midnight to 4am. This is less than half the typical residential day time rate. From the driver's point of view, this very much a 'set and forget' cost saving measure, it doesn't require on-going participation or active engagement.

In terms of demand response, smart meters also enable schemes like Power Response (Energy Australia) and Summer Saver (United Energy) to be run by either the retailer or the DNSP.

These schemes have proven highly effective in terms of providing relief to a constrained grid at times of peak demand. Two of the key benefits of these schemes are that the consumer is in control, and that the cost of scaling out these solutions is negligible, since no special hardware is required at the user premises. The message to a participant in the lead up to a demand response event is typically a request for them to limit their usage during a particular time frame – for an EV driver with respect to charging at home, this is very easy to comply with.

This means that there is already scope for the consumer to have different interactions with more than one participant.

EV charging at home, being a class of load where time of consumption is generally not closely linked to consumer amenity, is an excellent candidate to make use of structures like this, assuming the presence of a smart meter and a consumer willing to participate.

Since 2017, smart meters have been mandatory at a federal level for new residential installations. Promotion and awareness around this could be a better first step before making modifications to the regulatory structure, in terms of supporting EV uptake.

b. Do you have any views on an appropriate method (e.g. through a change to the SGA framework or an alternative metering configuration), and relevant costs, to facilitate this?

A broader discussion on the necessity of regulatory changes needs to occur before a view on the method can be formed.

Regulatory considerations for multi-residential sites

Multi-residential sites (Class 2 buildings, typically apartment complexes with underground parking) differ from standalone dwellings in that the most practicable way to supply the EV chargers will often be via common property power, rather than the metered supply to the dwelling. This is because the individual dwelling metering is often done at the level of the dwelling in the building, and it is not practical to run a circuit down from the dwelling back into the car park associated with that dwelling on the title. In a standalone dwelling this will typically not apply, as from a billing point of view the EV just another load behind the meter that the resident is already responsible for.

There are existing regulatory arrangements around the supply of energy to dwellings in contexts like multi-residential, principally because energy for the dwelling is an essential service, and it's possible for an embedded network structure to be put in place that locks the consumer in to a single supplier at significant disadvantage. The Power of Choice reforms played a key role in this space.

The regulatory gap as we see it is that there is presently a lack of clarity around regulations applicable to billing for the supply of energy to vehicles in the car park of a multi-residential structure.

Section 4.2.4 of the *Electricity Network Service Provider – Registration Exemption Guideline* states:

“the supply of electricity from a charging facility to a vehicle is a service to the transport sector, which is not regulated by the AER.”

“Under the National Energy Retail Law (s. 88), a person requires authorisation or exemption for the sale of energy to a person for a premises. As a vehicle is not a premises, the AER does not regulate the sale of energy for vehicles.”³

Owners corporations have expressed interest in being able to handle this themselves, and a range of different methods are possible at a technical level. A few examples are:

- The control system for EV chargers (either on site or cloud based) reports individual energy use to the owners corporation on a monthly basis, and the owners corporation or their appointed service provider invoices users for the use of the energy on a kWh basis according to a pricing schedule set by the owners corporation.
- EV drivers who wish to use the EV chargers in the building pay a flat monthly fee for an ‘all-you-can-eat’ service, rather than a kWh-based bill. Something like \$400-\$500/annum would do it, assuming that most of the use is off-peak.

³ AER (2018)

<https://www.aer.gov.au/system/files/AER%20electricity%20NSP%20Registration%20Exemption%20Guideline%20-%20Version%206%20-%201%20March%202018.pdf> pp. 51-52

- Tiered priority arrangements – for example, the driver can select gold, silver, or bronze membership at the site at different price points, and this governs the priority with which their vehicle charges. Again, no kWh specific bill would be required.

In principle, all of the same regulatory protections that apply to embedded networks in the NER could be applied to EV charging in these contexts, but this would significantly increase the cost overheads for the provision of EV charging, by comparison to solutions which requires no specialised metering apparatus. We would not encourage requirements of this nature to be made mandatory, unless it becomes clear that consumers are being unfairly treated in this space.

In terms of the scope being addressed by the AEMC paper, we would contend that leaving this space less regulated will foster innovation, allowing the marketplace to determine which solutions are best fit for purpose, and represent least total cost to the consumer.

In terms of appropriate consumer protection, there is an argument to be made that the EV driving apartment resident is less in need of consumer protections around supply of electricity to their vehicle, than they are with respect to supply of electricity to their dwelling. The rationale is that while the consumer potentially has limited agency around the changing the electricity supply to their dwelling, if they find the terms associated with recharging their vehicle at home to be onerous, they have the freedom to recharge their vehicle elsewhere. This is further supported by comparing existing passenger vehicle fuel supply arrangements. Petrol for the average driver is not treated as an essential service in anywhere near the same way as electricity, water, and gas supply to dwellings.

4. Residential charging

a. Are there other offers in the retail market, or are you developing any others, aimed at EV consumers?

The Electric Vehicle Council is also aware of:

- Red Energy EV Saver
- Ergon Energy Retail Electric Vehicle Home Charging Plan

b. Are there retail market barriers in developing residential products and services for EV consumers?

As discussed above, the retail component forms only part of the cost stack of a charging service. Therefore, retailers are faced with a number of fixed conditions which will only provide them with a limited ability to innovate, even with the right regulatory settings. Consumers would benefit from a more far-reaching consideration of the elements of charging costs, such as looking at network and charging equipment costs. Once any unnecessary barriers are removed from these cost components, retailers may have more flexibility to innovate their products.

From a retail perspective, the limited rollout of smart meters in many jurisdictions acts as a current barrier in developing residential products. Smart meters enable retailers with greater capacity to offer more innovation in their EV products.

The evolving role of energy market standards will also be an ongoing issue to monitor in relation to the ability of retailers to innovate. Any steps towards regulating charging behaviours may limit the evolution of technologies and products to support demand participation. Those designing standards must ensure they do not lock Australia into current technologies when it is clear that EV technologies are rapidly evolving.

5. Non-residential charging

- a. Are you providing or developing any non-residential charging products or services?**
- b. Are there retail market barriers in developing non-residential EV charging products and services?**

The rollout of fast public charging provides an additional market for retailers and also supports the uptake of electric vehicles in Australia. However, the network tariff structures for fast public charging services provides a barrier to develop attractive retail EV charging products. These network tariff structures include significant demand and fixed charges which, if passed on by retailers, creates a difficult business model for public charging providers given the currently low uptake of electric vehicles and subsequent low utilisation of public fast chargers.

Based on international experience, the rollout of public fast chargers is widely accepted to be an important early step in growing EV uptake. Consumers often cite 'range anxiety' as a key barrier to purchasing electric vehicles, therefore investment in public charging must first occur.

6. EV Value Streams

- a. Are you currently developing products and services to harness EV value streams?**

As discussed above, there are already products available for demand response. While these are not specific EV products, the nature of EV charging makes these products an attractive option for EV owners.

- b. Are there retail regulatory barriers for retailers or new energy service providers accessing these value streams?**

It is important to note that it is still very early in the Australian EV market and therefore it is potentially too early to assess regulatory barriers. There are still a relatively small number of electric vehicles on the road and only a small number of market participants. Also, technologies and capabilities such as vehicle to grid and vehicle to home are still under development.

The AEMC and other regulators need to ensure that the market can develop, the energy system remains flexible to adapt to changing technologies, and consumers are supported as they adopt new technologies. In the first instance, these bodies should support engagement with industry and trials to enhance understanding and support innovation, before moving to immediately regulate.

Conclusion

Thank you for the opportunity to comment on this Issues Paper. Please contact Larissa Cassidy at larissa@evc.org.au if you would like to discuss any of these issues.