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Ausgrid Submission
AEMC electric vehicles issues paper
March 2020



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Attn: Joel Aulbury
Australian Energy Market Commission
Level 6, 201 Elizabeth St
Sydney NSW 2000

Lodged online

Dear Mr Aulbury,

We welcome the Australian Energy Market Commission's (AEMC) review of retail energy competition and its issues paper into electric vehicles (EVs).

The electrification of the NSW vehicle fleet has the potential to deliver significant environmental and social benefits. Ausgrid expects to play an active and early role in facilitating this transition. We operate and maintain an electricity grid that is shared by 4 million Australians living and working across an area that stretches from south of Sydney to the Upper Hunter, including the Sydney CBD.

Integrating EVs into the market is likely to create challenges and opportunities for both retailers and distributors. EVs are likely to be one of the largest loads for many households, and there is a risk of a poor customer experience, and higher bills for all electricity customers, if charging does not take place in an efficient manner. Ongoing tariff reform and innovation by retailers will be key to avoiding this outcome.

If you would like to discuss our submission in more detail, please contact me on (02) 9269 4357 or john.skinner@ausgrid.com.au.

Yours sincerely

A handwritten signature in blue ink, appearing to read "John Skinner", followed by a horizontal line extending to the right.

John Skinner
(A/g) Head of Regulation

Submission

Our submission provides views on key issues raised by the AEMC. Given most of the AEMC's consultation questions are targeted at retailers, we have limited our comments to these high-level issues.

1. Challenges and opportunities of electric vehicles

The transition from internal combustion engines to EVs has the potential to deliver significant benefits for NSW and its residents. The key societal benefits include improvements in air quality, lower carbon emissions and reduced noise pollution, while individual customers are likely to see cost savings and greater energy independence. However, these benefits will not be achieved without innovation and cross industry collaboration.

The integration of EVs on the distribution network is likely to be a challenge for both distributors and retailers. EVs are among the largest single loads for those households that have them, akin to a split-system air-conditioner or electric hot water tank. EVs also have the potential to significantly increase customer bills if EV charging does not take place in an efficient manner.

The timing of when EVs are charged can have a significant impact on the electricity system. The demand for electricity has large peaks and troughs as the energy needs of customers varies throughout the day. These fluctuations create an off-peak window during which there is capacity on our network (and access to affordable generation) to support flexible electrical loads, at the least cost.

These off-peak windows present an opportunity for EVs. By charging EVs at these times, we can better accommodate these electrical loads within the existing network capacity 'envelope'. This could be a key cost saving measure in the transition to EVs, as using existing network capacity will avoid the need to make potentially large investments augmenting network infrastructure. In areas of high solar penetration, other options, such as using EV charging as a 'solar soak' in the middle of the day, may also be efficient.

In the future, vehicle-to-grid (V2G) technology is predicted to become widely available, potentially offering consumers an option to provide network support services to distributors. This will provide customers with a better return on their investment, whilst also potentially lowering costs for all consumers through the deferral of network augmentation.

2. Moving to cost reflective tariffs

If EVs add to peak demand they will become a principal driver of our future costs. Ongoing tariff reform is essential if we are to ensure that we use our existing assets more effectively and avoid the need for network investment or retrospective demand management action. This will place downward pressure on network charges.

In late 2018 we collaborated with our customers through our Pricing Working Group to co-design new tariffs that change the way the costs of electricity distribution are recovered.

These changes will encourage the development of new products and services, both by the retailers and by the growing number of innovators in this space.

The AER approved the introduction of our new demand tariffs in April 2019 and on 1 July 2019 our new tariffs were applied for the first time. New customers and customers who upgrade their meter to a smart meter will be assigned to our new demand tariff.

In the eight months since our new demand tariffs were introduced around 35,000 residential and small business customers have been placed on a demand tariff. While we do not have full visibility of how retailers translate our tariffs into retail plans, we expect to see new products and services emerge that use our network more efficiently and reward customers accordingly. EV charging is one area in which we expect to see this innovation.

3. It is early in the transition to EVs

According to Transport for NSW, there were 6.6 million vehicles registered in NSW in 2019, of which about 2,200 were electric.¹ This demonstrates that it is still early on the technology adoption curve for EVs and a detailed assessment of retail competition and innovation may be a little premature.

Despite this, retailers are starting to innovate in this space and several retailers are now offering EV charging plans, including innovative new tariffs. There are also several EV trials underway, including the ARENA funded 'charge together project', of which Ausgrid is a supporter.

As part of our innovation program, we plan to undertake an EV charging pilot which will examine how EVs will impact our network at a single location. This project will evaluate the technical parameters and market mechanisms that can manage the charge rate and optimise the charging of individual vehicles. Through our Network Innovation Advisory Committee (NIAC) we are consulting with customer advocates on the development of this and other innovative programs.

4. Distributors have a key role in the transition to EVs

With growing numbers of distributed energy resources (DER) connecting to our distribution network, the role of the local distributor in providing a safe, secure and reliable energy supply is more important than ever.

Customers expect that they will be able to realise the value of their investments in DER. Given the size of their batteries, EVs are well positioned to act as a DER device through V2G and vehicle to home functionality. In much the same way as networks are having to resolve two-way energy flows resulting from excess solar being exported to the grid, the ability of EVs to act in the same way may create similar problems for the grid.

We expect that the local distributor, acting in the role of Distribution System Operator (DSO) will continue to have a key role in ensuring the safe, reliable and efficient operation of DER

¹ <https://www.rms.nsw.gov.au/roads/registration/get-nsw-registration/electric-vehicles/index.html>, viewed 16/3/2020

across the distribution network. Not only will the DSO continue to operate the local distribution network, it will monitor and forecast the state of the network, as well as proactively optimise solutions to network constraints.

5. Multiple trading relationships

Multiple trading relationships (MTR) at a customer's premises has the potential to create increased competition at the connection point, thereby leading to greater innovation in energy products and services.

In 2016 the AEMC decided not to make the rule proposed by the Australian Energy Market Operator (AEMO), primarily because the cost of implementing AEMO's proposed model would have outweighed the benefits for a potentially small subset of customers.

In response to that rule change, the NSW distributors submitted that there are other options available for a customer that wishes to separate a dedicated load from the main residence.² There are many circumstances in which this happens already under existing regulatory arrangements, such as when:

- a customer with a detached granny flat wishes to separate this load from the main residence, or
- a customer wishes to install a charging point for an EV on a separate load from the main residence.

In these instances, the customer currently has a number of options, including:

- requesting an additional NMI from their retailer and having an additional meter installed at their premises. A new circuit may need to be installed to facilitate this, however the costs incurred are not prohibitively expensive
- adding a controlled load tariff
- finding a retailer with a tariff appropriate for the customer's needs.

Given the availability of these options, we do not consider that reviewing MTR will necessarily unlock a wave of innovative products and services for EV customers. However, we do foresee a future where MTR has a place in providing value to customers. It is important that the complexity of implementing such a change does not outweigh the benefits provided.

² Ausgrid, *Submission to AEMC Consultation Paper: Multiple Trading Relationships*, September 2015, p.5

A scenic landscape at sunset. A paved road with a dashed white line on the left and a solid white line on the right curves into the distance. The sky is a mix of blue and orange, with the sun low on the horizon. Large trees are silhouetted against the sky. A utility pole with power lines is visible in the middle ground.

Thank you

