

## Consultation Paper: 'Smart' Demand Response Capabilities for Selected Appliances

The Electric Vehicle Council is the national body representing the electric vehicle industry in Australia. Representing members involved in producing, powering and supporting electric vehicles, our mission is to accelerate the electrification of road transport for a more sustainable and prosperous Australia.

### *Electrification of transport*

The electrification of transport in Australia will bring a number of important benefits, including lower emissions, improved air quality, lower vehicle running costs, and improved fuel security.

Australia is well behind the rest of the OECD when it comes to electric vehicle (EV) adoption. In 2018, a total of 2,216 EVs were sold nationwide, representing 0.2% of total car sales. EV manufacturers view Australia as a relatively risky market for EV sales given the absence of national EV policies and relatively small market size. As a result, Australia has limited model availability which has limited EV sales.

Governments around the world have already recognised the national and local benefits that come from electrifying transport fleets. As a result, they are structuring government policies and electricity systems to be both an enabler and beneficiary of greater EV uptake, through utilising incentives and removing barriers. All state and territory governments have some EV policies in place and the Federal Government is currently preparing its national EV strategy. Energy market bodies are also beginning pieces of work in looking at EVs from a grid perspective. However much remains to be done.

The electrification of transport will require consideration of the electricity system, and it is sensible to begin discussing how best to position the grid to benefit from and enable the EV industry. These discussions will need to include looking at how the electricity system will enable EV charging demand while also meeting the system-wide objectives of security, reliability and affordability.

We acknowledge the important and necessary role that demand-side participation of EV customers will play in achieving these outcomes and how they can deliver a range of benefits to EV owners and the grid.

However, we are unable to support the current proposal to mandate demand response capability through DR 4755 in EV charging equipment with our reasons outlined below. Integrating demand response into electric vehicle charging is an important topic which requires extensive engagement with the industry, and time to consider the options and most optimal path forward.

### *EVC Recommendation*

EVC members acknowledge that the potential load on the grid from EV charging is an important issue that needs to be addressed.

The EVC has an established Electricity Sector Working Group, comprised of representatives from the EV charging industry and the electricity sector, to discuss the integration of EVs and the grid. We propose using this existing forum to undertake further discussion on EV-related demand-side participation, including demand response in a peak event, and reach agreement on what kind of action should be taken to manage EV charging demand.

We would welcome and benefit from the participation of the E3 Committee, other energy market bodies such as AEMO, and any other relevant stakeholders in this process.

### *Lack of engagement with the EV industry*

There has been insufficient engagement with the EV industry about this proposal. The Electric Vehicle Council received no notice about this consultation nor did most of the members whom we represent. As a result, the EV industry has not been provided with adequate time to participate in and develop the E3 Committee's understanding of the technological and commercial realities of this program. The discussion of how to best integrate DR capabilities is ongoing and the proposals in this paper do not represent the latest thinking or most appropriate measures.

It is also unclear in parts of the paper whether the scope of this proposal is intended for all Level 2 chargers or for Level 2 chargers installed in households only.

### *Costs and benefits have been misstated*

The EV industry was also not consulted on the assumptions and inputs provided into the modelling which has impacted on the analysis of costs and benefits of the proposed mandate. There is also a lack of transparency on how figures included in the paper were calculated.

The costs of complying with DR 4755 have suggested as \$50 per unit. Estimates from the EV industry suggests complying with AS 4755.3 through a physical DRED would add at least \$500-\$1,000 to an EV charger. We are not able to comment on the cost of complying with AS 4755.2 yet given where the standard is up to, however a software option would cost significantly less than a installing a physical port.

Conversely, the assumptions around the benefits from exercising demand response from EV charging appear to be overstated, given that many consumers will already be responding to price signals and charge outside of peak hours as many early EV adopters do today.

For example, the consultation paper assumes 637MWe of maximum demand reduction is available via control of EV load under the medium case, where 50% of activated customers are participating. To arrive at this figure means assuming a significantly large number of households have activated their DR capability and were charging during the peak (estimated to be around 90,000 consumers). This assumes that there are around 180,000 consumers that have opted to activate their DR capability in the first place, even

though most would already be able to easily access off peak charging without any loss of amenity.

We have reasonable questions about the accuracy of these estimates and therefore have concerns about relying on these figures for cost-benefit analysis. Instead, further research and consultation about both the costs and benefits should be undertaken before any decision is made.

#### *Timeframe for decision does not reflect reality of urgency*

While EV sales are expected to increase rapidly in the 2020s, there remains ample time to consider the best way forward to address the peak demand issue. This does not mean that we should delay these discussions as we do not want to find ourselves with legacy issues of incompatible equipment; but it does mean that we have some time to consider the role of demand response in the EV market and work through what options are best for the EV industry, the energy market and consumers. The timeframe for decision proposed in the consultation paper does not allow this.

EV charging is remarkably different to air-conditioners (in terms of use profiles, consumer preferences and technical capability) so the same assumptions should not be applied. The consultation paper does not include enough analysis of EV charging.

For example, EV owners have a different incentive profile to air-conditioner customers. It may be the case that widespread adoption of TOU pricing, in conjunction with ability to schedule charging periods through already existing technologies, might produce the desired outcome of managing a peak demand without going down a mandated, more costly and restrictive path.

Even during peak summer events, EV consumers would need a much smaller incentive to defer their load than say, air conditioner customers, meaning a likely greater voluntary response and less need for a mandatory mechanism.

There remains a lack of research and pilots in this space to test these assumptions, especially when compared to air conditioning.

#### *International and technological misalignment*

The proposal to require EV charging equipment to comply with DR 4755 could add an additional and unique burden to the Australian EV industry as DR 4755 in its current form is not fit for purpose for EV charging. Neither DR 4755.3 or DR 4755.2 which is currently under development, includes EV charging in its scope. Mandating compliance with this standard therefore feels premature.

Given Australia's role as a technology-taker in the EV market, it is vital that any Australian standard aligns with international standards/conventions such as the *Open Charge Point Protocol* (OCPP), IEC 15118 and IEC 61850-90-8 which include smart charging functionality.

EV charging is an evolving marketplace with significant levels of technological and commercial innovations occurring and expected over the next five years at least. Placing a premature and unique standard in this market risks reducing the level of innovation in electric vehicle supply equipment (EVSE) products available in the Australian market.

Before introducing any additional Australian charging requirements, it is also important to consider how it will interact with the onboard charger in the vehicle, which is in control of the charging event. It is vital to not impact on vehicle charging operability.

Also, there are already APIs available to control EV charging remotely through the vehicle at no additional cost and using existing market signals established in the NEM.

Adding an additional requirement to the Australian EV market would signal to car makers yet another barrier to supply EVs to Australia. In contrast, other jurisdictions around the world are making efforts not only to remove barriers, but to also provide incentives for EV adoption. The approach proposed in the consultation paper risks placing Australia even further behind the world.

### *Barrier to competition in a relatively new market and loss of choice for consumers*

Adding a specific Australian requirement to EVSE products will impact on competition in the local EVSE market.

While Australian companies have made significant contributions to the EVSE market, we remain reliant on including international EVSE products to ensure a local competitive market that provides consumers with choice of EV charging products.

Given the relatively small consumer market for EVSE in Australia, it is likely that some manufacturers will opt not to augment their design and manufacturing processes to meet unique Australian standards and may instead withdraw from the Australian market. In addition, many OEMS have international supply contracts in place with EVSE suppliers. This proposal could affect these contracts in Australia, impacting on the viability of supplying electric vehicles from these OEMs to Australia. Adding to the cost of EVSE may also have a perverse incentive of encouraging consumers to use their existing power points to charge their vehicle, which would achieve the opposite outcome sought. In Norway, a country about 12 years ahead of Australia on uptake of EVs, 63% of 11,274 surveyed EV drivers do exactly this.<sup>1</sup>

### *No consideration beyond the device*

The paper examines only one element of demand response with little discussion on the end-to-end system that needs to exist beyond EVSE.

Consideration of how energy service providers aggregators will need to “stack value” to incorporate EVs into their demand-response programs to make them viable is an equally important element of assessing the viability of installing demand response capability in EVSE.<sup>2</sup>

Without consideration of the total picture, this proposal could risk placing an additional burden on manufacturers and consumers with no thought given to the how these capabilities will be utilised and therefore materialise benefits for the consumers and the grid.

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<sup>1</sup> <https://wpstatic.idium.no/elbil.no/2016/08/EVS30-Charging-infrastructure-experiences-in-Norway-paper.pdf>.

<sup>2</sup> See IRENA (2019) p.67 <https://www.irena.org/publications/2019/May/Innovation-Outlook-Smart-Charging>

