



26 August 2022

Energy Security Board

Lodged by email: info@esb.org.au

Dear Sir/Madam,

Response to Electric Vehicle Smart Charging – Issues paper

Origin Energy Limited (Origin) welcomes the opportunity to provide comments on the Electric Vehicle Smart Charging Issues Paper.

Origin is a large Australian integrated energy company with activities in energy retailing, power generation, natural gas production and LNG export. Origin also has recent experience in exploring new product offerings and has focused on areas such as solar & storage, connected homes, electric vehicles (EVs) and future fuels including hydrogen.

We have developed our own proprietary virtual power plant (VPP) platform to enable the coordination of behind the meter distributed energy resources (DER)¹. Assets connected to the VPP have grown from 98 MW to 258 MW over the past 18 months, including an increasing variety of distributed energy and Internet of Things (IoT) devices. These devices include hot water systems, solar, batteries, air conditioners, EVs and various industrial assets, which are aggregated, controlled and dispatched in response to market and portfolio positions, creating value for both Origin and customers through a lower cost of energy. Origin views the integration of DER such as EVs as a key long-term reform.

We support the development of a customer centric, competitive market approach to DER integration, that focuses on incentives rather than mandating rules. This should be flexible and support a range of technologies to allow customer choice and promote the development of multiple products and services. We are pleased to see a strong focus of customer considerations in the consultation paper.

Ideally, rules and standards to promote the smart charging of EVs and demand management should be nationally consistent. We suggest that there is a role for market bodies such as the ESB, AEMC and AEMO to develop a national framework, in consultation with other key stakeholders such as state governments and networks. We are concerned that Australian consumers may suffer unnecessary costs and confusion if individual jurisdictions or networks adopt disparate policy settings.

In summary, our key points on this consultation paper are as follows:

- **Demand management** – the ESB has correctly identified the management of EV loads as a key issue facing the electricity grid of the future. We agree that the market should learn from recent experiences such as the significant deployment of rooftop solar PV systems and respond proactively. EV charging could present one of the biggest challenges as it involves large lumpy loads that far exceed most other large household appliances such as air conditioning. We

¹ We note the ESB's new terminology of Customer Energy Resources (CER).

suggest that governments should prioritise the dynamic load shifting of EV charging, including by incentivising the uptake of smart charging infrastructure.

- **Enabling flexibility and dynamic controls** – we suggest that the ESB should focus on a holistic approach to DER integration which includes demand shifting, enabling technologies, tariff structures and storage. How these are implemented, including the impacts on customers, will be important. *We support policies which provide incentives for customers to change their demand profile, rather than mandated rules.*
- **Standards** – the use of international standards is preferred. We generally prefer to avoid the creation or application of unique Australian standards unless there is a good reason for doing so. Further, state or network-based standards should be avoided where possible. Australian consumers may suffer unnecessary costs and confusion if individual jurisdictions or networks adopt disparate policy settings.
- **Default tariffs** – generally, we do not support the mandating of tariffs for particular devices such as EVs. Rather, we would prefer key stakeholders such as the ESB, AEMC, AER, AEMO and state governments to work with networks to develop appropriate demand tariffs. “Solar sponge” type tariffs, such as those used in South Australia, have an important role to play.
- **Connections** – we note that the rules for connection of EV smart chargers vary across networks and can be difficult to interpret. This is generally because they were written before EV chargers were contemplated. We suggest updating these rules and promoting national consistency.

We provide responses to the specific consultation paper questions in the attached table.

If you wish to discuss any aspect of this submission further, please contact Matthew Kaspura at matthew.kaspura@originenergy.com.au.

Yours sincerely,



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Attachment A: Responses to consultation paper questions

<i>Issue</i>	<i>Question</i>	<i>Draft Origin Response</i>
Domestic charging		
Minimum smart charging standards	1, 2	<ul style="list-style-type: none"> Generally, we prefer to follow international standards where relevant and that these are applied nationally. State or network-based standards should be avoided where possible. Australian consumers may suffer unnecessary costs and confusion if individual jurisdictions or networks adopt disparate policy settings.
	3	<ul style="list-style-type: none"> No, not all EVSE's come with smart charging as a minimum functionality.
Candidate communication protocols	4	<ul style="list-style-type: none"> We generally support the use of OCCP standards, such as OCCP1.6(J), 2.0.1 etc but any minimum standards should allow for choice as new standards develop in the future.
	5	<ul style="list-style-type: none"> We support ISO 15118 but do not believe there is a mandatory requirement given limited vehicle compatibility.
Default tariffs	6	<ul style="list-style-type: none"> Generally, we do not support the mandating of tariffs for particular devices such as EVs. Rather, we would prefer key stakeholders such as the ESB, AEMC, AER, AEMO and state governments to work with networks to develop appropriate demand tariffs. “Solar sponge” type tariffs, such as those used in South Australia, have an important role to play. As a retailer, we have found these tariffs useful to encourage demand shifting of loads such as hot water systems. These tariff structures need to be packaged simply and conveniently for customers to embrace them.
Timelines and compliance	7	<ul style="list-style-type: none"> We support the gradual phasing in of dynamic controls for new assets such as solar systems, batteries and EV chargers. Instead of conducting a separate process we suggest that the ESB work with existing processes which are already well progressed including AEMO and the South Australian Office of the Technical Regulator. One key issue will be to establish common communication standards – most jurisdictions are considering the application of IEEE 2030.5 to Australia.
Consumer participation	8	<ul style="list-style-type: none"> Generally, we do not believe that remote coordination of EVs should be mandated at this point in time.

		<ul style="list-style-type: none"> • Our preferred approach would be to incentivise enabling infrastructure through targeted subsidies of smart EV chargers and allowing the market to continue to develop product offers that encourage demand shifting to off-peak periods and to soak up excess solar PV generation in the middle of the day. • Origin is currently undertaking a smart charging trial which includes installing and connecting at least 150 smart chargers onto Origin's Virtual Power Plant to manage EV charging. This trial, which is being undertaken with ARENA, seeks to collect charging and usage data to provide insights into EV charging behaviours and examine responses to smart charging. So far, the trial has confirmed that consumers respond well to incentives. Origin successfully moved charging consumption so that only 6% of charging occurred between the 3pm and 9pm (compared to 30% without incentives). • Consumer acceptance about the potential impacts of dynamic controls will be an important factor. Unless consumers can be shown the reasons for these changes and how they can access the benefits, there may be resistance to their implementation. Changes to solar feed-in tariffs over the past decade are a good example of this. • Mandating remote coordination may lead to unintended consequences such as consumers using basic chargers instead. Care must be taken in how smart-charging incentives are applied, particularly to what is only an emerging EV market in Australia.
Charge Point Operator (CPO): Roles and Responsibilities	9	<ul style="list-style-type: none"> • We are not convinced that there is a need to mandate the use of CPOs at this point in time. • Origin, like other service providers, is already offering this service and we believe a better approach is to allow a competitive market to develop which promotes customer choice. • The position could be revisited at a later stage once EV chargers are of a more significant load and if there is a failure in the competitive market to encourage the desired level of demand management. • Consumer acceptance about the potential impacts of dynamic controls will be an important factor. Unless consumers can be shown the reasons for these changes and how they can access the benefits, there may be resistance to their implementation. Changes to solar feed-in tariffs over the past decade are a good example of this. • We support the gradual phasing in of dynamic controls for new assets such as solar systems, batteries and EV chargers. Instead of conducting a separate process we suggest that the NSW Government work with existing processes which are already well progressed including AEMO and the South Australian Office of the Technical Regulator.

	10	<ul style="list-style-type: none"> Following from the above response to Question 9, we do not believe it is appropriate to define the roles and responsibilities of CPOs at this point in time.
CPO Communication Protocol standards (CPOs)	11	<ul style="list-style-type: none"> Origin, as a retailer, already offers this orchestration service for customers. We believe an incentive-based approach is more appropriate.
	12	<ul style="list-style-type: none"> Consumer protections already exist through various legislative provisions of Consumer Law.
System Operations Requirements	13	<ul style="list-style-type: none"> We agree that information on the installation of EV chargers should be captured in a central database. The AEMO DER Register is a good starting point that could be built upon to provide better market visibility. Currently the DER Register is focused on solar PV systems and batteries. We suggest that EV chargers also be incorporated as a matter of priority.
	14	<ul style="list-style-type: none"> We do not consider any other minimum standards are required at this point in time.
	15	<ul style="list-style-type: none"> EV chargers are another IoT device and security is important. Supporting the development of international standards such as development of OCPP can help with this given that security is one of the aspects the standards consider.
New business models	16	<ul style="list-style-type: none"> In our experience the rules for connection of EV smart chargers vary across networks and can be difficult to interpret. This is generally because they were written before EV chargers were contemplated. We suggest updating these rules and promoting national consistency.
Related issues	17	<ul style="list-style-type: none"> The consultation paper is heavily focused on charging at home but we suggest that the ESB also consider where vehicles may be located in the middle of the day such as private workplaces, shopping centres, and council car parks. Overall, the key policy issue is to encourage the smart charging of EVs away from peak times and/or towards the middle of the day to soak up excess solar generation.
Public charging		
Grid connections	18	<ul style="list-style-type: none"> As per above, we do not support the mandating of technology specific tariffs.
	19	<ul style="list-style-type: none"> As noted above, the rules for connection of EV smart chargers vary across networks and can be difficult to interpret. This is generally because they were written before EV chargers were contemplated. We suggest updating these rules and promoting national consistency.
Measurement	20	<ul style="list-style-type: none"> NA
Pricing	21	<ul style="list-style-type: none"> Pricing options for EV charging should be left to the market to decide.

Payments and charge data records	22	<ul style="list-style-type: none">• We support flexible payment options including credit cards and other third-party payment systems.• Overall, policies should reduce barriers to participation in smart EV charging.
Roaming	23	<ul style="list-style-type: none">• We suggest it is too early to consider issues of roaming in Australia. Rather, a watching brief could be placed on international developments.