



## **Clean Energy Council submission to the Energy Security Board Electric Vehicle Smart Charging Issues Paper**

The Clean Energy Council (CEC) welcomes the opportunity to provide feedback on the Energy Security Board (ESB) Electric Vehicle (EV) Smart Charging Issues Paper.

The CEC is the peak body for the clean energy industry in Australia. We represent and work with Australia's leading renewable energy and energy storage businesses, as well as accredited designers and installers of solar and battery systems, to further the development of clean energy in Australia. We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

The CEC strongly supports the use of international standards wherever practical. We would prefer to avoid creation or application of uniquely Australian standards unless there is a compelling rationale for doing so. We are generally opposed to states and territories setting their own special and unique requirements regarding standards. State-specific approaches are often counter-productive and add costs to consumers for minimal benefit.

Electrical safety requirements for EV chargers should be settled before standards for remote management are introduced. It would be very helpful if there were clarification regarding whether AS/NZS 4777.2:2020 and any other standard is required for grid connection of EV chargers, vehicle-to-home (V2H) chargers and vehicle-to-grid (V2G) chargers. This is more urgent and important than deciding on communication protocols.

Some parts of the Issues Paper appear to be pre-empting the response of the Australian Energy Market Commission (AEMC) to the 'flexible trading arrangements' rule change request. It would make sense to settle the response to that rule change proposal before developing policy that assumes that flexible trading arrangements will be introduced.

An objective of EV charging policy should be to encourage owners to charge EVs during daylight hours when solar energy is abundant. Key to enabling that is convenience. EV chargers need to be available where EVs are parked during daylight hours. Further consideration should be given to policies that would incentivise provision of EV charging facilities at car parks and other places where EVs are parked during daylight hours.

The CEC is opposed to the practice of mandating tariffs based on the appliances owned by consumers, whether the appliance is a rooftop solar system, a battery or an EV. An EV-specific tariff could incentivise consumers to use their wall outlet instead of an EV smart charger.

We would be happy to discuss these issues in further detail with representatives of the ESB. We look forward to contributing further to the development and implementation of this important area for energy policy.

## **Responses to Questions Raised in the Consultation Paper**

In the remainder of this submission, we respond to the questions raised in the consultation paper.

### **1. ESB welcome stakeholder views and input on smart charging equipment standards settings including any input to inform the likely costs**

The CEC strongly supports the use of international standards wherever practical. Where international standards are adopted as Australian standards, the experience to date has been that adoption of International Electrotechnical Commission (IEC) standards or International Organisation for Standardisation (ISO) standards is simpler than other international standards.

We would prefer to avoid creation or application of uniquely Australian standards unless there is a compelling rationale for doing so.

We are generally opposed to states and territories setting their own special and unique requirements regarding standards. State-specific approaches are often counter-productive and add costs to consumers for minimal benefit.

With that in mind, the CEC would support requirements for new EV charging equipment to include Open Charge Point Protocol (OCPP) 1.6J communications capability or higher. We note that OCPP 1.6J works with ISO 15118.

We are opposed to the recent decision by the Government of South Australia (SA) to mandate AS 4755 for EV chargers. We made our position abundantly clear in submissions to and discussions with representatives of the Government of SA and we are disappointed that they have decided to mandate AS 4755. We expect the costs of this decision will far exceed any benefits. We expect the Government of SA will ultimately regret this decision.

### **2. ESB welcome stakeholder views on the introduction of minimum EVSE equipment standards without remote management, and whether this will provide future optionality for managing peak demand**

Electrical safety requirements for EV chargers should be settled before standards for remote management are introduced. It would be very helpful if there were clarification regarding whether AS/NZS 4777.2:2020 and any other standard is required for grid connection of EV chargers, V2H and V2G chargers. This is more urgent and important than deciding on communication protocols.

The CEC maintains an [Approved Product List](#) for inverters and power conversion equipment (PCE). We publish and update a [flow chart](#) (see Attachment 1) which outlines which standards must be met by various equipment types in order to be listed on the Approved Products List based on our interpretation of AS/NZS 4777.2:2020 requirements, which was developed in consultation with industry and standards experts. It would be extremely helpful if policy makers, regulators and industry could agree on an update to this flow chart to include EV chargers and the flow chart should have national application. It is not helpful to have one flow chart for SA, for example, and another flow chart for other states.

### **3. ESB understands that most EVSEs on the market today come with smart charging as a minimum functionality – is this the case or do stakeholders see this as still an emerging functionality?**

At this point, the CEC is not closely monitoring the functionality of EV chargers on the market. Organisations like the Electric Vehicle Council (EVC) are better placed to provide an insight into the state of the EV charger market.

**4. What are stakeholder views regarding the adoption of these standards in the Australian context? Do stakeholders consider the OCCP1.6(J) the most appropriate international standard to adopt? Are there additional standards or options that should be considered in the short term?**

Electrical safety requirements for EV chargers should be settled before standards for remote management are introduced.

International standards should be used wherever practical.

If policy makers feel there is an urgent need to set a minimum communications protocol today, then OCPP 1.6J would be the appropriate choice, provided this is done in such a way that we do not exclude or complicate the use of more suitable standards that might emerge over time. That said, we reiterate that reaching broad agreement on electrical safety standards should be a higher priority than communication protocols.

**5. Is there a need for EV to EVSE communications (such as ISO 15118) to be minimum functionality, alongside the communications protocol from the Charge Point Operator to the EVSE (such as OCPP)? The ESB welcomes stakeholder views on why this might be necessary.**

EV to EV supply equipment (EVSE) communications is already a solved problem in the context of domestic charging. The ESB does not need to consider ISO 15118 for EV to EVSE communication.

**6. The ESB welcome stakeholder views on requiring default tariffs at the point of installation of a charging system. Do stakeholders have views on the merits of using network specific windows of time, or are state-wide defaults more appropriate?**

As a general principle, the CEC is opposed to the practice of mandating tariffs based on the appliances owned by consumers, whether the appliance is a rooftop solar system, a battery or an EV. Applying default tariffs to smart EV chargers could have unintended consequences, by incentivising use of 'work arounds'. We prefer tariffs to be 'opt in' or 'opt out' rather than mandatory. Where tariffs are mandated, they should apply to all customers without discrimination on the basis of the appliances they own.

It would be premature to mandate default tariffs for EV chargers. The rule change proposal for 'flexible trading arrangements' has been lodged with the Australian Energy Market Commission (AEMC) and the process for consideration of the rule change proposal has not yet commenced. The decision regarding 'flexible trading arrangements' will (or at least, should) be a material consideration in relation to the question of default tariffs for EV chargers. The practice of floating multiple, overlapping reform proposals that could interact in unforeseen ways risks creating unnecessary uncertainty for customers and equipment suppliers. It would be far preferable to sequence significant policy reforms in a logical way.

**7. The ESB welcome stakeholder views on the appropriate timing considerations to enable a roll out of minimum technical standards for domestic EV charging systems. Do stakeholders see other considerations that need to be taken into account to facilitate jurisdictional policy settings?**

It is more urgent and important to resolve electrical safety standards than to consider communication and remote control of EV chargers. The AS/NZS 4777.2:2020 inverter standard is mandated through the National Electricity Rules (NER) and enforced using a combination of jurisdictional electrical safety regulations, distribution network service provider (DNSP) connection agreements and the CEC Approved Products List.

The CEC understands that Standards Australia is about to commence a review of AS 4777.1 and is also considering a proposal to update AS/NZS 4777.2:2020. This would be an opportunity to resolve

uncertainty regarding interpretation of standards as they apply to EV chargers and V2H and V2G EVSEs. We recommend that this work be prioritised over the ESB consider of communication protocols.

It is the CEC's strong preference for standards to be mandated nationally, rather than states like SA mandating their own special and unique set of requirements. AS/NZS 4777.2:2020 has been included in the NER and this model for ensuring consistency across the National Electricity Market (NEM) should be considered for EVSE standards.

We also note that once regulators have mandated compliance to a standard, a transition period is required for testing and certification. The duration transition period should take account of how the product is tested and certified, the time that this requires and the availability of suitable test labs and certifiers in Australia and overseas.

#### **8. What are stakeholder views regarding the potential costs and benefits of requiring consumers to participate in remote coordination capabilities for EV smart charging?**

Detailed cost-benefit analysis should be undertaken before mandating any new regulatory requirements. The AEMC has the appropriate processes in place to ensure transparency, consultation and cost-benefit analysis. This is one reason why the CEC would prefer standards to be adopted in the NER. This approach is far preferable to states like SA mandating standards with inadequate consideration of the potential costs, benefits, risks and unintended consequences of their actions.

Potential benefits for consumers that could be considered in a future exercise in cost-benefit analysis could include better scheduling of peak and off-peak demand and supply, and cheaper tariffs for charging EVs at off peak times. Potential costs could include the requirement for consumers to maintain a stable internet connection for remote communication, and costs relating to cyber security arrangements. A potential risk is that a significant section of the EV industry and their customers might strongly oppose moves to mandate external orchestration of EV charging. A potential unintended consequence of mandating external control is that it could encourage customers to charge from a household wall outlet instead. It is unclear how regulators would prevent customers from using this simple 'work around' to circumvent mandatory orchestration.

The creation of unnecessary controversy regarding EV policy would risk setting Australia even further behind in EV uptake compared with overseas markets that have simpler and less expensive regulatory obligations.

#### **9. What are stakeholder views in regard to the use of CPOs for residential charging? What are stakeholder views on which parties (Traders (retailers/aggregators), DNSPs, OEMs, other parties) should be able to take on the function of CPO? Should the requirement for a CPO be mandatory?**

To the extent that this question applies to residential EV chargers, it appears to pre-empt the decisions of the AEMC in response to the 'flexible trading arrangements' rule change proposal. This question should be deferred until the AEMC has determined its response to the 'flexible trading arrangements' rule change proposal.

#### **10. What are stakeholder views in respect of the relevant and appropriate responsibilities that should be taken on by a CPO: e.g., ensuring rate limits, customer support?**

This question seems to assume that the AEMC will support the 'flexible trading arrangements' rule change proposal and a new role of CPO for residential EV chargers will be created. It would be sensible to wait until we know whether the AEMC will enable creation of the role of CPO for residential EV chargers before we start defining the relevant and appropriate responsibilities of a CPO.

**11. What functions would CPOs be required to perform on behalf of customers? e.g., off peak charging**

This question seems to assume that the AEMC will support the 'flexible trading arrangements' rule change proposal and a new role of CPO for residential EV chargers will be created. It would be sensible to wait until we know whether the AEMC will enable creation of the role of CPO for residential EV chargers before we start defining the relevant and appropriate responsibilities of a CPO.

**12. What obligations would be required by CPOs to ensure there are adequate protections for end customers?**

This question seems to assume that the AEMC will support the 'flexible trading arrangements' rule change proposal and a new role of CPO for residential EV chargers will be created. It would be sensible to wait until we know whether the AEMC will enable creation of the role of CPO for residential EV chargers before we start defining the relevant and appropriate responsibilities of a CPO.

**13. Should there be a minimum requirement to capture installation of EVSE, to assist with effective planning and operational management, similar to that already in place for solar?**

It would assist network planning if the locations of EV chargers are known. However, the analogy with solar only applies insofar as the EV charger has export (V2G) capability. EV chargers that are purely load are more analogous to air conditioners, as far as regulation and grid connection rules are concerned. Changes to regulations and grid connection agreements would be required to enable connection approval of new load by DNSPs. The CEC is not necessarily opposed to expanding the connection approval powers of DNSPs to new load. If that were to happen, it is unclear why it would be restricted to EV chargers. Air conditioners, pool pumps and other forms of new load could equally be captured by DNSP connection agreements with requirements for interoperability.

**14. Are there any minimum technical requirements that should be considered for EVSE interoperability?**

We are not aware of any additional minimum technical requirements needed for interoperability at this time.

**15. Do stakeholders have any views on aspects of cybersecurity for EV charging that are specific to Australia, or that would require a departure from European and/or US standards?**

We are not aware of any aspects of cybersecurity for EV charging that would require a departure from European and/or US standards. We strongly encourage policy makers to refrain from creating uniquely Australian standards unless there is a compelling rationale to do so.

**16. The ESB welcomes stakeholder views on barriers to existing regulatory and legislative frameworks that may be acting to limit the introduction of more advanced EV services such as Vehicle-to-home (V2H), Vehicle-to-grid (V2G) and Vehicle-to-Anything (V2X)?**

It is currently unclear which standards EV chargers are required to meet to be allowed to export to the home or to the grid. This is a barrier to the introduction of more advanced EV services.

Interpretation of standards is a vexed issue. The CEC has brought this to the attention of the AEMC and we look forward to the resolution of this issue in the AEMC's forthcoming review of governance of DER technical standards.

**17. The ESB welcomes stakeholder views on the issues raised in respect of residential charging, including whether there are further issues that should be considered?**

An objective of EV charging policy should be to encourage owners to charge EVs during daylight hours when solar energy is abundant. Key to enabling that is convenience. EV chargers need to be available where EVs are parked during daylight hours. Further consideration should be given to policies that would incentivise provision of EV charging facilities at car parks and other places where EVs are parked during daylight hours.

**18. What are stakeholder views on the use of technology specific tariffs, approved by the regulator, but operating under different metrics? What might be any unintended consequences of introducing EV CPO specific tariffs?**

As a general principle, the CEC is opposed to the practice of mandating tariffs based on the appliances owned by consumers, whether the appliance is a rooftop solar system, a battery or an EV. Applying default tariffs to smart EV chargers could have unintended consequences, by incentivising use of 'work arounds'. An EV-specific tariff could incentivise consumers to use their wall outlet instead.

**19. What measures might be helpful to consider to streamline the connections process for public charging infrastructure?**

Better visibility of their low voltage (LV) networks would assist DNSPs with their connection process. The CEC continues to urge the AEMC to amend its regulatory framework for metering services so that DNSPs have access to power quality data from smart meters, which would greatly improve DNSPs' network visibility.

**20. Aside from the grandfathering issues noted for existing equipment, are there any other metrology issues concerning public EV charging that should be considered?**

Standards should not be applied retrospectively.

**21. What mix of arrangements might facilitate flexibility in charge point pricing to encourage more drivers to charge during times of excess renewable energy?**

Convenience rather than pricing is likely to encourage EV owners to charge during daylight hours. It doesn't matter how low the tariff for EV charging is during daylight hours if there is no EV charger available where EVs are parked during the day. 'Range anxiety' is no longer the barrier to EV uptake that it once was, but 'charger anxiety' remains an issue. EV drivers with a low battery will wonder whether the charger will be working when they get to it, or whether all the available chargers will already be in use. More EV chargers are needed in the places where EVs are parked during daylight hours.

**22. What do stakeholders view to be important considerations for ensuring protections are fit for purpose for consumers using public EV chargers with regard to payments and associated disputes?**

Begin with a clear definition of roles and responsibilities for all the actors involved.

**23. The ESB welcomes stakeholder views on when they consider the issues associated with roaming might become a policy issue to address in Australia?**

Issues associated with roaming are not an area of CEC's expertise.