

9 February 2023

Anna Collyer
Chair
Energy Security Board

Dear Ms Collyer,

RE: Energy Security Board Electric Vehicle Supply Equipment Standing Data consultation paper

SwitchDin welcomes the opportunity to provide feedback to the Energy Security Board (ESB) consultation paper on electric vehicle supply equipment (EVSE) standing data.

SwitchDin is an Australian energy software company that bridges the gap between energy companies, equipment manufacturers and energy end users to integrate and manage energy resources on the grid. SwitchDin's technology enables our clients to build and operate vendor-agnostic virtual power plants (VPPs) and microgrids, and to optimise performance across fleets of diverse assets. Founded in Newcastle NSW in 2014, SwitchDin operates in all states of Australia, including in leading-edge distributed energy projects like Simply Energy's national VPP, flexible export programs in South Australia (SA) and Victoria, Project Symphony in Western Australia (WA) and the Solar Connect VPP in the Northern Territory (NT), among others.

SwitchDin understands the value that a national EVSE database could provide for system planners and managers. We support the ESB's objectives, but we do not support the proposed implementation approach. The ESB proposal to expand the Distributed Energy Resources (DER) Register to include EVSE standing data would have a high chance of failure due to poor reporting compliance unless significant changes are made in the governance and regulation of consumer energy resources (CER).

It is understood that the Australian Energy Market Operator (AEMO) DER Register suffers from issues with the quality of data collected and that there are significant differences between DNSPs and jurisdictions in the quality of data provided to AEMO. Maintaining a database of DER installations should be much easier than maintaining a database of EV chargers because:

- There is a national rebate scheme for rooftop solar, which gives consumers (or their agents) a strong incentive to do their paperwork. There is no national rebate scheme for EV chargers.
- Rooftop solar systems require grid connection approval. Many EV chargers do not.
- Rooftop solar can only be installed by accredited solar installers. EV chargers can be installed by licensed electricians.

If the quality of data in the DER Register regarding rooftop solar installations is less than satisfactory it would be unwise to extend it to EV chargers (which will be more difficult) until we have considered the cause of the DER Register's problems and how to address them.

We are not aware of any published reviews of the operation of the DER register, the quality of its data and areas for improvement. We would urge this as a first step, prior to expanding the coverage of the DER Register.

As distribution network service providers (DNSPs) and inverters become increasingly interoperable, there is an opportunity to significantly improve the quality of data. Data about installed CER could be collected or verified in the commissioning stage, when communication between the CER and the DNSP utility server is established. An important milestone in these reforms will be on 1 July 2023, when new CER connections in South Australia will be required to demonstrate they are interoperable with the SA Power networks utility server.

If the ESB continues to develop the proposal for a national EVSE database, its next step should be to assess what data about CER devices (including EV chargers) can be collected remotely and digitally by the DNSP and the steps required to enable that to happen. It should also consider the scope to utilise jurisdictional processes, such as vehicle registration and the Certificate of Electrical Safety, to avoid duplication of data collection processes.

These issues are elaborated upon in our submission. Thank you for the opportunity to respond to these important issues. I remain available for further discussions and inputs.

Best regards,

Darren Gladman
Head of Policy and Regulatory Affairs

Key Recommendations

1. Consider leveraging existing jurisdictional processes for data collection, such as vehicle registration and the Certificate of Electrical Safety.
2. Review the operation of the DER Register, the quality of the data held, the differences in the quality of data provided by DNSPs to AEMO, and the reasons for the differences.
3. Based on the findings of the review, develop a work program for improvements to the DER Register.
4. Evaluate the feasibility of improving the quality of data in the DER Register using remote, digital verification.
5. Do not expand the coverage of the DER Register to EVSE until the data quality issues facing the DER Register have been reviewed, findings are published and an action plan to address the major issues has commenced.

Responses to questions raised in the consultation paper

1. Are the key use cases for EVSE standing data adequately captured and described?

Yes.

2. Are the listed considerations for data collection appropriate?

The listed considerations should also include whether the data can be collected and verified remotely and digitally or if it is dependent upon on-site data collection and manual data entry. On-site data collection and manual data entry should be minimised and, where possible, avoided completely. Remote, digital data collection and verification should be used wherever possible.

The ESB should obtain advice regarding the updates to the Australian Common Smart Inverter Profile (CSIP-Aus) required to enable remote collection and verification of data for the DER Register.

3. What data fields should or should not be collected, and why? What is the minimum set of data required to facilitate the above use cases?

Suggesting an ideal list for data that could be held by the DER Register is not a helpful exercise if it does not consider the procedures for collecting the data and the likelihood that the proposed data collection procedures will be successful. There should be less emphasis on the ideal database structure and far more consideration of the process of data collection and enforcement of reporting obligations. Any decision to add new fields to the DER Register should consider whether data for the new fields can be collected or verified digitally or if it would require on-site data collection or verification.

We recommend analysing the data sought and the potential for collecting or verifying it remotely. The data could be categorised accordingly:

1. This data is already collected remotely, e.g. by SwitchDin, original equipment manufacturers (OEMs) and others
2. This data could be collected remotely if necessary but would need development of new systems or software
3. This data could be collected remotely but would need changes to CSIP-Aus (or possibly IEEE 2030.5) and development of new systems or software
4. This data will probably never be collected remotely

This analysis could be used to assist policy makers with setting realistic requirements for additional data reporting, setting realistic timelines for new reporting requirements, prioritising improvements to CSIP-Aus (or possibly IEEE 2030.5) and relieving inspectors of the need for some manual, on-site inspection.

For network planning, the main data required will be the location and maximum load of EV chargers with respect to network assets. This suggests a minimum necessary data set would include:

- Location
- Maximum load of the EVSE, and
- Number of phases supplying the EVSE.

4. How can timely and accurate reporting of EVSE installation data best be supported?

Timely and accurate reporting of EVSE installation data would be supported by the following actions:

- Allocate clear roles and responsibilities,
- Assess lessons learned from the implementation of the DER Register,
- Consider the role of DNSP processes on data collection,
- Use remote, digital data collection and verification, and
- Work towards data sharing agreements with jurisdictional regulators.

Allocate clear roles and responsibilities

Governance of CER in the National Electricity Market (NEM) is a muddled mess. Roles and responsibilities are poorly defined, leading to major gaps in the compliance and enforcement framework. The Australian Energy Market Commission (AEMC) review of CER technical standards is an opportunity to clarify governance arrangements.

Assess lessons learned from the implementation of the DER register

If the operation of the DER Register has already been reviewed, we urge publication of the results and recommendations. If this has not yet happened, then a review should be initiated.

Consider the role of DNSP processes on data collection

Understanding DNSP processes is the key to improving the quality of data in the DER Register. A key consideration regarding the quality of data provided for the DER Register is whether data is collected by the DNSP during the application process for grid connection approval or if the data entry is left to the installer after installation is complete. A review of the effectiveness of the DER Register would provide an opportunity to consider improvements to DNSPs' data collection processes.

Use remote, digital data collection and verification

In future, digital collection and verification will replace manual, on site inspection. The current and potential barriers to remote data collection and verification should be documented.

Work towards a data sharing agreements with jurisdictional regulators

Data sharing agreements between AEMO, jurisdictional electrical safety regulators and motor vehicle registration bodies would enable use of information that is already collected.

Vehicle registration data regarding the usual garaged address of vehicles would assist with identifying where EV charging is happening without the installation of EVSE, which currently constitutes a majority of domestic EV charging activity. Linking with vehicle registration data would enable tracking of mileage (which is reported at registration renewal). Mileage and postcode data will be invaluable for grid planning.

Jurisdictional electrical safety regulators could also be a useful source of data, noting that this might require the addition of a new question to the Certificate of Electrical Safety which is completed by electricians for every job.

5. What else could a National EVSE Database be used for, in addition to supporting EVSE standing data collection processes?

The proposed database would have a better chance of success if the initial design is focused on the 'biggest bang for buck' i.e. what systemwide benefit can be achieved within the constraints of the current governance and systems of data collection. If the initial design sets out to incorporate a wishlist without adequate consideration of the plausibility of the proposal, it will likely fail.

6. What governance arrangements are needed to ensure the appropriate operation of a National EVSE Database?

Consideration of governance arrangements should begin with the question of enforcement. Who will be responsible for enforcing the obligation to report installation of EVSE? What will be the consequence for electricians if they do not report the installation of EVSE? Will there be an incentive to report?

The first step should be to understand and document the lessons learned from the implementation of the DER Register. Incorporating EV chargers into a national register will be much more difficult than maintaining a register of CER because there are no national rebates for EV chargers, there is not always a requirement to apply for grid connection approval and there are far more electricians licensed to install EV chargers than there are accredited solar installers. If DNSPs and AEMO face challenges regarding the quality of data captured in the DER Register, it is unrealistic to simply expect that an expanded Register that includes EV chargers will be effective under the current reporting and governance arrangements.

The challenges related to data reporting are a small subset of the challenges regarding compliance with and enforcement of CER technical standards in the National Electricity Rules (NER), which are being reviewed by the AEMC. We concur with the AEMC's assessment that devices are largely complying with the standard at the manufacturing stage and that the difficulties lie with compliance and enforcement of CER technical standards at the installation stage. This highlights the risk of relying on on-site, manual reporting by installers.

In the consultation paper for its review of CER technical standards, the AEMC is clear that the DNSP is the responsible party for determining whether CER complies with technical standards via the connection arrangements. The consultation paper (p.24) states:

“In the context of the NER, the final determination on DER technical standards stated:

Placing the standard in the NER places an obligation on DNSPs to ensure the standard is met. This triggers the AER's existing capability to monitor and enforce this obligation.”

This clarification is an important first step. The AEMC is clear that the DNSP is the responsible party for determining whether CER complies with the technical standards via the connection agreements. However, DNSPs might not have interpreted their role in this way. We understand, for example, that SA Power Networks is considering proposing expenditure for enforcement of technical standards in its next regulatory period, whereas the DNSPs in New South Wales (NSW), the Australian Capital Territory (ACT), Northern Territory (NT) and Tasmania have not done so. It is unclear whether this reflects differences in the interpretation of the NER, willingness to undertake an enforcement role, urgency of the enforcement issue or all the above.

There is much room for improvement in connection approval processes, which are largely determined by DNSPs rather than jurisdictions. For example, all DNSPs in NSW should follow the example of DNSPs in other jurisdictions by requiring connection approval and data collection for CER systems prior to installation. NSW is out of step with the rest of the country. This is the logical place to begin if we are going to have a regulatory framework enforced through the power of the connection approval process.

To assist those DNSPs preparing to undertake an enforcement role, SwitchDin has recommended to the AEMC that it should review the NER to ensure there is no regulatory barrier to DNSPs requiring data from OEMs (or their partners and agents) to verify compliance of the OEM's fleet of inverters. This could be extended to consideration of whether DNSPs can require data from EVSE OEMs.

If DNSPs do not have the tools at their disposal to discharge their enforcement obligations under the NER (including reporting obligations for the DER Register) then the AEMC should consider what changes are needed to enable DNSPs to do so. There are simple and inexpensive solutions to monitoring and verification that may be applied at the time of installation. This is a problem that could

be solved relatively cheaply and quickly, provided the AEMC clarifies and, if necessary, strengthens the enforcement powers and capabilities of DNSPs.

The current regulatory framework hinges on the connection agreement, which is between the DNSP and the customer. This leaves the DNSP with the unusable enforcement option of disconnecting the customer due to non-compliance by the installer.

If DNSPs are given responsibility for enforcement (including enforcement of reporting obligations), they will need tools to ensure compliance by CER installers. This could include clarifying whether DNSPs have the power to refuse connection agreements with CER retailers or CER installers who have a previous record of persistent non-compliance.

Alternatively, the role of the CER installer, CER retailer and the original equipment manufacturer (OEM) could be defined in the NER. This would enable the AER to regulate installers and OEMs directly, rather than indirectly via DNSPs.

We recommend the ESB revisit this question of governance after the AEMC publishes its draft report of its review of CER technical standards.

7. Are there any other reporting triggers that have not been considered?

Where there are rebates for EV chargers, reporting could be made a condition of eligibility.

There might also be opportunities to use vehicle registration data to verify the probable location of EV chargers.

Jurisdictional electrical safety regulators could also be a useful source of data, noting that this might require the addition of a new question to the Certificate of Electrical Safety which is completed by electricians for every job.

8. What other advantages and disadvantages should be considered when comparing available reporting triggers?

Reporting triggers should be based on processes with sound governance, and clearly articulated and understood roles and responsibilities. Confusion regarding the enforcement role and powers of DNSPs should be clarified before new reporting obligations for DNSPs are proposed.

The practicality of proposed arrangements also needs to be considered. Verification that requires on site inspection and verification is unlikely to be practical.

The cost of data collection also needs to be considered. Will DNSPs be able to claim the data reporting role as part of their operating expenditure?

9. Is it agreed that networks could impose a requirement for EVSE standing data reporting, through an amendment to the service and installation rules?

Perhaps they could, but would this work? How would they enforce this?

The problems that have been experienced by the DER register won't be solved by suggesting that DNSPs could add the new reporting requirements to their service and installation rules. Proper consideration needs to be given to how data is collected and who is responsible for enforcement. It is unhelpful to design 'ideal' databases in isolation from consideration of how to collect the data.

South Australia (SA) will be the first jurisdiction to mandate flexible export capable inverters and SA Power Networks will be one of the first networks to establish a utility server using CSIP-Aus. From 1 July 2023 all new CER connections to the grid must demonstrate interoperability with the SA Power Networks utility server. The ESB should consider the SA Power Networks initiative and opportunities to leverage it for demonstrating use of DNSP-CER interoperability for reporting and verification.

10. Is it accepted that an expanded DER Register should be the database system for collection

and sharing of EVSE standing data?

No. It is unclear whether the operation of the DER register has been successful. If it has not been successful, its problems should first be addressed before its scope is expanded. Otherwise, we would be building the national EVSE database on a shaky foundation.

11. What preferences or issues do stakeholders have regarding the described regulatory options? If a rule change is needed to achieve EVSE standing data collection, do you consider the rule change would be likely to have a significant effect on the National Electricity Market?

The risk with state-based implementation is that data collection processes would be fragmented and inconsistent. However, where data collection processes are robust and consistent between jurisdictions (e.g., vehicle registration) then use of existing state-based data collection processes could avoid duplication.

Regardless of whether data is collected on a jurisdictional or national basis, the database should be national. It could be implemented through extension of the DER Register or the creation of a new national CER regulator.

It would be premature to propose a rule change for EVSE standing data collection now. The ESB should wait for the publication of the AEMC's draft report of its review of CER technical standards before taking any further steps regarding the EVSE database. If the AEMC can address the gaps in the governance and enforcement framework for CER technical standards, the issues with CER and EVSE data collection could be greatly simplified.

12. Is the proposed regulatory assessment framework fit for purpose?

The proposed regulatory assessment framework looks reasonable. However, it is questionable whether the ESB has applied the criteria regarding the level of compliance likely to be achieved to its proposal to expand the DER Register.