

CEC SUBMISSION TO THE DISER FUTURE FUELS STRATEGY

Executive Summary

The Clean Energy Council (CEC) welcomes the opportunity to provide feedback on the Department of Industry, Science Energy and Resources (DISER) Future Fuels Strategy Discussion paper.

The Clean Energy Council 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 rooftop solar installers, 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.

Our submission focuses on integration of battery electric vehicles (EVs) into the electricity grid. The CEC is very active in integration of distributed energy resources (DER) into the grid. EVs are a new form of DER, and the approach to grid integration of EVs is not fundamentally different to the integration of other types of DER.

When developing policies and strategies for grid integration of EVs, the highest priority consideration should be the customer. Customers must have choices and they must be able to give or withhold consent for their DER system to be used for the wider benefit of distribution network service providers (DNSPs) and the National Electricity Market (NEM).

Governance of rules for grid connection requires reform. DNSPs can set rules without any requirements for public consultation or even cost benefit analysis. A public consultation process should be undertaken prior to approval by the Australian Energy Regulator (AER) of new grid connection rules for embedded generation on the low voltage (LV) network. The consultation process should consider: the costs, benefits and risks of proposed changes; consumer impacts and equity considerations; and impacts on industry.

Energy and ancillary services should never be taken from customers without their consent. Customers should be given the choice of 'opting in' to agreements that allow them to sell energy and ancillary services, either directly or via an aggregator.

Time-of-use electricity tariffs are likely to be the simplest and most effective way to encourage motorists to avoid charging in the evening periods of high electricity demand.

Demand-based tariffs will present a significant financial barrier to public, fast-charging infrastructure in the early stages of EV uptake. One way to overcome this barrier would be government support for medium scale, DNSP-owned batteries able to smooth power flows on feeders supporting public, fast-charging infrastructure.

We would be very happy to discuss these issues in further detail. We look forward to contributing further to this important area of strategy and program development.

Responses to Questions in the Discussion Paper

1. What are the highest priority issues to consider when integrating large numbers of battery electric vehicles into the electricity grid?

The customer should be at the centre of considerations when developing policies and strategies for grid integration of EVs.

EVs have significant potential to assist with management of the electricity grid and distribution networks. When designing policies for grid integration some policy makers have placed the needs of the Australian Energy Market Operator (AEMO) or the DNSPs at the centre of their policies. We must never take the customer for granted.

Customers must have choices and they must be able to give or withhold consent for their DER system to be used for the wider benefit of DNSPs and the NEM.

A recently published [study by Energy Consumers Australia \(ECA\)](#) has acknowledged that if networks and market operators want remote control of distributed energy resources (DER) they will need to gain and maintain the 'social licence' to do so. The best way to achieve that will be to design schemes whose private benefits outweigh the private costs and let consumers choose whether they participate.

The ECA Report supports voluntary programs in preference to mandatory requirements. It recommends establishing markets for DER services so that consumers can respond to price signals. Consumers should always be allowed to opt-out.

Where mandatory schemes are unavoidable, consumers should be compensated for any private costs and those suffering high costs should be exempted. All programs must explain their public benefits and private costs.

The report suggests these principles be applied to DER technical standards, proposals for a two-sided market, grid connection rules, export limits, dynamic operating envelopes, and schemes for demand response and to address minimum demand. All these issues are highly relevant to the grid integration of EVs.

Grid connection approval processes are fundamental to enabling or depriving customers of choice. Governance of rules for grid connection is not best practice. DNSPs can set rules without any requirements for public consultation or even cost benefit analysis. The CEC supports the introduction of measures to enable a more intelligent, fair, and equitable distributed energy system. It is crucial that social licence for these kinds of innovations is established. To that end, we recommend that a public consultation process should be undertaken prior to approval by AER of new grid connection rules for DER on the LV network. The consultation process should consider: the costs, benefits and risks of proposed changes; consumer impacts and equity considerations; and impacts on industry.

2. What further action is needed to ensure consumers and the electricity grid can benefit from bidirectional charging technology?

New market frameworks are needed to ensure that consumers and the electricity grid can benefit from bidirectional charging technology. The key principle underpinning the design of the new frameworks should be that energy and ancillary services should never be taken from customers without their consent. Customers should be given the choice of 'opting in' to agreements that allow them to sell energy and ancillary services, either directly or via an aggregator. Grid connection agreements should not require consumers to provide energy or ancillary services without remuneration as a condition of grid connection, except for rare and well-defined emergency situations.

3. What are the opportunities for tariff innovation or reform to support the rollout of public charging infrastructure?

Demand-based tariffs will present a significant financial barrier to public, fast-charging infrastructure in the early stages of EV uptake. Economies of scale are needed to overcome this financial barrier and significant market uptake will be required to achieve those economies of scale.

Interim arrangements should be considered as a means of enabling the establishment of public fast-charging infrastructure. This could, for example, involve government support for medium scale, DNSP-owned batteries able to smooth power flows on feeders supporting public, fast-charging infrastructure. These batteries would also be able to be used to reduce network expenditure and provide other customers on the same feeder with value-added services such as storage-as-a-service for DER owners with excess electricity during daylight hours.

4. How could motorists be incentivised to charge their batteries outside periods of high electricity demand to help keep prices low?

Motorists should be encouraged to charge their batteries during daylight hours when there is an abundance of solar-generated electricity on the network, and they should be discouraged from charging their batteries in the evening periods of high electricity demand. The simplest and most effective way to achieve this is likely to be time-of-use electricity tariffs coupled with smart home EV chargers. In the UK, where EV charging integration is more advanced, governments encourage the use of smart chargers through rebates for their installation. For example, the UK Electric Vehicle Homecharge Scheme provides funding of up to 75% towards the cost of installing EV charge points at residential properties and there is a voucher-based scheme towards the up-front costs of charge points at workplaces.

Several DNSPs are developing technology to enable 'Dynamic Operating Envelopes', which would constrain electricity imports and exports at times of network congestion. Dynamic Connection Agreements could be an alternative or could complement time-of-use electricity tariffs as a strategy for ensuring that motorists charge their batteries outside periods of high electricity demand.