

Inquiry into the Transition to Electric Vehicles

Supporting Consumer Energy Resources

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11 March 2024



Master Electricians Australia (MEA) is the trade association representing electrical contractors recognised by industry, government and the community as the electrical industry's leading business partner, knowledge source and advocate. You can visit our website at www.masterelectricians.com.au

As strong advocates for consumer energy resources (CER) and the significant role Electric Vehicle (EV) batteries have in optimising its benefits, MEA supports initiatives which encourage greater consumer adoption of EVs. While our expertise is limited to the role of EVs within CER, we are taking the opportunity to respond as an industry signal of support for the transition to EVs. Moreover, MEA believe CER provides solutions to some current limitations EVs face.

Electric Vehicles (EVs)

Problems

Limited Charging Facilities

We note the growing prevalence of EVs and the strain this will put on our grid. The escalating demands for EV charging will jeopardise the stability, reliability and affordability of our traditional energy supply.

Network Grid Constraints

These challenges will be exacerbated with the ongoing population growth observed in Australia. This problem will be compounded by the limited availability of charging stations available to consumers only intensifying the charging resource capacity as the number of EVs increase.

Solutions

Bi-Directional Charging

MEA strongly believes bi-directional charging is the solution to charging constraints and see it imperative that any future policies and legislation incorporate and promote the ability for household bi-directional charging. The current network infrastructure enables one-way energy supply, however, with EV batteries consumers can participate in a two-way energy supply chain by using the stored excess energy, from the large capacity batteries in EVs for household consumption (thereby reducing the evening peak demand) or exporting back to the grid for a financial return.

Time-of-Use (ToU) Tariffs and Home Charging

There is an expectation that Government facilitates ToU policies which provide price signals to consumers when to store, utilise or send excess energy back to the grid. The benefits of consumer energy resources (CER), which EV batteries are integral to, cannot be fully optimised without ToU tariffs. ToU tariffs will likely further incentivise consumer adoption of EVs if they are educated towards the additional capabilities their vehicles can provide in reducing power costs. Encouraging as many EV owners as possible to charge at their home or business will lessen the reliance of EV owners to utilise public chargers., It will also spread the load of charging and the export of future bi-directional EV capacity more evenly across the distribution network.

Benefits

Cost-Saving

Consumers gain the ability to take control of their energy and enables domestic and commercial and industrial (C&I) customers to enter into trading arrangements that time shift loads, using power (soaking) when it is cheapest for flexible loads (hot water, ovens, EV charging, etc) and delivering power back (sourcing) from storage sources (batteries, bi-directional EV's) when energy prices are higher, giving households and businesses the ability

to pro-actively reduce their overall power costs. This assists in providing sustainable economic growth as energy bills will be reduced thereby increasing household disposable income.

The dream of changing the energy demand curve (the so called “ducks back”) by taking the excess/cheap energy produced in the middle of the day, and using it during times of peak demand, thereby flattening the demand curve and stabilising electricity prices can be realised in a reasonably short time period if we make some rational, sensible decisions. The technology is here now, regulations and policies just need to catch up.

Emissions Reduction

EVs not only contribute towards achieving International, State and Federal emissions reduction targets by offering alternatives to fossil-fuel vehicles but also diminish consumer dependence on traditional grid-network supplied energy, which relies on fossil fuel. The reservoir of surplus solar energy available for households serves as a viable alternative, substantially mitigating carbon emissions.

Conclusion

MEA supports the transition to EVs in an effort to increase the number of EVs in Australia. Solar PV, fixed home batteries, and EVs complement each other, with Solar PV mitigating charging infrastructure problems and EV batteries providing a reservoir to store excess solar energy. Overall, both contribute towards increasing households' disposable income while reducing carbon emissions.

We hope to see further regulatory development regarding EV infrastructure consider the benefits of solar PV, ensuring that bi-directional charging capabilities are integrated into the network as a readily available option, increasing the amount of dispatchable energy in the NEM.

We appreciate the opportunity to participate in the inquiry and hope to be a part of any further discussion.