

Emissions Reduction and Resilience Plan – Transport Consultation Draft

Leveraging Electric Vehicles to Maximise
Energy Cost Savings for Consumers

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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. Our website is www.masterelectricians.com.au

The Tasmanian Department of State Growth's *Emissions Reduction and Resilience Plan – Transport Consultation Draft* (The Draft) presents an opportunity for the State to be at the forefront of Electric Vehicles (EV) and utilising EV bi-directional charging capabilities to electrify the State, inherently reducing greenhouse gas emissions.

For the purposes of this submission, MEA will focus our recommendations to the uptake of EV's and the introduction of bi-directional EV tariffs as a matter of priority, to meet the stated objectives in the plan.

MEA believes the financial benefits derived from bi-directional charging will significantly incentive Tasmanians to adopt EVs. By educating Tasmanians how to respond to time of use (TOU) tariffs and maximise the EV battery's ability to store excess daytime energy, they can expect to experience reduced energy costs.

Additionally, the introduction of bi-directional charging tariffs resolves two issues; namely charging facility capacity constraints and reducing demand pressures on the grid as more EVs are utilised.

Please note that consumer energy resources (CER) and distributed energy resources (DER) are used interchangeably. Throughout this submission, we will refer to the technology as CER.

Relationship between Electric Vehicle Bi-Directional Charging and Consumer Energy Resources

Consumer Energy Resources (CER)

CER are used to naturally generate, store and utilise energy, and presents a mitigating solution to climate change which saves costs and utilises excess solar and other sources of renewable energy. MEA are strong advocates for policies to be implemented prioritising the installation of this technology.

Consumers gain the ability to take control of their energy and are enabled to enter into trading arrangements that could 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 (home batteries, bi-directional EV's) when energy prices are higher, giving households and businesses the ability to pro-actively reduce their overall power costs. CER is most effective for flexible loads (hot water, vehicle charging, dishwashers, pool pumps, etc) while the traditional network should continue to be utilised for inflexible loads (i.e. fridges, life support, etc).

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, the regulations just need to catch up.

Electric Vehicles (EVs)

Tasmania's emissions reduction target ... to achieve net zero green house gas emissions, or lower, in Tasmania from 30 June 2030¹ highlights the need for Tasmania's Government to ensure private and public infrastructure is designed to facilitate the increased demand on the grid. Policies to support charging stations are necessary to ensure vehicles can be charged. We believe EV's present opportunities for the energy network. Through bi-directional charging, EV batteries can be used to soak the excess supply of PV sourced during daylight hours which can be later used to charge the vehicle and supply energy for flexible loads at later points in the day as needed. Installation of EV infrastructure in homes and businesses in concert with Home Energy Management Systems (HEMS) for residential buildings and Building Management Systems (BMS) for commercial businesses would increase the stability of the network.

EVs as Home Batteries

Home batteries are necessary to optimise CER's capabilities. These enable consumers to store self-generated energy (from Solar PVs) and either soak or send back to the grid during peak demand times. We recommend government provides incentives designed to offset installation costs. EV batteries are great examples of home battery storage options which are going to become increasingly accessible as EV adoption increases.

Time of Use (ToU) Tariffs

MEA believes the best way to have consumers contribute towards reducing carbon emissions and fully embracing EVs is through introducing flexible demand time of use (ToU) tariffs which impose charges and provide rebates for CER users.

During the middle of the day, the network experiences minimum demand for energy, while CER generated energy is at its greatest. Then, during 4PM-9PM, the network experiences peak demand for energy, while CER energy is no longer generated. Implementing ToU tariffs sends prices signals to consumers when to utilise stored energy from Home Battery Storage and when to send excess energy back to the grid.

During the minimum demand window, ToU tariffs would deter consumers from sending excess energy back to the grid, preventing an oversupply of energy on the network. Then, during the peak demand window when energy rates are at their highest, ToU tariffs would provide consumers with rebates, encouraging excess energy to be supplied to the grid thereby assisting supply to meet demand.

Home Energy Management Systems (HEMS)

HEMS enable consumers to remotely control smart technology appliances. When paired with digital smart meters, consumer control is optimised. Integrating incentive policies for households and businesses to adopt HEMS could have a rapid and significant impact on Tasmania's plan to have 100 percent electric vehicle fleet by 2030². It is a powerful companion to tariff reform and home battery strategies to improve energy efficiency and will act as a strong incentive towards encouraging Tasmanians to purchase EVs.

Licensed Electrical Contractors

CER related regulations, policies and legislation should recognise the role licenced electrical contractors have in being at the forefront Tasmania's transition towards net zero greenhouse gas emissions. We recommend licenced, trained and insured electrical contractors with a Cert

¹ Department of State Growth *Emissions Reduction and Resilience Plan – Transport Consultation draft* October 2023, 3.

² (n1), 14.

IV in PV and CEC Accreditation are used to install the following in residential and commercial residences:

- Solar PV installations
- Smart meters (to replace traditional meters)
- Secondary settlement points
- Home batteries
- Comprehensive versions of BESS

Utilising the private electrical industry for energy transition in Tasmania will assist in reducing connection times, improve consumer experience, reduce smart-meter roll out costs and help facilitate a swifter transition to a responsive electricity grid that can take advantage of CER policies.



Conclusion

To achieve Tasmania's target of net zero greenhouse gas emissions or lower by 30 June 2030, MEA strongly advocate that the Tasmanian Government continues in its efforts towards actioning bi-directional EV charging.

With the anticipated uptake of EVs, there is going to be a greater need to integrate bi-directional charging infrastructure within residential and commercial premises. Not only will this reduce demand pressures on the grid, but will also act as easily accessible home battery storage units. Introducing EV bi-directional policies is the sensible solution to easily foreseeable grid stability and charging capacity issues.

When utilised in combination with Time of Use tariffs, Home Battery Storage and Home Energy Maintenance Systems, consumers are incentivised to source their own energy through CER and store it until peak demand time. They are faced with the choice to utilise the energy to avoid paying high prices or send back to the grid to receive rebates. These financial incentives will alter consumer behaviour to invest in EVs, thereby inherently reducing carbon emissions.

MEA look forward to seeing the future of Tasmania's reduced carbon transport and hopes to have provided valuable insight towards the benefits of legislating CER infrastructure to achieve 100 per cent electric fleet by 2030.³

³ (n1), 14