

**Submission
No 2**

INQUIRY INTO CLIMATE CHANGE (NET ZERO FUTURE) BILL 2023

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Climate Change (Net Zero Future) Bill 2023

Leveraging CER to Combat Climate Change

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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

MEA supports the Climate Change (Net Zero Future) Bill 2023 (the Bill) and its "targets for reducing net greenhouse gas emissions" set out in cl 9(1). Whilst we appreciate the Bill is focused on establishing targets and creating a Commission, we strongly urge the implementation and integration of consumer energy resources (CER) to be the Commission's prioritisation in achieving the targets stated under cl 9.

Throughout this submission we will advocate that CER will address climate change in a fiscally responsible way which promotes sustainable economic growth through reduced energy bills and greater employment opportunities as per cl 8(4) and cl 8(8)(f). We will highlight CER's capabilities of producing clean energy aligned with cl 5 and explain CER's resilience qualities against climate change events, such as bush fires and storms, which cause disruption to the distribution lines and power plants to achieve the 'adaptation objective' under cl 10.

Finally, we will advocate that a streamlined and integrated VET secondary school curriculum is key to improving education and skills diversification to achieve cl 8(8)(d).

CER

[What is CER?](#)

CER are numerous privately owned assets used to naturally generate, store and utilise energy in the most efficient manner (fulfilling cl 8(5)) making them a resilient solution to power outages which occur from climate related events such as bushfires and storms (in line with cl 8(3)). Implementing CER relieves the need to invest in as many big generation and transmission projects, whilst utilising the existing infrastructure (existing poles and wires in our cities and towns) that the community has cumulatively paid for over the last century, aligning it with cl 8(4)(a).

Examples of DER include:

- Rooftop solar photovoltaic units (Solar PV)
- Wind generating units
- Battery storage
- Electric vehicle (EV) batteries.

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. CER external load control should be limited to flexible loads while the traditional network should continue to be utilised for inflexible loads (i.e., fridges, life support, etc). As required under cl 8(4)(b), 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, and the workforce of electrical businesses across NSW stand ready to make it happen.

[Digital Smart Meters](#)

Digital smart meters provide consumers with the measurement infrastructure, designed to promote choice and efficiency in the delivery of energy to the end point consumer. Unlike traditional meters, smart meters allow for real time measurement and control of energy use. MEA believes these are necessary for achieving NSW's commitment towards reducing greenhouse gas emissions stated in cl 9(1).

MEA recommend that licenced electrical workers are trained and recognised as Accredited Service Providers (ASPs) and used to help rapidly replace traditional meters with smart meters. This would reduce 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.

[Solar PV](#)

Solar PV is becoming increasingly popular amongst residential and commercial buildings thereby making it easier for NSW to implement solar installation. We recommend such policies are introduced in concert with home battery and EV charging requirements.

A concerted effort should be made to maximise efficient use of the large stocks of rooftop solar already in the market to shift the oversupply of generation during the day, to peak usage times in the early evening.

We recommend licenced electrical contractors with a Cert IV in PV and CEC Accreditation are used to provide homes and businesses with Solar PV installations and battery installs.

[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.

Licenced, trained and insured electrical contractors are the essential workforce needed to install batteries for consumers.

[Home Energy Management Systems \(HEMS\)](#)

HEMS enable consumers to remotely control smart technology appliances. When paired with digital smart meters, consumer choice is optimised. Integrating incentive policies for households and businesses to adopt HEMS could have a rapid and significant impact on NSW net zero targets. It is a powerful companion to tariff reform and home battery strategies to improve energy efficiency, time shift energy, and decrease emissions across NSW.

There are relatively inexpensive plug and play system that a homeowner can install, or more comprehensive solutions that can be wired to control fixed loads such as hot-water and air conditioning and integrate their use with solar production. The Bill should give recognition that the more comprehensive options must be installed and set-up by a licenced electrical contractor.

[Electric Vehicle \(EVs\)](#)

Electric vehicle policies will assist with reducing carbon emissions. This will, however, naturally present challenges and opportunities for the electricity grid. An increase in EVs will see significantly more renewable energy production required to service energy needs. Conversely, it will also mean that existing oversupply of PV capacity during daylight hours will have the ability to be soaked and the possibility of being dispatched during times of need.

We recommend introducing bi-directional charge enabled vehicles as an option for consumers which will provide the benefits of soaking load for periods of daytime oversupply and be a dispatchable reservoir of power during periods of undersupply.

Installation of EV infrastructure in homes and businesses in concert with HEMS for residential buildings and Building Management Systems (BMS) for commercial businesses would increase the stability of the network.

Licensed and trained electrical contractors should be at the forefront of delivering this capacity.

[Private Asset Maintenance](#)

If the grid is going to become reliant on CER, then minimum standards of safety and reliability on anyone receiving Feed in Tariffs (FIT) should be included in the Bill. An increase in the prevalence of DC isolator failures, high penetration of solar PV systems and the expected increase in the installation of home batteries and vehicle chargers makes it necessary to ensure that these assets are safe for consumers and reliable for the stability and capacity of the grid.

MEA recommends including mandated inspections on grid connected solar and battery systems receiving FIT. Performance of these inspections should be legislatively restricted to licensed electrical contractors every five years. We suggest funding of inspections is covered by levying a monthly fee on consumers' electricity bills and administered by the retailer.

[Vocational Education Training \(VET\)](#)

Under cl 8(8)(d) there is a recognition of the "need for education and skills diversification". MEA supports this and stresses its importance for achieving and maintaining electrification to achieve a net zero future. However, Australia is currently facing a skills shortage. Throughout many submissions, MEA have strongly advocated that integrating VET training into the secondary school curriculum with an equal weighting to Australian Tertiary Admission Ranking (ATAR) rankings is one of the solutions to both gender diversity and skills shortages issues. The current schooling system moulds students to fit an academic structure, leaving behind those who are unwilling or unable to conform. Providing exposure and targeted training provides all students equal opportunities for future success by providing a supportive and encouraging environment.

The benefits of VET secondary school courses include better equipped personnel entering the workforce, enhanced aptitude and competency screening, heightened attraction and retention and greater diversity in the workplace through early exposure in a supportive environment. MEA sees this as a pivotal tool in supporting societal, structural and systemic change with regards to non-traditional cohorts entering trades. There are well established pathways in VET to attain higher qualifications at Diploma and Advanced Diploma level, satisfying pre-requisites and RPL for Tertiary Degree qualifications.

Conclusion

MEA supports the NSW Climate Change (Net Zero Future) Bill 2023 as it will significantly pave the way towards reducing emissions. While we appreciate this Bill does not cover specific policies to implement action towards the cl 9 targets, we have used it as an opportunity to emphasise what we believe should be a core priority for the Commission once established under the Bill.

CER assets provide a resilient solution to power outages which result from climate related events. As privately owned self-generating clean energy assets, they have the ability to store excess energy and be utilised in the event of power outages. Consumers gain control over the utilisation of their energy which, when combined with HEMS and home batteries, makes CER a powerful tool in significantly reducing consumer energy bills.

With increasing population and uptake of EV, enabling bi-directional EV charging will not only decrease grid demand pressures, but will also address public and private charging facility capacity issues.

MEA emphasises the vital role licenced electrical contractors have within CER integration. It is a ready workforce with the necessary base skills to perform a wider cohort of these functions. The electrical contracting industry will assist with accelerating the roll-out of CER infrastructure and MEA stands ready to assist the NSW government in addressing these challenges.

To ensure there is a pipeline of skilled workers in the future to support the implementation and maintenance of CER, we strongly recommend the NSW Government integrates and streamlines VET courses into the secondary school curriculum. This will expose STEM trades to a wider cohort, inherently increasing diversity in trades, enhancing apprentice commencement and retention rates and allow for greater aptitude and competency screening to better match the right skills with the right trade.

We look forward to seeing NSW's Net Zero Future and would like to be part of any future discussions regarding CER and VET topics.