

2024-25 Federal Pre-Budget Submissions

Leveraging CER to Combat Cost-of-Living Pressures

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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 submits it is imperative the Federal 2024-25 budget provides finances towards the following:

- Consumer Energy Resources (CER)
 - Household and Business Battery Storage rebates.
 - Upgrading State infrastructure
- Vocational Education Training in Secondary Schools (VETSS) with an equal ranking to Australian Tertiary Admission Rank (ATAR) to create a long-term sustainable workforce.

Embedding Consumer Energy Resources (CER)

The benefits of CER include:

- Clean energy production
- Resilience to weather events
- Enhanced Grid Security
- Lower electricity prices
- Increasing market competition
- Providing consumer control over their energy usage
- Reducing taxpayer expenditure

We recommend rebates be provided to households and businesses to encourage installation of CER, Home Energy Management Systems (HEMS) and Battery Energy Storage Systems (BESS). These CER assets coupled with educating consumers how to utilise these in response to time of use (ToU) tariffs, will become powerful tools in creating long-term sustainable energy prices, removing the need to provide energy bill rebates. MEA advise that the Government provide \$5,000 Home Battery rebates for consumers with a greater than 5KW solar PV capacity. This will be a significant contributor towards achieving Australia's net zero carbon emissions.

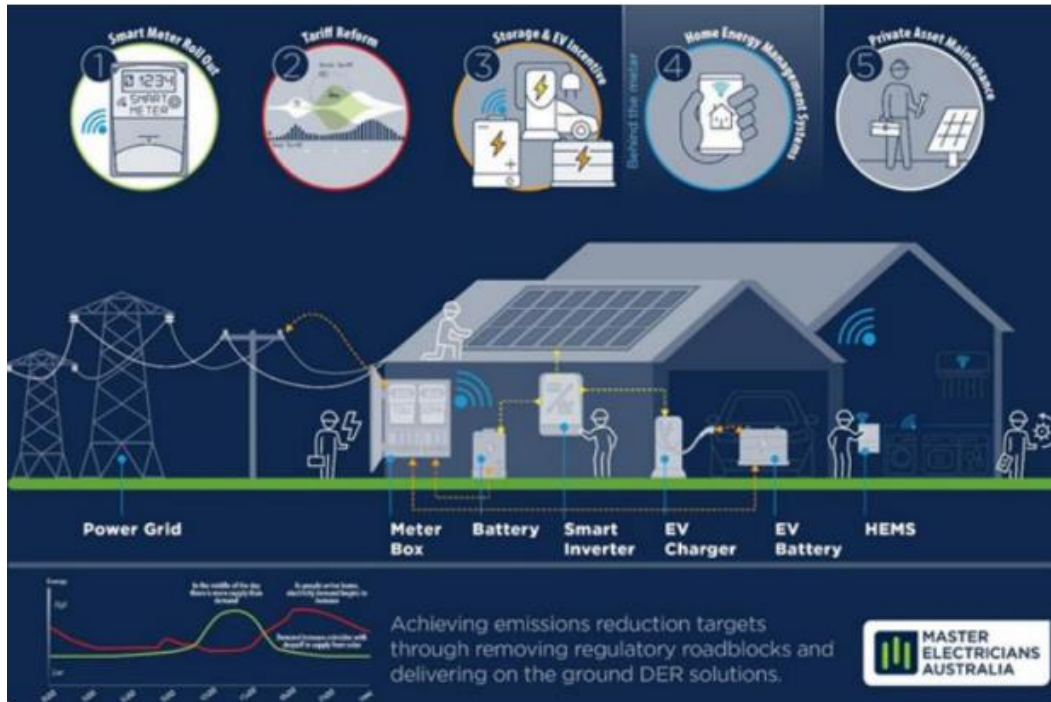
What is CER?

CER are numerous privately owned assets used to naturally generate, store and utilise energy as close to the point of generation as possible at individual consumer locations making them a resilient solution to power outages which occur from climate related events such as bushfires and storms. 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.

Examples of CER include:

- Rooftop solar photovoltaic units (Solar PV)
- Wind generating units
- Battery Energy Storage Systems (BESS)
- Electric vehicle (EV) batteries

Below is an infographic of how CER operates.



MEA believe CER will be a key action to achieving Australia’s net carbon emission targets.

[Battery Energy Storage Systems \(BESS\) Supporting CER and Resilience of the Grid.](#)

It is widely accepted that we need to increase the amount of energy storage available to the NEM to make renewables work as a reliable energy source and meet carbon reduction goals, we strongly promote a significant household and business implementation of BESS to achieve this. These enable consumers to store self-generated energy (from Solar PVs) and either soak or send back to the grid during peak demand times.

Rather than relying on large, centralised storage that needs long runs of HV transmission lines to transfer the energy to our cities and towns, BESS located in private homes and businesses installed throughout towns and cities utilising the existing distribution infrastructure can achieve dispatchable storage much more cheaply and quickly. This removes the single points of failure, and increases network resilience, whilst at the same time incrementally and progressively increasing system storage capacity with each individual system installed.

MEA are proposing for the Federal Government, in partnership with the states, to provide a \$5 000 non-means tested subsidy for 1 million BESS for households over the next 10 years, as a co-ordinated national approach to dispatchable storage delivered by CER. The BESS will need to be grid connected and subject to DNSP demand management control. The benefits of this would be -

- A cost of less than half the price of grid scale storage.
- No/limited regulatory barrier as each jurisdiction already allows BESS and has export Tariffs.
- Effects would be felt immediately and would progressively increase in scale.
- Would benefit everyone, not just those with the ability to pay.
- Benefit of program would be spread right across the country.
- Would kick start the BESS industry and bring prices down as competition increased.

There are 3.4 million rooftop PV systems in Australia, if in the next 10 years the State and Federal Governments gave a \$5000 rebate to 1 Million Australians to install a 10KW battery, it would cost \$5 Billion, if we add on a figure for administering the program and have a total budget of \$6 Billion for the scheme.

It costs approximately \$15K to install a 10kw battery in the Australian market currently. A \$6 Billion dollar program would generate \$15 Billion in economic activity, of which the GST returns alone would be \$1.5 Billion returned to the government, assuming another \$1.5 Billion from income tax on wages and company profits and you've potentially got a \$3 Billion return on your \$6 Billion dollar investment.

1 Million 10KW home batteries with an 8KW discharge depth would give you 8GW of dispatchable storage. This translates to \$1.3 Billion/ GW or \$1300/KW

Using two examples of pumped-hydro storage currently in planning or construction. Snowy 2.0 is 3.5GW, and Pioneer Burdekin is 5GW this = 8.5GW of storage. The cost of Snowy 2.0 is \$13 Billion and the cost of Pioneer-Burdekin is \$12 Billion so a combined cost of \$25 Billion or \$2.94 Billion/ GW or \$2940/KW

Pioneer-Burdekin is said to be completed in 2035 and Snowy 2.0 in 2030 and cost a combined \$25 Billion for 8.5GW of storage.

This comparison means that –

- for an outlay of \$6 Billion over 5 years from 2024, Australia could have dispatchable capacity of 8GW by 2029, with capacity increasing incrementally from Day 1 of program.
- at a cost of \$2940/KW for pumped hydro storage, and \$1300/KW for home battery storage, this equates to a 220% saving for the taxpayer. If you take into account the tax return of \$3B for the money outlaid, then it is actually \$650/KW

Other factors to consider –

- The economic benefit/activity would take place in every city and town in the country
- The storage capacity of the grid would improve each and every day going forward
- Co-investment with the Australian public
- Would strengthen the case for a domestic battery manufacturing and recycling industry
- Would reduce the need for transmission costs, as would be used at the individual home or in the surrounding suburb.

This does not factor in the likely cost blow-out of the pumped hydro project (as seen with Snowy 2.0 and the 600% cost over-runs), nor the \$1 Million/km for HV transmission line costs on top of the \$12 Billion budgeted figure. The \$5000 per consumer figure for BESS is a known finite quantity and would deliver a reliable amount of peak demand reduction for the outlaid expenditure.

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

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 recommends 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.

Electric Vehicles (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 as EVs typically have a battery of around 70KW adding up to seven times the capacity of a static home battery in addition to being a clean productive transport option.

MEA strongly recommend preferencing bi-directional charge enabled vehicles in government incentives, and for the urgent introduction of bi-directional EV tariffs in every jurisdiction of the NEM and the WEM to support integrated CER policies as outlined above. This would give an option for consumers that provides the benefits of soaking load for periods of daytime oversupply, and to be a dispatchable reservoir of power during periods of undersupply. The dispatchable storage capacity of EVs in the national private fleet, would dwarf the home BESS capacity rapidly should this be adopted as government policy. Currently DNSPs are seeing EVs as primarily a threat to the grid, but if policy and regulation caught up to the rapid uptake of EVs they would become an invaluable asset to the grid.

Installation of EV infrastructure in homes and businesses in concert with Home Energy Management Systems for residential buildings and Building Management Systems 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 considered. 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 licenced 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.

Skilling the STEM workforce of the future.

A skilled labour pool is essential to build and maintain a sustainable long-term electrified economy, however, Australia is currently facing a skill-shortage crisis which requires immediate attention to meet

our current and future increasing labour demand. MEA strongly advocate that investing into our future workforce is the solution.

Integrating and streamlining Vocational Education Training (VET) courses into the secondary school curriculum is essential in attracting candidates to Science, Technology, Engineering and Maths (STEM) trade careers. Perception of entering trades for both females, males, and non-traditional cohorts will be altered, and students will become better equipped when entering STEM trades. It will also allow for better aptitude and competency screening ensuring the right skills are matched with the right trades, thereby improving commencement and retention rates in STEM.

Ensuring secondary schools are designed to facilitate this through not only streamlining the subjects, but also providing facilities to enable practical learning (e.g. using third party specialist RTOs, work experience partners, etc) will stimulate interest and development in STEM trades, securing a future skilled workforce to continue developing and maintaining a cleaner economy.

The other vital piece of the puzzle is for Secondary Education to recognise VET streams as equivalent to ATAR, and to incentivise schools and teachers accordingly. Currently there is a bias towards ATAR scores as being the definitive measure of success for schools. Outcomes other than school ATAR rankings need to be considered to incentivise school administrations and teachers. Job placement and training contract (apprenticeships and traineeships) outcomes after year 12 should also be given success metrics to encourage educational institutions to put resources into achieving improved VET placement outcomes. Federal education and skills funding should be directed towards furthering the outcomes suggested.

Conclusion

To achieve Australia's net zero targets, MEA strongly advocate for the 2024-25 pre-budget. to allocate finances towards CER policy implementation and asset installation through provision of BESS rebates. We recommend \$5,000 home battery rebate for consumers with a greater 5KW solar PV capacity. This will provide a sustainable solution to tackling energy costs and deliver sustainable clean energy.

A combination of CER, ToU tariffs, HEMS and BESS create a powerful tool in:

- Providing consumers control over their energy usage
- Reducing electricity prices
- Stabilising the energy grid
- Providing clean, resilient and reliable energy.
- Meeting carbon reduction targets.

We recommend the Federal Government delivers BESS implementation rebates which will provide a more sustainable cost-saving solution to energy costs than one-off energy Bill rebates that do not address or improve the core issues driving high energy prices. Our calculations show that this will provide cost savings in the billions, and almost half the cost/KW, when compared to the Pioneer Burdekin Pumped Hydro Project. By encouraging consumers to install and maximise the benefits of solar PV by educating them how to respond to ToU price signals through BESS and HEMS, we can expect long term consumer energy costs to trend down.

With the anticipated population growth and increased uptake of EVs, the grid is expected to experience significant demand pressures jeopardising its stability and integrity. CER and HEMS will combat these problems by creating greater solar energy storage opportunities which consumers can either utilise or provide back to the grid.

Introducing ToU tariffs and educating consumers how to take advantage of them through BESS and HEMS will foster community acceptance and therefore action towards transitioning to CER clean energy. The technology to achieve CER implementation is here now, it is the policies and public infrastructure that needs to catch up. The traditional one-way network system needs to be modernised to enable a two-way network system where consumers not only receive DNSP generated energy but also give back privately generated energy to the grid. Australia's network infrastructure further needs to enable bi-directional EV charging, alleviating grid demand pressures and addressing private and public charging facility capacity problems.

MEA stresses the vital role licenced electrical contractors play within installing and maintaining the private CER infrastructure market. We encourage Australia to integrate the private electrical sector into its electrification policies to cohesively dedicate private functions to this industry. Ensuring licenced electrical contractors with Cert IV qualifications occupy the private arena of CER will enable efficient and effective private CER rollout and create a competitive market driving down consumer prices. It further leaves more capacity to DNSPs to integrate CER with the network and monitoring functions.

A pipeline of skilled labour is crucial for the implementation and maintenance of electrifying Australia. Investment into Australia's future pool of skilled labour to facilitate the future needs of CER needs to happen now through a streamlined & integrated VET secondary school curriculum with equal weighting to ATAR subjects. This will foster interest and early training in STEM trades and allow for better aptitude and competency screening to better match the right skills with the right trade, overall enhancing Australia's trade attraction and retention rates.

MEA looks forward to Australia’s electrified future and hopes to have provided useful insight towards the benefits of prioritising CER and BESS within the Federal 2024-25 budget. We would appreciate the opportunity to be a part of future discussions regarding CER, ToU, HEMS and BESS.

