

Bently Redevelopment

WA

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14 November 2024



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

MEA advocates that the Bentley Redevelopment Project is an excellent opportunity for the State to acknowledge and leverage the significant economic and environmental benefits of Consumer Energy Resources (CER). While the discussion paper proposes including Solar PV in the plans and designs, MEA argues that the WA Government should introduce financial policies to promote widespread adoption not only in the Bentley area but throughout the state to ensure equitable access to these resources. Additionally, the Bentley Development Project would do itself a disservice by solely focusing on solar PV, as this would overlook the important role of batteries in enhancing the utility of solar PV generation and protecting the grid from excessive solar exports. We believe it is imperative for WA to implement policies that encourage the widespread installation of both private solar PV and battery systems in Bentley and across the state.

With abundant sunlight throughout the year, WA is ideally positioned to harness solar PV electricity, providing a resilient, flexible, and affordable energy supply system. By allowing generation and consumption on-site, solar PV eliminates the need for large, costly infrastructure, presenting an environmentally friendlier and cheaper renewable alternative. Additionally, solar PV reduces grid demand by allowing electric vehicles (EVs) to charge using solar power, while EV batteries (where enabled for bi-directional charging) can store excess energy for future use or export back to the grid, enhancing access to charging facilities.

MEA advocates for increased government focus on providing funding and support for electrification at the household and small business level to achieve successful electrification of building developments in the Bentley and the wider WA jurisdiction in pursuit of the objectives outlined in the Bentley Redevelopment Project. We also emphasise the urgent need to address the skills shortage currently affecting the electrical industry to secure a sustainably skilled workforce capable of installing and maintaining these assets.

Consumer Energy Resources (CER)

CER is changing how the traditional National Energy Market (NEM) operates as households and businesses essentially become wholesalers in the energy supply chain. Infrastructure and policy upgrades are vital to ensure CER benefits can be fully realised by consumers and the economy.

MEA commends the WA Government for including "solar PV panels for private dwellings" in the planning and design of the Bentley Redevelopment Project. However, solar PV alone does not enable households and businesses to fully optimise CER, limiting its complete sustainable and economic advantages. To maximise the Bentley Redevelopment Project's potential for reducing costs and carbon emissions through electrification, government should also incorporate battery installation initiatives and other related CER core policies.

Solar PV

While Western Australia has done well to achieve one third of WA homes being installed with solar¹, the Bentley Redevelopment Project has a unique opportunity to champion state policies that incentivise significant private solar PV installation. Currently, WA lacks policies to help households and businesses cover the substantial capital costs of solar PV, which is often

¹ Department of Energy, Mines, Industry Regulation and Safety Energy Policy WA "Distributed Energy Resources Roadmap Third Progress Report" Western Australia Government [July 2024] <Distributed Energy Resources Roadmap Third Progress Report (www.wa.gov.au)>

unaffordable without government aid. Given solar PV is already part of the Bentley Redevelopment Project's planning and design, MEA urges the government to implement financial support for solar PV installations, not only within the redevelopment area but across WA, ensuring fair access for all residents and businesses.

Battery Energy Storage Systems

Role of Private Batteries in Electrification

It is widely recognised that increasing energy storage capacity within the NEM is essential for reliable renewable energy operations. This will improve consumer experiences with CER and help alleviate the hosting capacity constraints faced by Distributed Network Service Providers (DNSPs).

Achieving increased energy storage requires widespread adoption of Battery Energy Storage Systems (BESS) by households and businesses. These enable consumers to store self-generated energy (from Solar PVs) and either soak, be self-consumed during peak periods, or send excess BESS capacity back to the grid during peak demand times.

MEA acknowledges the WA Government's position that -

"Household batteries can only support the system if they are controllable. For example, most batteries are full by midday - this means they cannot help to assist in low load periods, which typically occur in the early afternoon."²

By increasing the number of WA homes and businesses with batteries and implementing meaningful time-of-use tariffs (see below), we can encourage consumers to adjust their energy usage and utilise more energy during peak solar generation periods to meet grid demands. This can be supplemented through Home Energy Management Systems (HEMS). This strategy allows households to optimise energy use throughout the day while batteries store excess energy during typically low-load periods. By taking pressure off the network, electricity costs should reduce for everyone, as less transmission upgrades should be required.

Benefits of Private Batteries

Distributed energy resources, including BESS, 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.

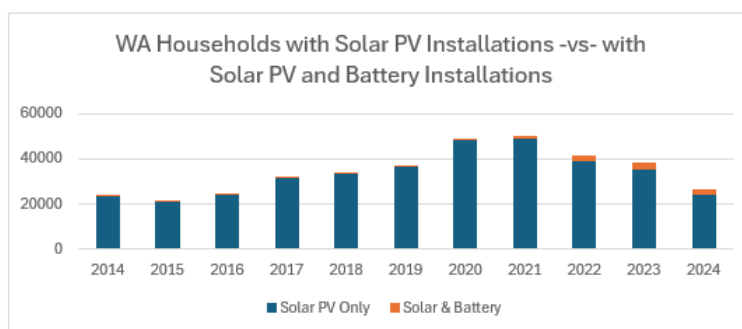
This approach also fosters a co-investment model with households and businesses, boosting consumer willingness and support for electrification by allowing them to see financial returns on their new capital assets.

Current Adoption of Private Batteries in WA

MEA encourages the WA Government to incorporate private battery installations in the design and planning phases of the Bentley Redevelopment Project in which solar PVs are the primary CER asset promoted in the discussion paper. A clear disparity exists between private solar PV and private battery installations in the state, and the Bentley Redevelopment Project presents an opportunity to drive policy improvements that could boost battery installations across WA. MEA's assertions are based on the following statistics from the Clean Energy Regulator:

² Energy Policy WA "Information for Consumers – Emergency Solar Management" *Western Australia Government* [13 September 2024] <[Information for Consumers - Emergency Solar Management](#)>

Year	Solar PV Only	Solar & Battery
2014	23496	169
2015	20797	24
2016	24199	70
2017	31404	212
2018	33112	236
2019	36654	316
2020	48285	782
2021	48782	1624
2022	38692	2710
2023	35139	2957
2024	24021	2424



Data derived from the Clean Energy Regulator³

Absence of private battery installations limits households' ability to manage their energy consumption and costs effectively and maximise the advantages of CER.

Policies

Solar and battery package and zero-interest loans repayable upon house sale, are likely to significantly boost the adoption of private household and business batteries. This would address concerns about grid destabilisation caused by increased decentralisation⁴, minimise reliance on [smart connect solar](#) for regional area solar energy generation, reduce the need for the [emergency back stop mechanism](#), avoid any future justification for imposing a "sun-tax on consumers, and overall help address hosting capacity constraints of the grid.

The high capital costs associated with private batteries can render them inaccessible or unappealing for many households. However, with appropriate financial assistance, we can anticipate a substantial increase in private battery adoption. Schemes offering a rebate for purchase of small-scale renewable technology have proven effective. We recommend a scheme whereby a rebate is available to households and businesses with pre-existing solar PV panels already installed, to allow equitable access to battery installations.

Western Australians currently rely on the Federal Government's recently released [Household Energy Upgrades Fund](#) for financial support in installing household batteries which have payback periods and interest rates attached.⁵ However, we believe that defined repayment terms and interest rates reduces the electrification incentive for households that are already financially burdened. We therefore support [Rewiring's proposed \\$2.8 billion "Electrify Everything Loan Scheme"](#) (EELS) policy, where loans for solar panels and batteries are secured against the property and repaid only upon the sale of the house. This approach would enhance access to clean energy resources, particularly for low-income households and renters.

Time-of-Use (ToU) Tariffs

Consumer Incentivisation

Appropriately designed time-of-use tariffs designed to reward consumers for utilising CER through positive price-signals encouraging solar energy to be utilised during periods of peak demands are to be supported.

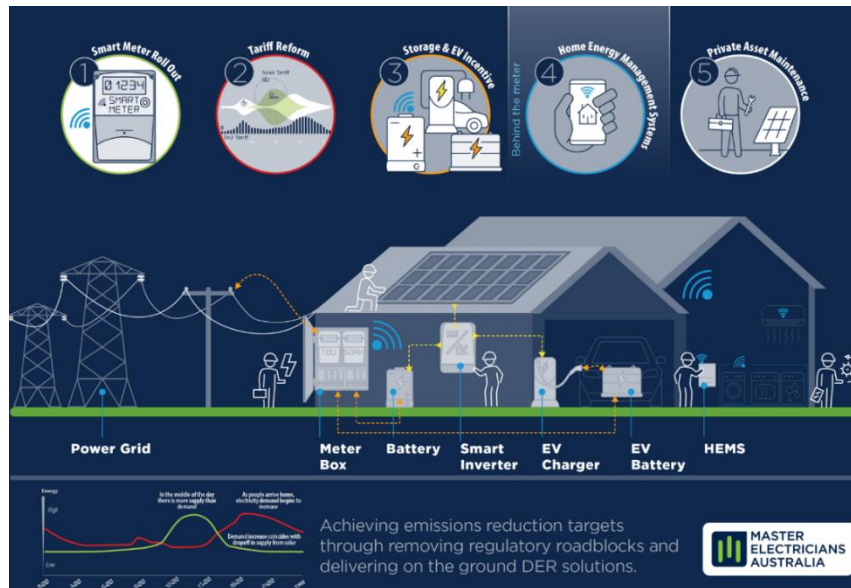
³ Clean Energy Regulator "Small-scale installation postcode data" *Australian Government* [26 September 2024] <[Small-scale installation postcode data | Clean Energy Regulator \(cer.gov.au\)](#)>

⁴ State Planning Commission "GREATER ADELAIDE REGIONAL PLAN" *South Australian Government* [September 2024] <[Greater Adelaide-standardized \(2\).pdf](#)>

⁵ "A LOAN TO HELP MAKE YOUR HOME MORE SUSTAINABLE" Westpac <[Sustainable upgrades home loan | Westpac](#)> & "A LOAN TO HELP MAKE YOUR HOME MORE SUSTAINABLE" Westpac <[Sustainable upgrades home loan | Westpac](#)>

"Household Energy Upgrades Fund (HEUF)" Plenti <[HEUF Discounted Green Loans from Plenti](#)>

Private batteries can offer effective solutions for grid instability caused by excess solar energy generation. With well-designed time-of-use tariffs, consumer behaviour can shift in response to price signals. This encourages users to dispatch stored solar energy earlier in the morning, freeing up battery capacity for later in the day.



Solar Export Charge Tariffs

However, WA must be cautious to avoid financially burdening solar households and businesses through export tariffs.

Increasingly referred to as sun-tax, MEA claims a two-way tariff “punishes consumers for doing the right thing, strips away incentives to invest in solar, and risks giving renewable energy a bad name at a time when we must roll out more rooftop solar”⁶. Two-Way Time-of-Use (TWTou) tariffs disincentivises rooftop solar installations as it is seen as a punishment for following Government encouragement to install and utilise Solar PV. Imposing TWTou tariffs is a step backward during Australia’s energy transition. We should strengthen incentives for solar investment, not weaken them, to support grid contributions from households and businesses.

To avoid the need for future TWTou tariffs, the WA Government should reduce grid constraints by making private household and business battery storage systems more affordable and accessible. These measures will help prevent grid overload by enabling households and businesses to better manage and store excess solar energy.

Electric Vehicle (EV) Bi-Directional Charging

With updated policy and regulation, EVs will become an invaluable asset. The widespread adoption of EVs will increase energy demand, but home rooftop solar PV can help ease grid pressure. Additionally, EVs serve as significant reservoirs for excess solar energy storage. With an average battery capacity of 72.1 kWh⁷, EVs can store more energy than a typical home battery, which holds 5-15 kWh, and can be dispatched when needed.⁸

⁶ Kate Raymond “Sun tax to put further heat on households” Master Electricians Australia [27 June 2024].

⁷ “Useable battery capacity of full electric vehicles” Electric Vehicle Database < <https://ev-database.org/cheatsheet/useable-battery-capacity-electric-car>>

⁸ Jarvis Robins “THE ULTIMATE GUIDE TO CHOOSING YOUR SOLAR BATTERY SIZE” *Static Electrics* [12 December 2023] < [The Ultimate Guide To Choosing Your Solar Battery Size \(static-electrics.com.au\)](https://www.static-electrics.com.au/the-ultimate-guide-to-choosing-your-solar-battery-size)>

Increased network stability is expected as EV infrastructure is installed in households and businesses, especially when integrated with Home Energy Management Systems (HEMS) in residential buildings and Building Management Systems (BMS) in commercial buildings.

With recent amendments to AS/NZS 4777.1, technical restrictions no longer prevent this initiative from moving forward. The



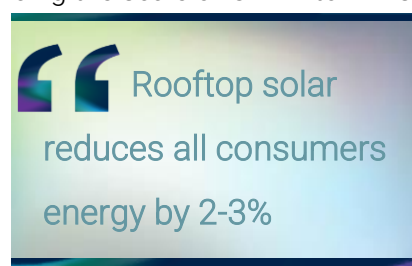
Benefits

Economy

Household and Business Energy Costs

"Adding more rooftop solar into the system delivers consumer benefits. Customer energy costs are 2-3% lower, not only for those who have solar but also for those who [do not]"⁹. There is a clear macro-economic benefit to further enhancing the scale of CER into WA's existing renewable energy network and integrating it into further developments under the plan.

Reduced energy expenses can be achieved by households and businesses producing, storing, and trading surplus energy during peak demand periods. This boosts households' disposable income and businesses' net profit, thereby fostering a sustainably strengthened macroeconomy through reliable and affordable energy. The Bently Redevelopment Project should give greater prioritisation towards the integration of CER into the Plan to empower households and local businesses with greater control over their energy consumption and energy costs.



Resilience & Grid Security

Risks

WA remains vulnerable to many of the traditional risks associated with grid supplied energy. This is because energy being sourced from a centralised hub relies on transmission lines to distribute power to consumers, whereas solar energy is produced and consumed directly on-site. Traditional risks include -

- **Climate events**, such as bushfires and cyclones, can disrupt energy distribution infrastructure. CER offers a resilient solution, allowing consumers to continue using solar energy and stored surplus even when grid supply infrastructure is compromised.
- **Cyber-attacks** are becoming increasingly threatening as digitalisation advances. Ukraine's 2015 grid cyber-attack, which shut off power to 80,000 customers, is just one example of this.¹⁰ Solar-generated and stored energy eliminates the need for a centralised energy centre for flexible loads, thereby reducing exposure to cyber risks.

⁹ "The Time is Now Getting smarter with the grid" *Energy Networks Australia* [6 August 2024], at 26 <[Leveraging the Distribution Grid in support of the Energy Transition \(energynetworks.com.au\)](#)>

¹⁰ "Hackers behind Ukraine power cuts, says US report", *BBC News* [26 February 2016] <<https://www.bbc.com/news/technology-35667989>>

A storm early in the year, which left 33,000 Western Australians without power due to thunderstorms and bushfires¹¹, highlights the risks of the traditional one-way energy supply system, where consumers rely exclusively on grid-supplied power. CER could likely have mitigated the impact of this weather disaster by enabling households and businesses to continue generating and using energy, even with transmission lines damaged, thanks to its decentralised and resilient design and serves. It exemplifies the necessity for the Bently Redevelopment Project to prioritise its installation in the redeveloped area.

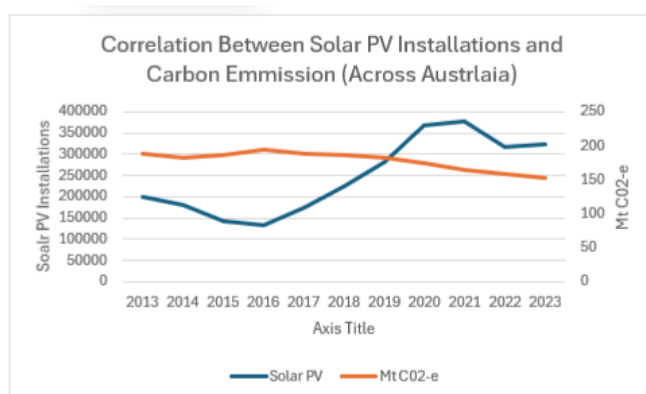
Progress

"Rooftop solar generation is already providing up to 64 per cent of [WA's] electricity needs in the middle of the day."¹² This demonstrates the willingness and potential for WA households and businesses to rely on solar PV generated energy. With further progress to solar PV and battery installations, WA would be better positioned to combat traditional network risks. MEA advocates for robust incentivisation and installation policies for electrification assets championed by the Bently Redevelopment Project. Currently, the only electrification financial assistance available to WA households and businesses comes from the Federal Government's [Household Energy Upgrades Fund](#), which requires short-term repayments with interest. MEA encourages the WA Government to introduce rebate programs similar to Queensland's recently offered [Battery Booster Program](#) and Victoria's currently available [Solar Panel Rebate Scheme](#) in addition to [Rewiring's proposed \\$2.8 billion "Electrify Everything Loan Scheme"](#) policy.

Environmental

CER has significant potential to help WA achieve its net zero targets by providing an alternative to traditional fossil fuel energy sources. Notably, "a typical solar panel will save over 900kg of CO₂ per year."¹³

MEA sourced solar PV installation rates from the Clean Energy Regulator¹⁴ and analysed the decade-long trend in comparison with emissions data from the Department of Climate Change, Energy, the Environment, and Water¹⁵. While other renewable energy sources also contribute to the declining trend in emissions, there is a clear and significant positive correlation between solar PV installations and carbon emissions. Notably, when solar PV installations decreased between 2014-2016, the downward trend in carbon emissions levelled off slightly, with a minor increase before resuming its decline as solar PV installations rose again. This correlation highlights the key role solar PV installations play in helping to reduce carbon emissions.



¹¹ Josh Hohne "Thousands of homes still without power across Western Australia" *9 News* [20 January 2024] <[Power Outage WA: Thousands of homes still without power across WA](#)>
 <[Smart Connect Solar](#)> Western Australia Government <[Smart Connect Solar | Climate Action](#)>

¹³ Janet Richardson & Richard Burdett-Gardiner "Solar Photovoltaics - Cradle-to-Grave Analysis and Environmental Cost" *The Renewable Energy Hub UK* [29 September 2024] <[Solar Photovoltaics - Cradle-to-Grave Analysis and Environmental Cost \(renewableenergyhub.co.uk\)](#)>

¹⁴ Clean Energy Regulator "Small-scale installation postcode data" *Australian Government* [26 September 2024] <[Small-scale installation postcode data | Clean Energy Regulator \(cer.gov.au\)](#)>

¹⁵ Department of Climate Change, Energy, the Environment and Water "National Greenhouse Gas Inventory Quarterly Update: March 2023" *DCCEEW* <[National Greenhouse Gas Inventory Quarterly Update: March 2023 - DCCEEW](#)>

Grid Demand

Western Australia's population of 2.96 million people¹⁶ is predicted to increase to 5.6 million people by 2056.¹⁷ Additionally, it is expected 63-97 per cent of vehicles will be electric across Australia.¹⁸ With this anticipated rise in population and electric vehicles, the stability and reliability of the traditional NEM grid will become increasingly jeopardised.

CER helps mitigate this by reducing peak grid demand and allowing consumers to either supply excess energy back to the grid during undersupply periods or store it in batteries for later use.

Priority Areas

Increasing Availability of Renewable Energy Sources in SA

The costs of renewable resources can be a barrier to household and business electrification. MEA acknowledges there are vulnerable groups who are at greater disadvantage from being able to access CER. The initial capital cost of CER is expensive, however, as CER gains traction and becomes more developed, "the CSIRO have modelled rooftop solar PV costs falling from \$1,505/kW in 2024 to between \$513/kW and \$702/kW in 2055."¹⁹

Below are the identified vulnerable groups in directly accessing CER and our proposed policy solutions:

Group	Issue	Policy Solution
Low-Income Households	Cost of assets and installation are unaffordable	WA Government to offer rebates incentivising a package installation of both solar PV and batteries, reducing the upfront costs of these assets.
Tenants	Landlord bears cost of installation without benefit.	Incentives for landlords which could include a national approach via tax deductions to encourage landlords to install a package installation of both solar systems and batteries.
High-Rise Complex Dwellers	Body corporate decides outcome of building projects.	Mandate strata management companies to allocate funds for CER installations in the annual budgets. This would allow for automated approval of CER capital costs within budget and improve access to CER for multi-unit complex residents. We recommend maintaining ordinary resolution for CER expenditure above the allocated annual budget. MEA advocated for this in our recent response to the Five Year Review of WA's Strata Law .

¹⁶ Department of Treasury "Population" *Western Australia Government* [March 2024] < [Population](#)>

¹⁷ Landgate "Phase one discussion paper Five-year review of WA strata law (*Strata Titles Act 1985*)" [October 2024], at 6 <[five-year-sta-review-discussion-paper.pdf](#)>

¹⁸ "Renewables up almost 40% of Australia's electricity" *Energy Source & Distribution* [May 2024], at 10 <[ENERGY - MAR/APR 2024 \(calameo.com\)](#)>

¹⁹ "Pathways Review - Built Environment" *Climate Change Authority*, at 8 [2024] <[2024SectorPathwaysReviewBuilt Environment.pdf \(climatechangeauthority.gov.au\)](#)>

Conclusion

To promote sustainable economic and environmental development in Bentley and drive similar progress statewide, MEA urges the WA Government to implement the following policies:

- *Battery Rebates* – incentivising battery installation for properties with existing solar panels, allowing equitable battery access.
- *Financial Incentive for Package Installation* – incentivise installation of solar panels together with battery for households and businesses.
- *ToU Tariffs* – commitment to permanent oversight of time-of-use tariffs and ensure households are not charged for exporting energy to the grid, while applying low-cost usage periods to encourage uptake of battery solutions.
- *Low-Cost Loans* – introduce a State Loan Scheme reflective of [Rewiring's](#) proposed *Electrify-Everything-Loan-Scheme* repayable only upon sale of the house. This approach enables homeowners to use capital gains to cover installation costs while equitably easing the financial burden on households.

WA has the opportunity to significantly increase its CER adoption supported by a committed electrical industry eager to facilitate its success.