

Pre-budget Submission 2023 – 2024

Summary of proposal

Overview

The Australian Government has committed to deliver a package of measures in Budget 2023 – 2024 to use electrification to reduce cost of living pressures. Such a package would help low-income, rental and apartment households and also businesses replace fossil-fuelled household devices with electric devices supported by solar and batteries. In this submission we outline measures that would deliver these policy objectives. We also propose complementary measures that will lower the ongoing cost of subsidies, support research and development and coordinate electrification policy, which will deliver greater household energy cost reductions in the future.

Payments

Total payments for electrification measures 2023 – 2027 would be \$551 million on budget plus up to \$3 billion off budget from the Clean Energy Finance Corporation (CEFC).

Summary of proposed electrification measures 2023 – 2027

Measures (Portfolio/Agency)	Reference	Payments (\$m)
On budget measures		
Grants for low-income households and disadvantaged communities	1	200
Support CEFC to enhance its finance offerings for electrification for households and business	2 a.	22
Create Office of Electrification in Department of Climate Change, Energy, the Environment and Water to coordinate policy and deliver Integrated Electrification Plan	3	11
Develop Integrated Electrification Plan	4	9
Public education and thought leadership	5	14
Solar Electric Suburb lighthouse projects	6	200
Community integrated EV charging infrastructure	7	95
Total of all budget measures		551
Off-budget measures		
Finance for low-income households, social housing and businesses to purchase electrification at low or zero interest (CEFC)	2 b.	3000
Total value of proposal		3551

About Rewiring Australia

Dr Saul Griffith is an Australian American inventor, author and climate and energy expert. He co-founded Rewiring Australia in 2021 as an independent research organisation to demonstrate and realise the opportunities of electrification to reduce consumer costs, eliminate emissions, improve the energy system and create new industries.

Policy rationale: electrification is economic opportunity

On 14 December 2022 Chris Bowen, the Minister for Climate Change and Energy, announced that the 2023 - 2024 federal budget would include a 'meaningful and substantial package' of electrification measures.¹ This was basis of the *Household and Business Electrification Package* agreement reached with the Australian Greens and supported by Senator Pocock to pass critical legislation for bringing energy price relief to households and businesses.²

Earlier in 2022 US President Joe Biden signed the *Inflation Reduction Act* (IRA) into law. This was also designed to bring price relief in the context of the international energy crisis. Dr Saul Griffith and Rewiring America significantly shaped this legislation and it is largely designed around electrification. The most ambitious climate legislation in the world, it is worth around US \$369 billion in new climate and energy spending across households, business, industry and large-scale energy supply. If Australia was to keep up with America and spend pro-rata what the U.S. will spend under the IRA this would require over \$40 billion in investment. This submission proposes around \$3.5 billion in new spending for households and businesses, which would make a down payment on the broader transformation of the Australian economy to ensure we comply with the Paris Agreement target of 1.5 degrees of climate heating.

The *Household and Business Electrification Package* builds on analysis that renewable electricity is "cheaper" and "cleaner" than fossil fuels "and can protect Australians from future global energy shocks". The government's statement notes that "households and businesses face a range of barriers to electrifying, including upfront costs and workforce and supply chain constraints". The immediate priority of the policy is to "focus on households that most need support, such as low-income households, renters, public and community housing residents and apartment dwellers". The primary source of finance would be existing funds of the Clean Energy Finance Corporation (CEFC). It would be supported by existing funds of the Australian Renewable Energy Agency (ARENA) and budget appropriations. There would be consideration of funding for pilots, including in the ACT.

In this submission Rewiring Australia proposes a substantial, targeted package to achieve wide-spread adoption of electrification through \$200 million in grants for low-income households and \$3 billion in zero interest CEFC loans for households and businesses. We propose \$200 million for Solar Electric Suburb pilots to develop community-ownership models and achieve a high saturation of electric households in discrete communities. We also propose policy development and intergovernmental coordination and governance reform. This package would quickly deliver cost of living relief to low-income households and to businesses and thereafter position Australia as a global leader in this emerging policy area. Electrification is the only technologically viable pathway to zero emissions, lowers cost of living, and is anti-inflationary.³

The submission draws on the *Castles and Cars* study published in October 2021 by Rewiring Australia and led by Dr Saul Griffith. This report quantified the economic and climate benefits of electrification.⁴ It showed that a one-off investment of around \$12 billion - roughly what governments spend subsidising fossil fuels annually - would decarbonise the household economy and produce savings of hundreds of billions of dollars over the next decade. It showed that electrification would roughly halve total energy consumption across the domestic economy (while trebling household electricity use). This saving is realised because burning fossil fuels is a thermodynamically inefficient way to utilise energy, conversely electrification is incredibly efficient. Burning fossil fuels is one of the most wasteful ways to power a car,

¹ Bowen (2022) *Press conference - Canberra* (14 December)

<https://minister.dcceew.gov.au/bowen/transcripts/press-conference-canberra-0>

² Australian Government (2022) *Household and Business Electrification Package* (14 December); *Treasury Laws Amendment (Energy Price Relief Plan) Bill 2022*

³ Griffith (2022) *Electrification is anti-inflationary*, <https://www.rewiringaustralia.org/report/electrification-is-anti-inflationary>

⁴ Griffith et.al. (2021) *Castles and Cars - Savings in the suburbs through electrifying everything*, <https://www.rewiringaustralia.org/report/castles-and-cars-discussion-paper>

cool a lounge room or cook an egg. The main products of burning coal, oil and gas are waste heat and the climate emergency. Rewiring Australia proposes that the new National Energy Performance Strategy should see electrification as vital for improving national energy performance.

The *Castles and Cars* modelling in 2021 found that an average Australian household that switches from using fossil fuels for transport, cooking, space and water heating to electricity and efficient electric devices would reduce daily energy use by about two thirds from 102 kWh to 37 kWh, annual energy emissions from 11 tonnes / year to zero and realise annual savings of about \$3000 - \$5000 per year.

The Treasurer of Australia Jim Chalmers recently wrote that '[t]he energy transition and adoption of new technologies...will be the defining phenomena of this decade and possibly the defining opportunities for this government'.⁵ The policy package in this submission would give all Australians the choice to directly access the benefits of electrification.

Budget measures

1. Grants for low-income households and disadvantaged communities (\$200 million)

A highly targeted grant program would offer up-front subsidies to disadvantaged communities and households to allow them to purchase efficient electric devices, solar and storage and e-bikes or EVs. This would be designed in consultation with communities and welfare agencies. For example, grants could be designed for remote First Nations communities, refugees or safe houses for women and children. This could be administered by states where appropriate.

2. Concessional finance to provide bill relief and accelerate electrification (up to \$3 billion of existing CEFC funds)

Modelling of energy costs for the *Castles and Cars* reports by Dr Griffith quantified the costs of electrifying Australia's housing. This found that an overall investment by government of around \$12 billion over the 2020s would finance electrification of all suitable households with electric devices and EVs. Most investment in electrification would be commercially financed, as financed electric devices become competitive with existing fossil fuelled devices. The total investment would generate energy bill savings in the order of \$3000 – \$5000 per household per year in 2030.

The analysis of price trends for electrification technologies found that around 2025 the cost of purchase of electrification (including EVs) comes down to a point where a household with an ability to raise debt could finance the replacement of fossil machines and the capital costs of these machines if spread over their lifetime would be more than offset by the associated energy bill savings. The purpose of the government finance is to accelerate electrification and make cheap and efficient devices available to low-income households (lowest 20%) and households that are harder to electrify (renters and apartments). Accelerated electrification for households outside the lowest 20% and businesses will deliver bill relief.

Measures 2 (a) \$22 million on budget and 2 (b) up to \$3 billion off budget

The government can issue a new *Investment Mandate Direction* for the CEFC to direct it to deploy \$2 - \$3 billion of its funds to electrification, with 2/3 going to households and 1/3 to business. For the household stream the CEFC should be encouraged to develop innovative models to deliver zero interest electrification finance products to the lowest 40-60% of households. These could include bonds to de-risk loans, local government and community-based procurement collectives which have been successful in solar and EV markets and working with energy services companies on new products. This scale of CEFC investment could see 500,000 households partially or wholly electrified, depending on finance terms and the type of devices that are funded. Funds should be earmarked for government public housing agencies and private owners of social housing. Funding of \$22 million will support this work by the CEFC.

⁵ Chalmers (2023) *Opinion piece: A new agenda for growth in the 2020s*
<https://ministers.treasury.gov.au/ministers/jim-chalmers-2022/articles/opinion-piece-new-agenda-growth-2020s>

There is much more that the Australian government could be doing to match the scale of investment made by America's *Inflation Reduction Act*. If Australia's governments eliminated fossil fuel subsidies there would be considerable budget savings to redirect to electrification. Independent research indicates that governments spent almost \$12 billion on subsidies to fossil fuel industries in 2021-22.⁶ In order to provide the next \$10 billion required by the CEFC to fund the electrification revolution, the government would need to pass legislation to credit these funds to the CEFC's Special Account (or create and fund a new account).⁷

Subsidy design: avoid boom bust threats to installer businesses

In the past poorly structured policy interventions have driven the rooftop solar industry along a 'solar coaster' of boom-and-bust cycles. It is vital that subsidies are carefully designed so program implementation and the timing of announcements do not harm the installer workers and companies who will do the work of electrification. The government should consult early with the Smart Energy Council, unions and other industry bodies on subsidy design and the timing of announcements.

3. Coordination is vital: establish a new Office of Electrification (\$11 million)

It is proposed to create a new Office of Electrification ('Office') as a section within the Electricity Division of the Department of Climate Change, Energy, the Environment and Water (DCCEE) reporting to the Electricity Head of Division, supporting the Assistant Minister for Climate Change and Energy. This could become a separate agency over time and play a broader coordination role across portfolios. It is proposed that this may cost \$11 million over the forward estimates but further work is required to design the measure and quantify its cost.

The Office would lead the delivery of the Power to the People and Solar Banks programs and develop new policy and programs. It would lead intergovernmental coordination. The focus would be on household electrification, small business and the commercial sector initially, then industrial electrification. The Office would lead engagement on all demand side issues (including demand response) across government, energy market bodies and stakeholders to ensure a coordinated and strategic approach. The flagship output would be to develop an Integrated Electrification Plan for COAG – described in the sub-section below. The Office would lead development of electricity market reforms and plans which would be delegated to the market bodies where appropriate.

The Office of Electrification's responsibilities would be:

- Lead national electrification policy development through the Energy National Cabinet Reform Committee (ENCRC) and the Energy Ministers' Meeting (EMM) including coordination and co-funding of subsidies provided by jurisdictions and uniformity of national codes for housing efficiency ratings (NABERS)
- Integrate electrification policy with EV policy
- Commission research, deployment programs and provide thought leadership in the design of a model for electrification that can be emulated internationally
- Organise up to about 10 Solar Electric Suburb lighthouse projects
- Lead market design, delegating to market bodies where appropriate
- Lead the development of safety and technical standards
- Work with the Employment and Workplace Relations portfolio to support workforce development programs New Energy Apprenticeships and the New Energy Skills Program including input into Jobs and Skills Australia workforce evaluation
- Work with the Industry and Science portfolio to maximise local supply of components, materials and skills, inputting into the National Reconstruction Fund
- Work with the Trade and Tourism portfolio to guarantee the supply chain for electrification imports

⁶ Armistead et. al (2022) *Fossil fuel subsidies in Australia*

⁷ *Clean Energy Finance Corporation Act 2012*, section 42

- Develop RD&D policy to make Australia a leader in electrification technologies and services
- Promote health benefits of electrification of household gas appliances to consumers

4. Develop an Integrated Electrification Plan (\$9 million)

The core deliverable of the Office would be to Develop an Integrated Electrification Plan for COAG (This is the electrification equivalent of the Integrated System Plan, covering demand side and distributed energy resources and distribution network planning.) This would include \$9 million to commission research for an optimal 'grid neutral' market design to and then drive reform of energy law around electrification using ministerial power to make laws. Market bodies would support this work through detailed market design, regulatory drafting and delivering consultation processes.

5. Public education and thought leadership (\$14 million)

Australia is the global leader in rooftop solar because ordinary people have embraced the technologies. Electrification should also be led by the people. Government should fund thought leadership and public education programs to give communities the tools they need so people can make informed decisions as citizens and consumers as well as encourage take up of subsidies and CEFC-supported loans. We propose \$14 million to be administered by the Office, for:

- communications campaigns (health, economic and environmental benefits)
- funding for research and thought leadership around community ownership, public engagement and social licence

6. Solar Electric Suburb lighthouse projects (\$200 million)

An electrification pilot provides electrification to households in a particular locality to accelerate the development of technologies. Household devices and EVs are already proven and commercial, so the technological development outcomes of pilots are around the home energy management systems, grid integration, system operator visibility and broader policy and regulatory issues (market design, equity, retrofitting policy, community attitudes, social licence, ownership and business models).

It is proposed that the Commonwealth should provide \$200 million towards Solar Electric Suburb lighthouse projects. These would complement narrower ARENA trials and help leverage Australia's rooftop solar leadership to become a global electrification leader.⁸ These projects would seek to optimise solar self production and utilisation among an 'electric community' (all consumers on a particular distribution feeder) and test new business models including community ownership. An economic and social justice objective would be to maximise benefit sharing with local communities including low income households. Projects would also include social research around equity and social licence to deliver best-practice guidelines for electrification policy.

7. Community integrated EV charging infrastructure (\$95 million)

This funding is required outside EV programmes to accelerate electrification through integration of EV charging and energy export at the community level. It supports the objective of the Solar Electric Suburbs and would optimise the role of EV batteries within a particular electric community on a distribution feeder. The funding would test models around co-location of EV chargers with community facilities and would allow purchase of land.

Contact

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⁸ In early 2023 Rewiring Australia is leading an ARENA proposal for an electrification pilot in NSW and a key partner of a project proposal in SA.