



Efficient electrification of Australian homes and businesses

2025 recommendations

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About the EEC

The EEC is the peak body for Australia’s energy management sector.

We are a membership association for businesses, universities, governments, and NGOs that have come together to ensure Australia harnesses the power of efficiency, electrification, and demand management to deliver a prosperous, equitable, net zero Australia with:

- People living and working in healthy, comfortable buildings;
- Businesses thriving in a decarbonised global economy; and
- An energy system delivering affordable, reliable energy to everyone.

The EEC works on behalf of its members to drive world-leading government policy, support businesses to rapidly decarbonise, and to ensure we have the skilled professionals to drive Australia’s energy transformation.

Introduction

As Australia progresses towards an energy system with high levels of renewable energy, the value of managing our energy use is increasing significantly. Prioritising measures on the *demand-side* of our energy system presents an unparalleled opportunity to deliver substantial bill savings for households and businesses, reduce energy system costs, improve health and productivity, and accelerate an equitable energy transition.

The EEC's report, [Clean Energy, Clean Demand](#), highlights how the timing, location, and volume of energy use are increasingly influencing both financial and non-financial outcomes for energy users. For example, in the middle of a sunny day when solar PV production is high, electricity supply is abundant and cheap. In contrast, energy prices spike between 6 and 9PM, as solar PV production goes down and household energy use increases. The inflexibility of energy use during peak demand periods can significantly increase costs for individual users and impose additional costs on the entire energy system.

By focusing on adapting how, when, and where energy is used, demand-side measures can lower energy costs for households and businesses while reducing strain on the energy system. Flexible energy use and energy efficiency improvements can reduce reliance on expensive infrastructure and deliver widespread cost savings. For example, implementing minimum energy performance standards (MEPS) for refrigerators and freezers reduced demand for energy by approximately 360MW in 2017¹, equivalent to the capacity of a moderately large gas-fired generator. This avoided infrastructure not only lowers costs for all energy users but also directly reduces energy bills for those adopting efficient appliances.

The benefits of demand-side measures extend far beyond energy savings. Improving the energy efficiency of buildings contributes directly to the health and wellbeing of occupants. The Victorian Healthy Homes Program demonstrated that small energy efficiency upgrades to homes yielded health system savings approximately ten times higher than the associated energy bill savings for vulnerable participants.² Participants in the program reported tangible improvements in their health and quality of life, highlighting the broader social value of these measures. Many more studies around the world have shown similar results.

For Australian businesses, demand-side measures enhance competitiveness and productivity by reducing operating costs and improving workplace environments. Businesses that invest in energy efficient practices and technologies can better manage their energy costs, freeing up resources for growth and innovation.

Lastly, demand-side strategies can support Australia's transition to a zero-emissions energy system by reducing the need for costly infrastructure to replace high emissions energy sources. Improved energy performance decreases the amount of new generation and storage capacity required, making the transition more cost effective. Effective use of renewable energy during periods of high availability reduces reliance on emerging technologies like battery storage and carbon capture, which can be more expensive or less technologically mature.

Unlocking the full potential of the demand side of the energy system is essential for achieving an energy transition that is affordable, rapid, and beneficial for all Australians. By focusing on bill savings, energy system efficiencies, and broader health and productivity benefits, demand-side measures can pave the way for a sustainable and prosperous energy, health, and housing future, while also contributing to the critical emissions reductions Australia needs to meet its target of net zero emissions by 2050.

¹ Australian Government, [Independent review of the Greenhouse and Energy Minimum Standards Act](#), 2019.

² Sustainability Victoria, [The Victorian Healthy Homes Program research findings](#), 2022.

2025 priorities for energy efficiency and electrification

This document sets out key priorities for 2025 to slash energy bills for Australian homes and businesses, while supporting Australia to thrive in a low carbon world. Recommendations are in no particular order of priority.

Laying the foundations for success

Reform governance frameworks to prioritise demand-side activities

The governance frameworks for Australia's energy sector are outdated and heavily focused on regulating and planning energy supply while mostly ignoring demand-side activities. Reforming these frameworks to give an equal consideration to demand-side activities will help reduce energy system costs, make the energy transition more orderly and affordable, and give even greater incentives to energy system participants to promote and implement energy efficiency.

Government should give detailed consideration to the recommendations made in the [Demanding Better](#) report, which sets a reform agenda for harnessing the power and flexibility of demand side energy resources. Key recommendations in this include:

- Immediately establish a national energy performance agency;
- Set national energy performance targets, and measure progress;
- Increase representation of consumers and demand side experts in decision-making;
- Develop new policies and delivery models that meet energy users where they are;
- Identify, understand, and mitigate risks to equity; and
- Put the demand side at the heart of broader energy governance reform.

Develop the workforce for improving energy performance

Australia's transition to a renewable energy system, net zero economy and resilient efficient electrified buildings will depend on the efforts of skilled professionals and tradespeople that make up an appropriately sized and trained workforce. The workforce must blend traditional expertise with new skills in evolving technologies and systems and requires careful planning to make sure we have enough workers in both demand-side and supply-side domains to deliver the transition rapidly and affordably.

Australia should continue work to identify and plan for the development of key technical, digital, and transferable skills that are required to decarbonise across all sectors of the economy in critical professions and trades. Australia should seek to:

- Build capacity and capability across traditional and evolving technologies;
- Support upskilling in digital capabilities and transferable skills, including effective engagement;
- Create durable workforce diversity, equity, and inclusion by default, particularly for women and First Nations peoples;
- Invest in education, training, qualification, and certification in fields of critical skills needs; and
- Invest in fit-for-purpose workforce data, including through accurate skills and occupational classifications and robust baseline jobs and market sizing data, starting with a comprehensive Australian Energy Employment Report.

Roll out energy efficiency communications and literacy campaigns

The cost-of-living crisis is negatively impacting households and businesses Australia wide, with high energy bills a significant contributor to this pressure. While government can't necessarily control energy prices, it can help to rapidly build awareness, literacy, and engagement with energy efficiency amongst households and businesses that can support cost reduction.

The government previously allocated \$3.5 billion for energy bill relief,³ which provides short-term support, but fails to address the underlying issues driving energy bills in the long term. Redirecting some of this funding towards building energy literacy and expanding support programs for Australian homes and businesses could lead to sustainable reductions in energy use, resulting in lower bills permanently.

Germany offers a good example of this. Through the *Energiewende* (Energy Transition) policy, Germany has invested heavily in energy efficiency programs aimed at reducing energy consumption across residential, commercial, and industrial sectors. The focus on energy efficiency has not only helped reduce energy bills but also supported Germany's long-term sustainability and decarbonisation goals, creating a model for other countries looking to achieve lasting energy savings.

Government should roll out a well-targeted, long-term communications program to build awareness of energy efficiency measures to help individuals and businesses to reduce their energy bills. Targeted campaigns can promote actions ranging from the simple, to the more complex. This can be complemented by some of the financial support measures, outlined below.

Transforming the electricity market through demand side action

Set a national target for demand flexibility

A national target for renewable energy generation has been pivotal in shaping government policy and spurring investment in renewables, helping to ensure Australia builds the energy supply assets necessary to replace ageing fossil fuel generators. Now we need a target for flexible demand capacity.

Compared to fossil fuel generators, renewable generators have very different characteristics, including short-term and seasonal variability. By better matching demand with supply, a flexible demand target will help support the affordability and reliability of a high penetration renewable energy system.

Setting a flexible demand target would send a clear signal that investments in flexible demand capacity are of equal importance to supply-side infrastructure, helping to guide policy and investment decisions that build flexible demand capacity in households and businesses.

³ Auditor-General, [Report No. 16 2024–25 Design of the Energy Price Relief Plan](#).

Expedite reforms to existing incentives for flexible demand

The Wholesale Demand Response Mechanism (WDRM) is an important mechanism for supporting demand side participation in the wholesale market. However, the potential for participation in the WDRM has been limited due to design issues that include:

- The need for more baseline methodologies;
- Overly restrictive eligibility requirements, for example, accuracy scores for baseline calculations applied at the site level that are much more restrictive than compared with other markets internationally, where such scores are applied at the portfolio level; and
- Thresholds for participation that prioritise larger energy users.

The EEC urges reforms to be expedited, noting AEMO is currently considering proposals to increase the efficacy of the WDRM and AEMC will be conducting a review in 2025.

AEMO is also in the process of developing an incentive to support participation in the wholesale market via the Integrated Price Responsive Resources (IPRR) rule change. This is currently set at \$50 million and 'time limited'. The success of IPRR will be heavily dependent on the accompanying incentive program. In short, it is critical that flexible demand providers continue to be rewarded for making their demand 'schedulable', by receiving *more* than the spot price savings they would receive in the absence of the IPRR. Without a sufficient incentive, it seems unlikely that participation will be high.

Ensure any new capacity mechanisms include flexible demand capacity

The idea of a 'capacity mechanism' to ensure sufficient capacity is available in the NEM as ageing fossil generators reach their end of life has been proposed over successive reviews of the NEM. This idea is again being considered as part of the latest NEM Review, while states are also progressing their own plans (for example South Australia's Firm Energy Reliability Mechanism).

Irrespective of whether such mechanisms are delivered by states or federal governments, their design should be genuinely 'technology neutral'. Doing so requires close consideration of: the outcomes being sought; the market features required to facilitate the participation of a diverse range of technologies; and what systems would dispatch an optimal mix of these resources to meet system requirements.

The advantages of flexible demand capacity include its quick deployment speed – considering the bulk of the physical infrastructure already exists – and associated lower costs. Capacity mechanisms that exclude flexible demand will miss these benefits, leading to higher overall costs to energy consumers.

Align and modernise retailer energy efficiency schemes with energy market goals

Retailer energy efficiency schemes have existed in several states and territories for well over a decade. These have tended to focus on achieving reductions in gas and electricity use, with a key objective being to reduce greenhouse gas (GHG) emissions. However, with the transition to high levels of renewable generation, electricity savings are less valuable from a GHG emissions standpoint. Simultaneously, new problems have emerged for the market operator, such as ensuring minimum operational demand during periods of high distributed solar penetration.

Re-aligning these schemes to have the objective of energy system optimisation could help to solve various electricity system challenges: from reducing demand at peak periods, to shifting demand to periods where solar penetration (and curtailment) is high. However, this will require

state and territory governments to undertake significant reform, ideally coordinated at the federal level to remove frictions across state and territory borders.

Improve electricity network regulations and incentives

The role of the electricity grid is to connect multiple energy users and generators in a way that provides both diverse energy supply and loads. This improves the security and reliability of supply while reducing peaks and supply costs. Theoretically, network service providers (NSPs) should invest just enough in the grid to provide a reliable connection. Further, they should invest in managing demand when it is cheaper than augmenting the grid. However, poor incentives and regulations mean that many NSPs have invested heavily in supply and made very little investment in demand management, resulting in higher network charges for all consumers.

Various reviews of the NEM have recommended governments revamp incentives for NSPs to support investment in non-network solutions. To complement this, governments should strengthen the Demand Management Incentive Scheme, set NSPs minimum targets to invest in demand management, and appoint an entity to oversee reviews of the level of demand-side investment by NSPs and oversee NSPs' interactions with consumers and energy-service providers.

Supporting households to live in healthy, comfortable and affordable-to-run homes

Based on CSIRO's Australian Housing Dataset, we estimate that around seven million homes rate less than two stars on the Nationwide House Energy Rating Scheme, indicating a poorly performing home that requires substantial amounts of energy to heat and cool. Upgrades like improving the thermal performance of buildings with insulation and draughtproofing, and upgrading to efficient electric appliances, can substantially reduce the energy use of these homes.

While these upgrades are the obvious foundation for healthy comfortable homes that run at an affordable cost, there are a range of challenges to undertaking these upgrades at scale. For example, while the retrofit task is national, much of the oversight, facilitation, and regulation of residential retrofits is managed by state and territory governments. Independent regulatory efforts and varying compliance results in a fragmented approach to retrofits. However, there is a role for the Commonwealth in helping to better coordinate these moving parts.

Support households experiencing disadvantage

When the price of energy rises, households experiencing disadvantage are disproportionately impacted. State and federal governments have responded by providing short-term assistance with energy costs. However the long-term welfare of these households will be best served by permanently reducing their energy demand while improving their quality of life. Government should:

- Continue to fund the Social Housing Energy Performance Initiative (SHEPI) to undertake comprehensive insulation retrofits to all social housing Australia wide, including public and community housing, by 2030; and
- Partner with states and territories, or a suitable national administrator, to develop and roll out a program to upgrade private homes of households experiencing disadvantage in the period 2025-30. The program would commence with small trials, followed by a major roll out from 2027.

Expand energy efficiency programs and financing

Energy efficiency schemes in NSW, Victoria, South Australia, and the ACT have delivered significant savings by incentivising upgrades, but gaps in other jurisdictions limit access and slow market growth. Expanding low-cost finance options is also essential. While the HEUF is a positive step, more accessible programs, like Tasmania's Energy Saver Loan Scheme, would further drive uptake. The Commonwealth should directly fund states and territories to expand these initiatives and/or develop new ones to ensure broader access and accelerate efficiency improvements across Australia.

Accelerate the *Trajectory for Low Energy Buildings*

Federal, state and territory energy ministers have agreed to a *Trajectory for Low Energy Buildings*, which sets out market reforms to address barriers to more efficient homes. Progress on the trajectory has been slow due to a lack of government leadership and funding. By 2027:

- A consistent national home energy rating tool should be available nation-wide;
- All jurisdictions should require disclosure of energy performance at point of sale; and
- Rental homes should meet minimum energy performance standards.

The National Construction Code (NCC) should continue to be updated and increased in stringency every three years, with ambition to make new buildings climate resilient, net zero compatible, cheap to run, and competitive with international standards. Every effort should be made to prevent piecemeal implementation of the NCC across states and territories, as Australians should have access to housing of a consistently high quality, no matter what jurisdiction they reside in.

Create an efficient electric homes action plan

Significant government action is required to directly upgrade the homes of Australians experiencing disadvantage. However, upgrading the rest of the existing housing stock is also important, and could be accelerated with a relatively small amount of government assistance.

The Commonwealth government should:

- Invest \$100 million over four years to rollout the national home energy rating framework, ensuring that the framework includes the information banks need to streamline approvals for green loans and access green bond markets, and develop an information, skills, and training package to scale-up deployment of the framework; and
- Develop a National Retrofit Partnership (NRP), to support retrofitting millions of homes - the scale necessary to achieve a step change in existing homes' energy performance.

The NRP would create an efficient electric homes plan, with buy in from all states and territories and promote and support a nationwide residential retrofit effort. The NRP could be established as an independent body or housed within an existing government department or agency. For example, the remit of Housing Australia could be expanded beyond new builds to support the national retrofit effort.

Helping Australian businesses boost their energy productivity

To date, policy for boosting the energy performance of Australia's businesses has concentrated on a limited subset of commercial buildings, and on our most emissions-intensive economic activities. Businesses that fall outside of these sectors make up a large part of our economy, but often don't have the information, drivers or support they need to chart a course to a net zero economy.

Over the last 14 years, Australian offices rated using the National Australian Built Environment Rating System (NABERS) have benefitted from average energy savings of 42% and have reduced greenhouse gas emissions intensity by 53%. This is one of the fastest widescale building transformations recorded anywhere in the world.⁴ This is world leading success for Australia, but many more opportunities to expand on this success have been left sitting on the table for too long.

For industry, owing to our historical access to cheap energy, Australia has not traditionally had a strong culture of energy management. In fact, Australia's performance in industrial energy efficiency was ranked last of all developed countries surveyed in the American Council for an Energy Efficient Economy's most recent scorecard, with Asia-Pacific competitors India, Thailand and Indonesia eclipsing Australia's performance by a significant margin. This signals that there is much more to do in this important space.

In 2024, 73% of global GHG emissions targets were formalised into legislation or official net zero policy,⁵ putting Australia in a 'race to the top.' There is a strong case for Australian businesses to engage with emissions reduction, to ensure they are effectively managing the risks and capturing the opportunities of the transition. Net zero, industrial competitiveness and energy security can all be advanced by helping more industrial businesses seize the opportunities to manage energy better, including through efficiency improvements, time shifting, and fuel switching including electrification.

Expand the Commercial Building Disclosure (CBD) program

Australia's CBD program is world leading, and since establishment in 2010, has been highly successful, with NABERS reporting a 29 per cent improvement in energy intensity for buildings covered under the program.⁶

In 2019, a review commissioned by the Commonwealth recommended expanding the CBD program to other types of commercial buildings, but a final decision was put on hold due to the pandemic. In 2024, government undertook another consultation on the possible expansion of the program. Having reviewed the feedback provided, which was largely positive, the Assistant Minister for Climate Change and Energy asked the department to develop a government roadmap to guide future expansion of the CBD Program.⁷

Although the CBD discussion remains live, the time is right to expedite the upcoming roadmap and expand the CBD program to other building types, including office tenancies, hotels, shopping centres and data centres. Implementation of any expansion could be supported by providing funding for companies to undertake their initial NABERS rating.

⁴ NABERS, [Energy efficiency in commercial buildings](#), 2022.

⁵ Net Zero Tracker, [Net Zero Stocktake 2024](#), 2024.

⁶ KPMG for DCCEEW, [Expanding the Commercial Building Disclosure \(CBD\) Program](#), 2023.

⁷ Australian Government, [CBD Program Reviews](#), accessed January 2024.

Sensible regulations and incentives to support business upgrades

The EEC recommends expanding support for energy performance upgrades in industries that fall below the Safeguard Mechanism threshold, ensuring that small and medium energy intensive businesses have a clear pathway to thriving in a net zero economy.

Energy management can significantly reduce operating costs for industry, but many businesses – particularly smaller businesses, without a dedicated energy and carbon manager – lack the data and expertise to manage their energy usage. The EEC recommends deployment of a comprehensive package of financial incentives to improve business energy productivity. The package should consist of assistance for businesses to:

- Install energy metering, sub-metering and monitoring infrastructure;
- Access energy coaching and advisory services;
- Implement an Energy Management System (EnMS); and
- Upgrade and optimise equipment and processes where the EnMS identifies cost-effective upgrades.

Funding for these incentives could comprise a small part of the Powering the Regions Fund, the National Reconstruction Fund, and the Re-Wiring the National Fund. Funding could also come from Future Made in Australia to support the productivity and resilience of domestic facilities that align with the strategic aims of the plan.

Alongside financial incentives, the EEC also encourages the Government to consider regulatory changes, including lowering the threshold for inclusion in NGERs to scope 1 emissions of 10,000 t CO₂-e per annum at both corporate and facility level. This could result in a graduated scheme that imposed greater requirements with increasing energy and emissions (such as implementing an EnMS over 25,000 t CO₂-e per annum).

In addition to helping drive down costs and emissions in these businesses, expansion of reporting requirements would provide valuable data on real world energy use in Australian industrial settings, sourced from a larger and more diverse cohort of businesses than is currently available. This in turn would allow governments to better target policies that help industry reduce emissions.

Invest in stimulating innovation in Australia through an integrated RD&I initiative

Australia's research and innovation ecosystem has a significant role to play to help businesses, households and governments decarbonise their energy use and operations. As Australia's RD&I efforts – at 1.68% of GDP⁸ – lag our international competitors, we run the risk of not undertaking the necessary RD&I to meet our energy transition needs.

The energy transition has two interlinked components – energy demand and energy supply. However, research efforts are often overly focused on technologies to decarbonise energy supply, without regard for the role that demand-side measures such as energy efficiency, electrification and demand flexibility can play in reducing emissions rapidly and inexpensively. Research efforts also tend to have a technology focus. However, Australia could benefit from a more holistic approach which helps to build our knowledge to design and deliver new processes, markets, and policies that cater to energy users' circumstances and behaviours – from households to industrial energy users.

⁸ ACOLA, [Australia's Funding of Energy Research – Quantum and Comparison](#).

Integrated energy systems need an integrated approach to RD&I. Government should give detailed consideration to the recommendations made in the [Energy Research, Development and Innovation](#) paper, which include:

- Increase Australia's energy RD&I investment by \$1 billion over the next decade;
- Establish a dedicated energy RD&I centre to foster collaboration across universities, governments, and industries;
- Take a holistic, integrated approach to energy systems, addressing both supply and demand; and
- Focus on accelerating clean energy transitions through coordinated RD&I efforts.

