



Select Committee on the Cost of Living Submission

To: Select Committee on the Cost of Living

Re: Inquiry into cost of living pressures facing Australians

Thank you for the opportunity for the Institute of Energy Economics and Financial Analysis (IEEFA) to provide input to the Select Committee on the Cost of Living. IEEFA is an independent energy finance think tank that examines issues related to energy markets, trends and policies. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy.

IEEFA's submission draws on our research and analysis to provide insights on solutions to reduce Australian consumers' energy costs – a significant contributor to the overall cost of living.

The federal government policy response has focused on short-term relief measures such as the Energy Bill Relief Fund. However, IEEFA considers there are material opportunities to reduce long-term energy costs in four main areas:

- **Reducing network costs** – by curtailing supernormal profits across electricity and gas networks, enabling greater flexible demand opportunities and developing a phase-down plan for gas distribution networks;
- **Reducing wholesale electricity costs** – by increasing renewable energy investments in line with existing targets, limiting gas generation to the minimum required levels to support renewables, supporting a smooth and fast phase-down of coal, and avoiding more costly alternatives such as nuclear power;
- **Reducing overall energy consumption** – by supporting more households to increase their thermal efficiency, and move towards more efficient appliances;
- **Electrifying gas consumption** – through a shift to efficient electric appliances that would cut bills and enable households to avoid paying fixed gas connection fees.

We welcome the opportunity to discuss any of these topics further with the committee.

Kind regards,

Jay Gordon, Energy Finance Analyst, Australian Electricity, IEEFA



(a) The cost of living pressures facing Australians;

IEEFA's submission focuses on energy-related cost of living solutions. As observed by other submissions to this inquiry, energy costs are significant in the context of cost of living pressures:

- “[...] record high wholesale prices for electricity are contributing to the increased cost to do business and manufacture goods flowing through to the prices of everyday items, while also pushing up electricity bills for everyday Australians.” – Clean Energy Council¹
- “[...] electricity and gas prices have been increasing at a rate that far exceeds both wage growth and CPI growth, with prices remaining relatively high for at least a decade. Gas, in particular, has seen a significant increase in the past year.” – Energy Consumers Australia²
- “For low-income households, expenditure on the basics, such as housing, food and energy costs, absorbs a disproportionate amount of their income. Around 40 per cent of these households are also vulnerable to energy stress.” – St Vincent de Paul Society³

(b) The Government's fiscal policy response to the cost of living;

The national Energy Bill Relief Fund is the most significant Commonwealth fiscal policy response to the recent rise in energy costs.

The fund provided a targeted \$1.5 billion in energy bill relief in FY2023-24,⁴ followed by a broader-reaching \$3.5 billion in 2024-25, paid via a \$300 (residential) or \$325 (small business) energy bill rebate as quarterly instalments.⁵

Evidence suggests these rebates are having a material impact on electricity bills.⁶ However, as of October 2024, inflation had not yet stabilised to the Reserve Bank of Australia (RBA)'s target range of 2-3%.⁷ This indicates that longer-term supports to reduce energy costs are likely needed, beyond one-off rebates.

Figure 1 shows a breakdown of costs for a typical residential electricity and gas bill in Australia.

¹ Clean Energy Council. [Select Committee on the Cost of Living: Submission](#). 8 March 2023. Page 1.

² Energy Consumers Australia. [Energy Consumers Australia Submission to the Select Committee on the Cost of Living](#). 9 March 2023. Page 1.

³ St Vincent de Paul Society National Council of Australia Inc. [RE: Select Committee on Cost of Living](#). 11 May 2023. Page 2.

⁴ Federal Financial Relations. [Energy Bill Relief Fund](#). Accessed 16 October 2024.

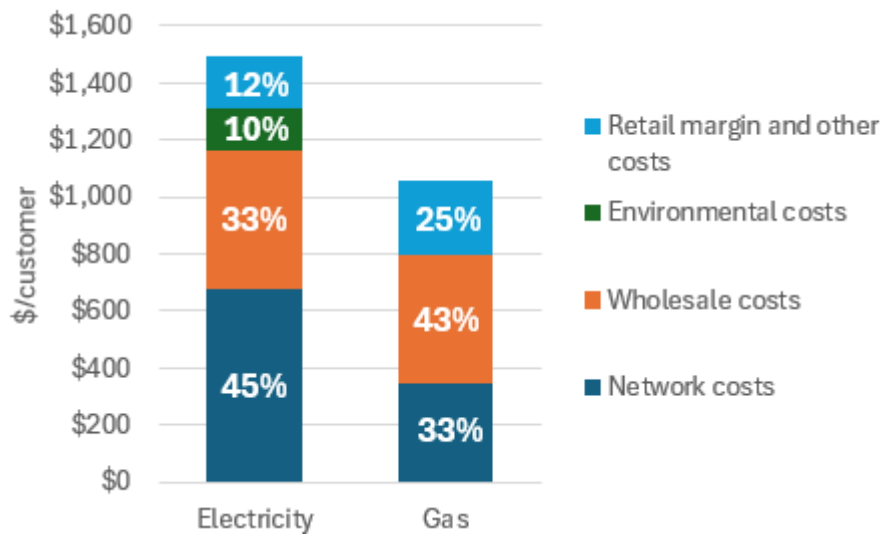
⁵ Supporting Australians. [Energy Bill Relief](#). Accessed 16 October 2024.

⁶ The Australian. [Power bill rebates drive inflation to three-year low](#). 26 September 2024.

⁷ Reserve Bank of Australia. [Inflation Overview](#). Accessed 16 October 2024.



Figure 1: Composition of an average residential electricity and gas bill



Sources: Average NEM electricity bill 2022-23 from [ACCC](#); average national gas bill 2021-22 from [AER](#)

Based on this, we have focused on four material areas where costs could be reduced in the long-term, by:

- Reducing network costs;
- Reducing wholesale electricity costs;
- Reducing energy consumption (hence reducing the overall cost stack); and
- Electrifying gas consumption (which is generally cost-effective and eliminates the need for a secondary energy connection).

In the following sections, we suggest strategies that would align to these four approaches.

(c) Ways to ease cost of living pressures through the tax and transfer system; and (d) Measures to ease the cost of living through the provision of Government services

Address network supernormal profits

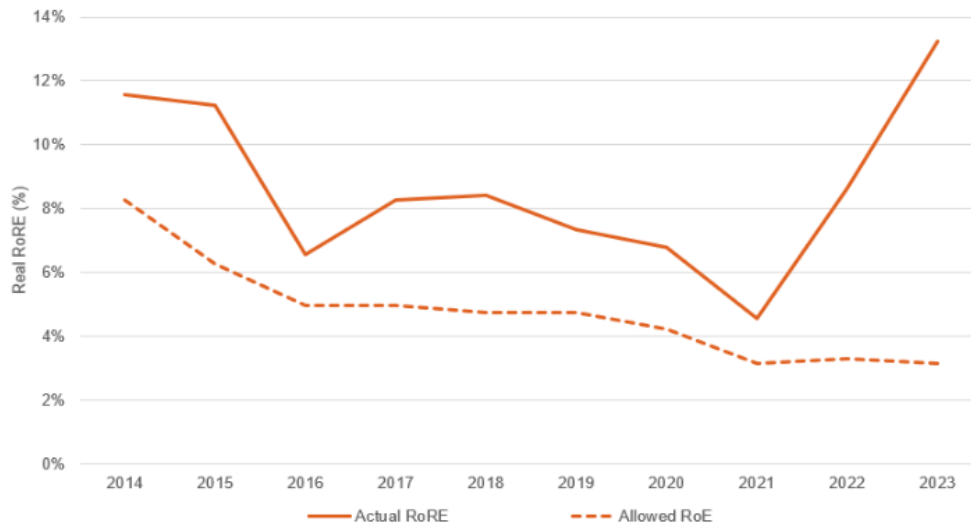
IEEFA has tracked the occurrence of supernormal profits in regulated electricity networks – finding that supernormal profits exceeded \$11 billion between 2014 and 2022, or about 67% higher than the profit allowance set by the Australian Energy Regulator (AER).⁸

Figure 2, taken from the AER's most recent network performance report, shows electricity network profits have likely increased significantly in the year since IEEFA's latest analysis, with returns on regulated equity reaching record levels in 2023.

⁸ IEEFA. [Power prices can be fairer and more affordable](#). November 2023. Page 5.



Figure 2: Electricity NSPs' real return on regulated equity vs allowed return on equity



Source: [AER Network Performance Report 2024](#)

These results are aggregated across all regulated electricity networks, and significant variance exists at an individual network level. For example, Endeavour Energy achieved returns of 34.2% in 2023 – more than 10 times its allowed rate of 3.29%.⁹

IEEFA's preliminary analysis of the AER's latest data indicates that electricity networks made approximately \$4.35 billion in supernormal profits in 2023.

This is much higher than the estimated \$2 billion, or on average \$185/customer, they made in 2022.¹⁰ It is also much higher than the \$3.5 billion spent by the federal government on the national Energy Bill Relief Fund.

The AER has confirmed that IEEFA's estimates of \$11.1 billion supernormal profits over 2014-22 were close to actual values, noting, "We derive a similar outcome to IEEFA with a return on equity of \$9.7 billion [...] The difference is that our estimate uses the actual leverage of the networks businesses as opposed to average gearing across networks used by IEEFA."¹¹ However, the AER does not routinely report absolute network profits, nor provide the actual leverage data for network businesses to enable others to calculate this.

The AER has expressed the view that the supernormal profits observed by IEEFA are expected under its incentive regulation approach.¹² However, it has not presented adequate evidence to show that such high returns, in some cases 10 times the allowed rate, are justified on the basis of benefits returned to consumers.

IEEFA recommends the federal government require the AER to report the absolute profits of regulated electricity networks, and request evidence to show if these extraordinary profits are justified based on benefits to consumers.

⁹ AER. [2024 Network Performance Report – Financial performance data 2024 – Electricity Networks](#). 20 September 2024.

¹⁰ IEEFA. [Power prices can be fairer and more affordable](#). November 2023. Pages 5 and 17.

¹¹ AER. [IEEFA's estimates of outperformance on returns are similar to those reported in the AER's Annual Electricity Network Performance Report](#). 22 November 2023.

¹² Ibid.

As a longer-term solution, **IEEFA recommends** the Productivity Commission conduct a first-principles review of the economic regulation of electricity distribution networks, addressing a broader range of issues around the current regulatory approach.¹³

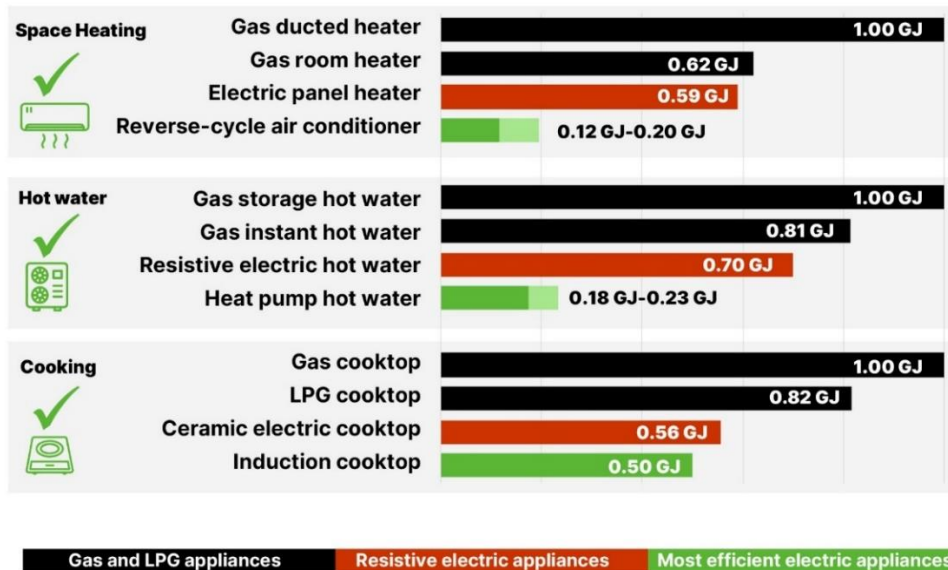
Shift to efficient electric homes

Typical existing Australian dwellings are characterised by poor thermal shell performance and often inefficient household appliances.

Several studies have identified that upgrading the thermal efficiency of Australian households would lead to significantly lower energy bills, often with a very attractive return on investment.¹⁴ However, uptake is inhibited by barriers such as split incentives between landlords and renters, lack of access to upfront capital, competing priorities and lack of clear information for consumers.

Furthermore, Figure 3 shows a staggering difference in energy consumption between the least-efficient and most-efficient types of appliance for major end-uses. IEEFA analysis found that switching to efficient electric appliances could result in bill savings of about \$1,200/year for a typical household in Victoria, including the avoided costs associated with maintaining a gas connection. Electrification of space heating alone could save more than \$700/year.¹⁵

Figure 3: Relative energy consumption for typical appliances by end use



Source: [IEEFA – Appliance standards are key to driving the transition to efficient electric homes](#)

IEEFA research estimates Australians purchase about 940,000 new gas appliances and 800,000 resistive electric appliances a year, locking in more than \$3.4 billion in avoidable future costs.¹⁶

¹³ See IEEFA. [Reforming the economic regulation of Australian electricity distribution networks](#). 31 May 2024.

¹⁴ For example: Climateworks Centre. [Climate-ready homes: Building the case for a renovation wave in Australia](#). December 2023.

¹⁵ IEEFA. [Managing the transition to all-electric homes: Technical appendices](#). 2 November 2023. Page 26.

¹⁶ IEEFA. [Appliance standards are key to driving the transition to efficient electric homes](#). April 2024. Pages 2 and 4.



Phasing out gas appliances is a highly effective strategy to reduce energy bills, given the large efficiency gains available, and save consumers money by consolidating their energy consumption into a single electricity connection.

Phasing out resistive electric appliances for heating and hot water is highly complementary, as it can provide additional bill reductions while offsetting some (or, in some regions, all) of the additional electricity demand from gas electrification.¹⁷

The federal government has committed \$1 billion to the Household Energy Upgrade Fund, “focused on helping homeowners fast track their transition to cheaper, cleaner energy”.¹⁸ However, this is based on a public-private financing partnership model that carries inherent limitations, particularly with respect to low-income households and renters.

Some states are moving to introduce or improve minimum energy efficiency requirements for rental properties – an approach that bypasses the split incentive barriers often faced when upgrading rental properties.¹⁹

Additionally, encouraging a shift towards efficient electric appliances would be consistent with the objectives of the Equipment Energy Efficiency (E3) program under the Greenhouse and Energy Minimum Standards (GEMS) Act, to:

- “Reduce energy bills for households and businesses;
- Drive energy efficiency improvements in new appliances and equipment;
- Decrease greenhouse gas emissions from appliance use.”²⁰

In 2024, the National Energy Performance Strategy identified expansion and modernisation of the GEMS Act as a priority.²¹ The GEMS Act is a policy framework well-suited to encourage the shift towards efficient electric appliances, which could be achieved by:

- Setting higher minimum energy performance standards for appliances;
- Ensuring all material energy-consuming appliances are covered by the act;
- Ensuring the E3 determinations structure recognises the value of electrification; and
- Applying a more consistent, expanded labelling framework to support consumer decision-making.

IEEFA recommends the federal government:

- Evaluate the effectiveness of the household energy upgrades fund, and consider alternative funding approaches; and
- Sets appropriate national guidelines for minimum energy performance standards in rental properties.

IEEFA recommends the federal government update the GEMS program to:

- Discourage or prevent the sale of domestic gas appliances;
- Discourage or prevent the sale of inefficient electric appliances; and

¹⁷ IEEFA. [Appliance standards are key to driving the transition to efficient electric homes](#). April 2024. Page 6.

¹⁸ CEFC. [Household Energy Upgrades Fund](#). Accessed 16 October 2024.

¹⁹ For example reforms have been consulted on in [Victoria](#) and the [ACT](#), with [New South Wales](#) set to investigate similar reforms.

²⁰ Energy Rating. [Equipment Energy Efficiency Program](#). Accessed 16 October 2024.

²¹ Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEE). [National Energy Performance Strategy](#). 5 April 2024. Page 42.



- Provide more transparent and complete information on appliance running costs at point-of-sale.

Plan to phase-down gas networks

Forecasts increasingly point towards a decline in residential and commercial gas consumption in Australia, with AEMO forecasting a 71% reduction on current levels by 2043 on the east coast.²²

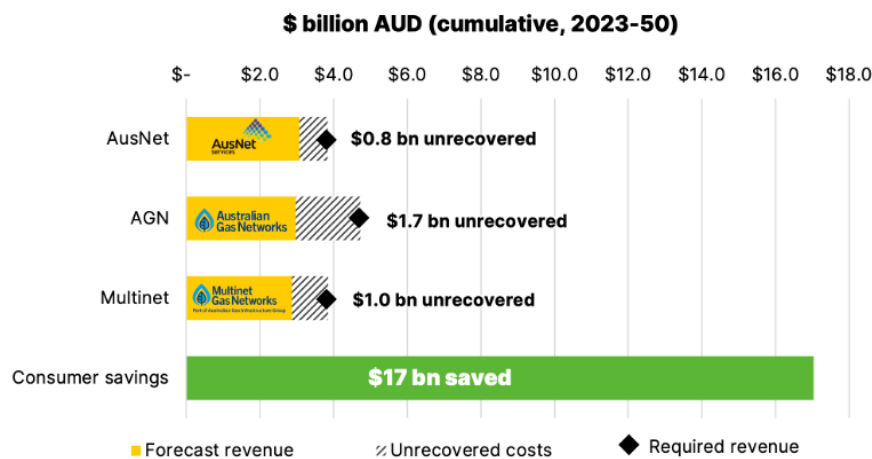
Some jurisdictions have implemented policies to provide direction on the future of residential gas consumption (including Victoria’s Gas Substitution Roadmap²³ and the ACT’s Integrated Energy Plan²⁴), or have signalled an intention to develop such policies (including NSW’s Gas Decarbonisation Roadmap²⁵).

However, the lack of a coherent policy around residential gas consumption and the future of gas distribution networks is creating significant challenges for regulators, networks and consumers. Most gas distribution networks are still seeing net increases in customer connections, although this is slowing.²⁶

Gas distribution networks are highly exposed to residential electrification, recovering more than 80% of their revenue from residential customers on average.²⁷

IEEFA’s modelling of Victorian gas distribution networks found that under a strong electrification scenario, gas distribution networks may need to increase their prices to unprecedented levels to recover costs from consumers (Figure 4).²⁸

Figure 4: Victorian gas distribution networks’ unrecovered costs vs consumer savings*



Source: IEEFA – *Managing the transition to all-electric homes*. *Based on IEEFA modelling

Conversely, if gas distribution price rises were capped, gas networks could face high unrecovered costs. This is, however, outweighed by the benefits to consumers.

²² Based on 2024 AEMO’s Gas Statement of Opportunities Step Change scenario, [AEMO gas forecasting portal](#).
²³ Victorian Dept of Environment, Land, Water and Planning. [Victoria’s Gas Substitution Roadmap](#). Accessed 16 October 2024.
²⁴ ACT Government. [The Integrated Energy Plan](#). 17 June 2024.
²⁵ NSW DCCEEW. [NSW Consumer Energy Strategy](#). September 2024. Page 73.
²⁶ AER. [2024 Electricity and gas network performance report](#). September 2024. Page 66.
²⁷ Based on IEEFA analysis of revenue information from AER gas network [Regulatory Information Notices](#).
²⁸ IEEFA. [Managing the transition to all-electric homes](#). November 2023. Page 20.



However, as the National Gas Laws also do not provide an explicit guarantee of revenue recovery for gas networks, there is a lack of clarity over how these costs should be allocated.

Furthermore, evidence published by IEEFA found gas distribution networks may have already been compensated for some of their stranded asset risks. Regulated gas networks have experienced consistent revenue over-recovery over an extended period, contributing to \$1.8 billion in supernormal profits since 2014, nearly double the regulator-approved allowance.²⁹

The AER has made several recent decisions regarding stranded asset risks for gas networks – however, this has primarily involved transferring those risks from networks to consumers via accelerated depreciation, which the AER has identified is not a long-term solution.³⁰ It is challenging for the AER to propose long-term solutions to gas network stranded asset risks given the lack of coherent federal government planning around the future of residential gas and gas distribution networks.

IEEFA recommends the federal government initiate a co-ordinated plan to manage the phase-down of gas distribution networks. At a minimum this should include:

- Clear timelines for the end of new residential gas connections;
- Guidance consistent with the national energy objectives on how the cost of the remaining asset base should be fairly shared between networks, consumers and governments; and
- A plan to develop solutions for “hard to electrify” cohorts, which may include some high-density housing and some distribution-connected commercial premises.

Allow households to benefit from demand flexibility

Many Australian jurisdictions already experience an abundance of low-cost solar energy during the middle of the day. However, not all consumers are equipped to take advantage of this.

Moving flexible sources of electricity demand to optimal times can reduce energy costs by:

- Allowing consumers with rooftop solar, or on time-of-use tariffs, to move their energy consumption to times when it is cheap or free; and
- Mitigating increases in peak electricity demand, which can reduce overall system costs.

Residential hot water systems present one of the most material sources of flexible demand.³¹ Large numbers of households already have resistive electric, or heat pump hot water systems. These systems can be configured to operate during cost-optimal times, such as the middle of the day, via a combination of passive and active management.

Furthermore, a large number of households are expected to convert from gas hot water systems to electric heat pump hot water systems – as evidenced by a long-term growing trend of heat pump hot water system installations reported by the Clean Energy Regulator.³² Ensuring these systems are equipped with low-cost control systems to unlock their flexible demand potential is a no-regrets action to unlock lower energy costs.

²⁹ IEEFA. [Gas networks are making persistent and significant supernormal profits](#). 6 June 2024. Page 16.

³⁰ AER. [AER decision supports Victorian gas consumers in energy transition](#). 2 June 2023.

³¹ IEEFA. [Australia needs more efficient, smarter hot water systems](#). August 2024. Page 1.

³² Clean Energy Regulator. [Quarterly Carbon Market Report June Quarter 2024](#). 9 October 2024.



Recent IEEFA analysis found:

- “Improving efficiency and flexibility of water heating can significantly reduce this major cost for households and for the entire electricity system”;
- “Hot water systems in Australia should be dynamically managed, to heat when there is abundant renewable electricity”; and
- “Government subsidies and standards should be updated to ensure all hot water systems sold in Australia are efficient and smart, as a futureproofing and cost-saving measure.”³³

IEEFA recommends the federal government:

- Requires heat pump hot water systems installed under the Small-scale Renewable Energy Scheme (SRES) to have dynamic management capabilities;
- Fund a heat pump hot water system roadmap for commercial and residential strata buildings; and
- Investigate the implementation of “smart” requirements for hot water system products via the GEMS Act.

Accelerate the uptake of rooftop solar and household batteries

Australia has emerged as a global leader in the uptake of rooftop solar, with about one in three homes having a rooftop solar system.³⁴

However, to achieve the most equitable and effective impact on cost of living, rooftop solar deployment ought to be increased among underrepresented households, including renters and apartment dwellers.

Deployment of residential batteries could have a profound effect on reducing energy bills, by allowing households to utilise more of their own rooftop solar.

Furthermore, the benefits of rooftop solar and batteries aren't limited to their direct owners. IEEFA analysis has found that, “rooftop solar and batteries will put the famous solar-created supply-demand duck curve to sleep”, presenting a significant opportunity to reduce overall system costs, benefiting all consumers.³⁵

Battery costs are in rapid decline, which is likely to improve the economic case for household batteries.³⁶ However, targeted incentives could help accelerate their adoption. NSW is the only Australian jurisdiction with plans to introduce incentives for residential battery uptake, via its Peak Demand Reduction Scheme.³⁷

Subsidies for batteries could be introduced at the federal level, accompanied by other policy schemes that ensure renters, low-income households and apartment dwellers can access their benefits.

Furthermore, electric vehicle sales are expected to rise rapidly in Australia. These vehicles can function as “batteries on wheels”, providing many of the same services as a standalone

³³ IEEFA. [Australia needs more efficient, smarter hot water systems](#). August 2024. Page 1.

³⁴ Roy Morgan. [Solar Energy Systems on households have more than doubled since 2018 – now at nearly a third of all households \(32.3%\)](#). 18 October 2022.

³⁵ IEEFA. [Saturation DER modelling shows distributed energy and storage could lower costs for all consumers if we get the regulation right](#). 27 April 2023.

³⁶ PV Magazine. [Battery prices collapsing, grid-tied energy storage expanding](#). 7 March 2024.

³⁷ NSW Climate and Energy Action. [Incentives for residential batteries](#). Accessed 17 October 2024.

residential battery. However, to unlock this potential, regulations and standards will need to be updated to ensure consumers have access to vehicle-to-grid (V2G) and vehicle-to-home (V2H) functionality.

IEEFA has noted that the federal government's flagship policy to accelerate EV uptake, the New Vehicle Efficiency Standards, underestimates the value that EVs can play to the electricity system via vehicle-to-home (V2H), vehicle-to-load (V2L) or vehicle-to-grid (V2G) services.³⁸

IEEFA recommends the federal government:

- Implement schemes targeted specifically towards increasing rooftop solar uptake among renters and apartment buildings;
- Implement incentives to encourage the uptake of residential batteries, with added supports targeted at low-income households, renters and apartment buildings; and
- Accelerate the uptake of electric vehicles in Australia, including developing common standards for V2G/V2H.

(e) Any other related matter

The federal government should consider how its policies support the long-term reduction of wholesale electricity costs.

In the National Electricity Market, the wholesale spot price of electricity at a given 5-minute interval is typically set by the most expensive form of generation required to be called upon – described as the “price-setter”.

Increasingly, renewable energy is the price-setter during the middle of the day, leading to low or negative wholesale spot prices at those times.

However, gas and coal generation are still responsible for price-setting 15% and 29% of the time in the NEM, respectively.³⁹ Both of these forms of generation are more expensive than renewable energy, which places upwards pressure on wholesale electricity prices.

The NEM's exposure to coal and gas makes wholesale prices vulnerable to:

- Volatility in fuel costs for gas and black coal – for example, a global surge in gas prices in 2022 contributed significantly to higher wholesale electricity prices;⁴⁰ and
- Reliability issues with older generators – particularly Australia's ageing coal power fleet.⁴¹

CSIRO estimate the Levelised Cost of Electricity for a range of generation technologies in their annual GenCost report. The 2023-24 GenCost report confirms that solar and onshore wind (including with integration costs) is the lowest-cost form of generation, with peaking gas being the highest-cost form of generation operational in the NEM.⁴²

³⁸ IEEFA. [Why Australia is likely underestimating the benefits of electric vehicles](#). 25 March 2024.

³⁹ AEMO. [Quarterly Energy Dynamics Q2 2024](#). July 2024. Page 19.

⁴⁰ AER. [Wholesale electricity market report 2022](#). December 2022. Page 18.

⁴¹ Ibid. Page 68.

⁴² CSIRO. [GenCost 2023-24](#). May 2024. Page 72.



GenCost also observes that nuclear power, although nonexistent in today's NEM, would be higher cost than gas.⁴³ IEEFA analysis has found that a plan to introduce nuclear power in Australia could lead to household electricity bills rising by \$665/year on average.⁴⁴

These dynamics highlight that the most effective approach to reducing wholesale electricity costs is to maximise the share of renewable energy – particularly solar and wind – while reducing the grid's reliance on coal and gas. Such a strategy is also consistent with the federal government's legislated renewable energy targets.

Conversely, wholesale costs are likely to increase under a strategy where the penetration of gas or coal generation is increased, or if higher-cost alternatives such as nuclear power are introduced.

IEEFA recommends the federal government:

- Maintain its target to achieve 83% renewable energy by 2030;
- Support states to maintain retirement dates for coal power stations that align with this target;
- Ensure the role of gas generation is limited to the minimum level required to support renewable energy uptake; and
- Does not consider the introduction of nuclear power generation in Australia.

⁴³ CSIRO. [GenCost 2023-24](#). May 2024. Page 72.

⁴⁴ IEEFA. [Nuclear in Australia would increase household power bills](#). 20 September 2024. Page 6.