

16 October 2026

To: Select Committee on Productivity in Australia
Re: Environmental efficiency

Thank you for the opportunity for the Institute for Energy Economics and Financial Analysis (IEEFA) to provide input to the Select Committee on Productivity in Australia in relation to environmental efficiency.

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.

Our response outlines several areas where we believe there are untapped productivity opportunities across several areas of the energy sector within IEEFA's coverage – including the built environment, energy networks, transport, industrial decarbonisation and carbon markets.

We would welcome the opportunity to discuss any of these topics in greater detail with the Committee.

Kind regards,

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Jay Gordon – Energy Finance Analyst, Australian Electricity

James Bowen, Lead Analyst, Australian Industrial Decarbonisation

Jonathan Teubner – Lead Analyst, Australian Coal



Built environment

Australia's **poor-performing housing stock** is a burden on productivity. [Most high-productivity countries](#) within the Organisation for Economic Co-operation and Development (OECD), the Commonwealth and the Asia-Pacific region have minimum efficiency standards for residential buildings. Reverting Australia's building efficiency standards could lead to challenges around energy affordability and peak demand.

Residential electrification is **significantly lowering energy costs in Victoria**. IEEFA estimates households have saved [\\$185 million](#) from electrification initiatives since 2023.

Residential electrification is a cost-effective way to deliver secure energy supplies for large gas users. Since 2023, Victorian households have averted [5.6 petajoules \(PJ\) per year](#) in gas demand, which is equivalent to 40% of the state's gas demand for power generation.

There is significant **untapped potential for solar and storage in commercial and industrial sites**. [IEEFA noted](#) the technical potential could be much higher than the 17-31 GW capacity forecast by 2050, though significant barriers remain.

Energy networks

There are significant inefficiencies in the electricity network regulations. IEEFA found that electricity networks recovered [\\$15 billion in excess profits](#) above the regulator-approved allowance between 2014 and 2023. Despite calculating similar levels of 'outperformance', the [Australian Energy Regulator \(AER\) has claimed](#) that the regulatory system is working as expected and delivering large benefits to consumers. However, no quantitative evidence has been provided to illustrate a net benefit to consumers, and the average utilisation of electricity networks is [only 46%](#).

The Australian Energy Market Commission (AEMC) is [reviewing the economic regulation of electricity networks](#). However, IEEFA is concerned that its scope is too narrow to address a number of the [core issues](#) we have observed – as we noted in our [recent submission](#) to the AEMC review.

As electrification is now [cost-effective for most households](#), it is increasingly unproductive to maintain a large secondary energy network for gas. However, gas networks have a significant sunk asset base, and no government has fully engaged with the question of how the cost of this will be shared fairly. An [AEMC draft determination](#) could lead to gas consumers to bear [significant rising costs](#) in the form of accelerated depreciation of gas network assets, despite the declining competitiveness of gas relative to electrification.

Transport

Passenger electric vehicle (EV) uptake [is growing](#) in response to volatile global oil prices. This has significant productivity benefits in its own right – but also presents a window of opportunity. Solutions such as **smart EV charging** and **vehicle-to-grid** could allow EVs to provide significant additional value to the energy system.

Australia is the world's biggest diesel importer, accounting for 10% of global net seaborne trade. The country is therefore **highly vulnerable to supply disruptions** of the kind seen this year as a result of the Iran conflict. A concerted efficiency drive could cut our reliance on [diesel road freight](#), and thereby reduce our exposure to global fuel shocks. It could also reduce the impact of diesel price increase on freight operators, especially small businesses. Efficiency measures, process and technology improvements could deliver efficiency gains of 10%–20%. Despite this, Australia is [lagging on industrial energy efficiency](#), especially energy management, which can deliver large savings at no/low cost – Australia ranked last of the top 25 energy-using countries on energy management policy and certification.

IEEFA also identified that oil price shocks were a **key contributor to all six inflation spikes** since 2000. The key link between [oil prices and inflation](#) is road transport oil use – which impacts inflation directly through the cost of cars, indirectly through the cost of transporting goods, and also through raising inflation expectations due to the visibility of oil prices at the pump. Accelerating transport electrification, especially for heavy vehicles, can protect Australia's economy from oil price shocks. Oil consumption and emissions reductions could be expedited by providing [targeted incentives for electrification](#) of high road users.

Industry

IEEFA research (to be published in a forthcoming report) has found that facility closures and production cuts accounted for all net emissions reductions at non-fossil fuel facilities covered by the Safeguard Mechanism. IEEFA has also found that facility closures were behind a [large reduction in industrial gas use](#) in eastern Australia. Some of those closures were linked to increases in domestic gas prices, while miners are also announcing job cuts in response to high diesel prices. Australian energy productivity [improved by 1.9 per cent in 2024-25](#) and by 25.5 per cent over the past 10 years. Some of this improvement was due to a structural shift away from energy-intensive industries towards less energy-intensive sectors. Accelerating improvements in energy efficiency and the adoption of renewables and electrification could make energy-intensive industrial facilities more resilient to fossil fuel price shocks and help ensure that these industries retain a strong role in a productive Australian economy.

There remain many untapped [opportunities to reduce industrial emissions](#) while delivering cost savings, including: energy efficiency, low grade heat and underground mine electrification, renewables in remote sites, clinker substitution in cement, and capturing fugitive methane emissions. Many of those opportunities can deliver material benefits to industry beyond cost savings, including **improved productivity, better working conditions** for employees and

enhanced energy security. However, Australia lags other industrialised countries on uptake of these measures due to a range of barriers and lack of effective policy incentives.

The technologies necessary for decarbonising mining are increasingly mature. Chilean miners (including BHP, Rio Tinto and South32) are targeting 90% renewable electricity by 2030; Canadian miners are adopting battery-electric haul trucks, especially in underground mines; Chinese underground mines are now required to capture and utilise fugitive methane; and large savings are available in low-cost [fuel efficiency improvements](#). But once again Australia is lagging on all those fronts. Policy reform is critical – insufficient regional planning, diesel tax credits and the Safeguard Mechanism’s design currently skew incentives towards carbon-intensive production.

Carbon markets

Australia’s [reliance on carbon credits](#) to meet net emission decline targets under the Safeguard Mechanism, especially for the coalmining sector, presents a future risk to productivity growth across the economy.

[IEEFA’s submission to the Safeguard Mechanism review](#) concluded that there is strong evidence that access to unlimited credits, including through the purchase of land-based offsets, is hindering the uptake of abatement action. This is especially true of the coal sector – [IEEFA’s research](#) reveals that coal mining in 2024-25 accounted for 49% of all credits surrendered under the Safeguard Mechanism. Lease applications by the coal industry, such as the [Hunter Valley Operations \(HVO\) Continuation Project](#), demonstrate a heavy reliance on offset purchases through carbon markets rather than investment in onsite abatement.

This failure to invest in abatement is a constraint on research and development into new decarbonisation technologies. In turn, this investment failure places Australia at a competitive disadvantage in future mining and developments; constraining technological productivity growth from the mining sector and reducing Australia’s overall economic growth.

The mining sector’s [reliance on diesel](#) also represents a growing energy security risk for the country. Australia’s [diesel consumption has multiplied 2.5-fold since 2000](#), fuelled by growing use in road transport and mining. Mining use multiplied nearly five-fold over the period, due to both increased activity and rising diesel use by ton of product. Australia’s growing diesel use is at odds with other similar economies, which have been decreasing their diesel intensity. As Australia has also shifted from being mostly self-reliant to being mostly import reliant, relying on carbon credits rather than on reducing diesel use to cut emissions will only worsen Australia’s exposure to global fuel shocks.

Reforming the Safeguard Mechanism and other policies to limit the use of offsets and incentivise investment in on-site abatement would therefore boost future innovation and the productivity of the Australian economy.