



25 January 2024

To: The Treasury

**Re: 2024-25 Pre-Budget submissions**

Dear The Hon Stephen Jones MP, Assistant Treasurer and Minister for Financial Services,

The Institute for Energy Economics and Financial Analysis (IEEFA) is grateful for the opportunity to present its submission to the 2024-25 pre-Budget consultation. IEEFA is an 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 is supportive of the government's investment of A\$40 billion in the energy transition to support a less emissions-intensive economy.<sup>1</sup> In particular, the expansion of the Capacity Investment Scheme to support 23 gigawatts (GW) of renewable energy and 9GW of storage is a welcome step which will help decarbonise Australia's energy system.

In addition to existing government funding, IEEFA believes some strategic interventions in energy performance and electrification could deliver strong emissions reductions and help alleviate the cost-of-living crisis. IEEFA also believes that some government expenditure could be redirected to programs that will be more effective in delivering a net zero emissions economy by 2050.<sup>2</sup>

IEEFA recommends the government:

- Prioritise funding energy performance and electrification to reduce energy bills.
- Focus the funding of hydrogen on the most valuable and energy efficient use cases.
- Redirect funding from the Beetaloo and Middle Arm gas ventures to gas demand reduction.

Please do not hesitate to contact us for any further information.

Kind regards,

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Submitted via email.

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<sup>1</sup> Department of Climate Change, Energy, the Environment and Water (DCCEEW). [Annual Climate Change Statement 2023](#). Page 3.

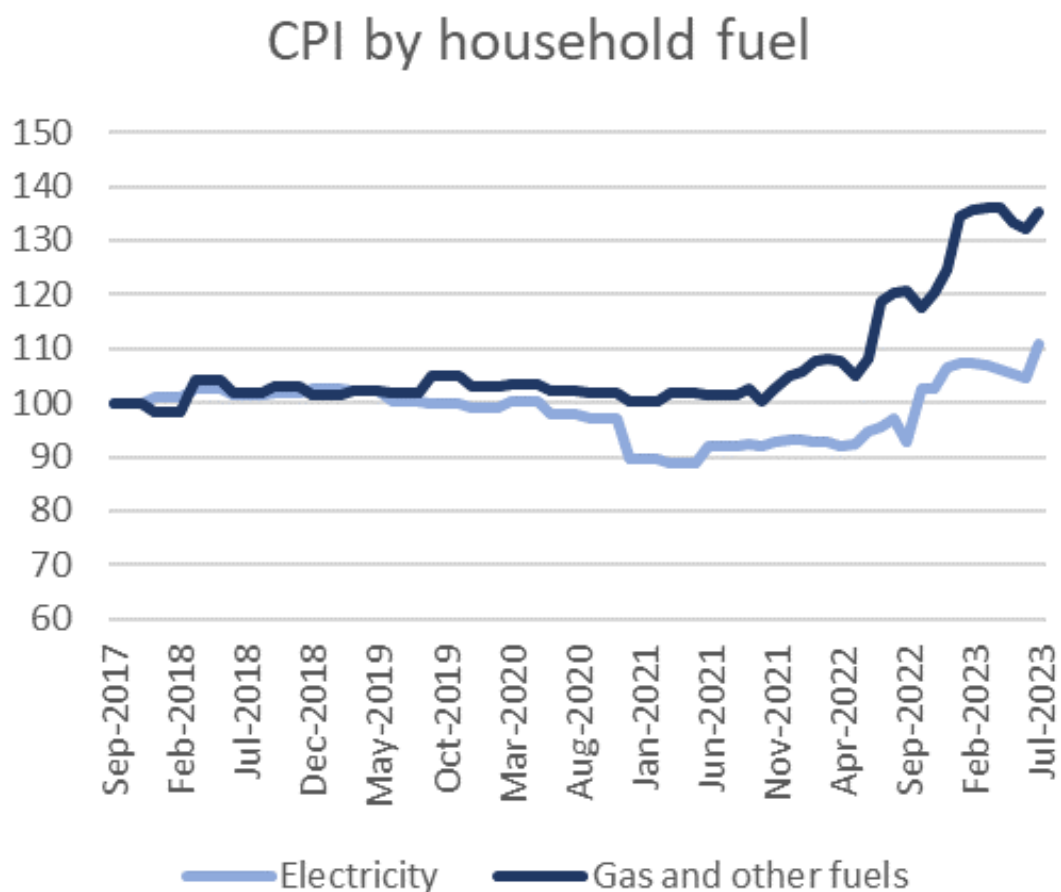
<sup>2</sup> DCCEEW. [Net Zero](#). Accessed 18 January 2024



# Prioritise funding energy performance and electrification to reduce energy bills

The 2024 Commonwealth budget provides an opportunity to progress measures to support electrification and energy performance, which are highly effective measures to drive down energy bills, assisting with the cost of living. IEEFA's submission to the Senate inquiry on residential electrification in September 2023 observed that "[...] households that consume gas are more exposed to energy price inflation than if those loads were switched to electricity" (Figure 1).<sup>3</sup>

**Figure 1: Consumer price index (CPI) of electricity compared with gas and other household fuels, 2017-23.**



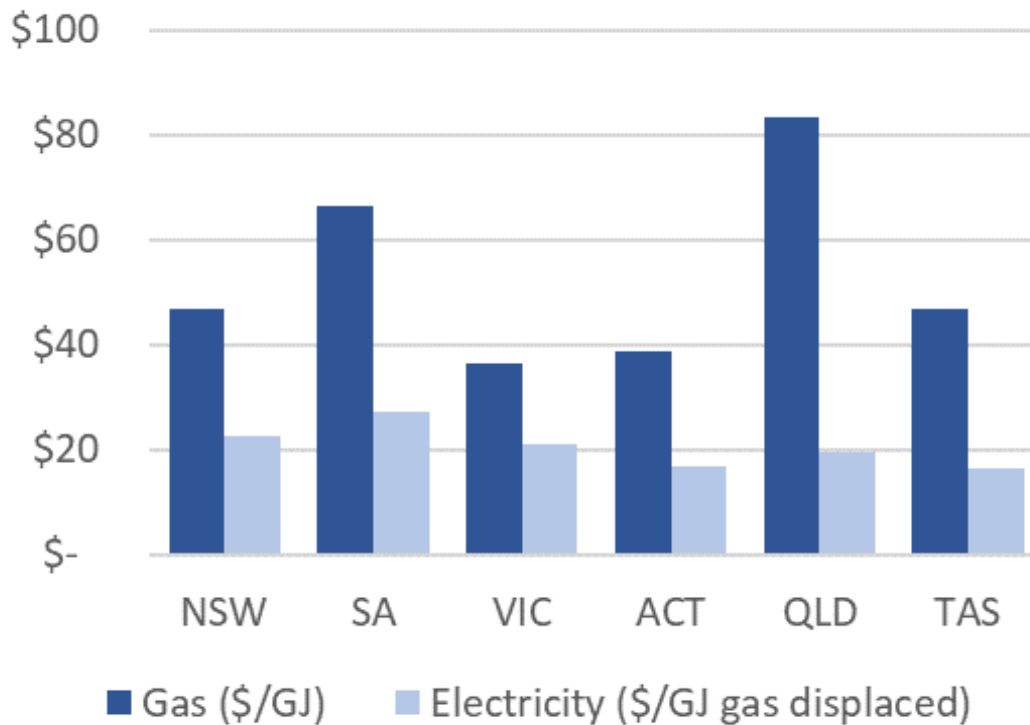
Source: IEEFA; data from Australian Bureau of Statistics.<sup>4</sup>

<sup>3</sup> IEEFA. [Submission to senate inquiry on residential electrification](#). 28 September 2023. Page 3.

<sup>4</sup> Ibid. Page 3.

Across the National Electricity Market (NEM), electricity is a significantly cheaper household fuel when the relative efficiencies of modern electric appliances versus gas appliances are considered (Figure 2).

**Figure 2: Gas price vs electricity (for running efficient appliances) in the NEM**



Source: IEEFA; analysis based on data from St Vincent de Paul.<sup>5</sup>

Note: Electricity is expressed in terms of \$/GJ gas displaced, with one unit assumed to displace five units of gas.

By contrast, alternatives such as biomethane and hydrogen are likely to result in higher costs for consumers. IEEFA research found that: “Electrification would cost less than switching to biomethane or hydrogen.”<sup>6</sup> It also found that: “On average, it would take five times the amount of electricity to heat a home with renewable hydrogen when compared with an electric heat pump.”<sup>7</sup>

The household bill savings from electrification can be magnified by simultaneously improving the thermal efficiency of homes, and by utilising appliances that take advantage of periods where consumers have excess rooftop solar output, or wholesale electricity prices are cheap or negative.<sup>8</sup>

<sup>5</sup> IEEFA. [Submission to senate inquiry on residential electrification](#). 28 September 2023. Page 8.

<sup>6</sup> IEEFA. [‘Renewable gas’ campaigns leave Victorian gas distribution networks and consumers at risk](#). Page 4.

<sup>7</sup> Ibid. Page 15.

<sup>8</sup> IEEFA. [Managing the transition to all-electric homes](#). 2 November 2023. Page 29.



While residential electrification could lend immediate cost-of-living relief to households, there are likely to be additional opportunities in the commercial and industrial (C&I) sectors, which could further reduce costs for Australian businesses and the energy system as a whole. IEEFA recently identified large untapped potential to profitably reduce gas demand in industry via electrification and energy productivity improvements.<sup>9</sup> Combined with residential interventions, these demand reductions could fill the upcoming gas supply gap while also lowering net energy costs for consumers.

Despite the cost savings available, a range of barriers continue to prohibit many Australian homes and businesses from taking advantage of electrification and energy productivity improvements.

What follows is a series of high-level proposals for the budget that could be further fleshed out on request. These proposals flow from IEEFA's analysis and are designed to support energy bill reduction for households and businesses.

## 1. Household cost-of-living busters

### A. Tax deductions for minimum energy performance rental standards

What: Tax deductions for landlords to meet residential rental property minimum standards (as in the ACT – and other states to pass equivalent regulations in their jurisdictions that should also cover electrification, with the finalisation of the National Framework for Minimum Rental Requirements).<sup>10,11</sup>

Why: Energy costs are a major issue for renters, who have little control over the major energy-using appliances in a rental property, other than the fridge. Several groups including the Grattan Institute have raised tax deductions as an effective solution to incentivise energy upgrades in rental properties.<sup>12</sup>

How: Make provision for tax deductions of this form for the next three years (or whenever the minimum standards will commence) in the 2024 Commonwealth budget.

### B. Support and grow one-stop consumer energy shops nationally

What: Victoria is introducing one-stop electrification shops as “a focused outlet providing information that streamlines and simplifies the process for householders to connect with accredited installers and products, and apply for rebates and incentives”.<sup>13</sup> These are also needed in South Australia and New South Wales in particular. They should be extended to also include access to energy efficiency, in particular thermal efficiency upgrades, as well as solar photovoltaic (PV) and storage, due to the benefits of implementing those actions together. The federal government could learn from the pilot in Victoria in early 2024 and provide funding for roll-out nationwide.

<sup>9</sup> IEEFA. [Reducing demand: A better way to bridge the gas supply gap](#). 16 November 2023. Page 10.

<sup>10</sup> Healthy Homes for Renters. [Letter from the Better Renting Coalition](#). 30 August 2023

<sup>11</sup> Healthy Homes for Renters. [Community Sector Blueprint](#).

<sup>12</sup> Grattan Institute. [Getting off gas: Why, how, and who should pay?](#) June 2023. Page 28

<sup>13</sup> Switched On. [Victoria's new State Electricity Commission to establish one-stop-shops for householder electrification](#). 22 December 2023.



**Why:** Households and small and medium enterprises (SMEs) need assistance and education through the electrification process, including finance.

**How:** To be determined following Victorian trial. The one-stop shops could also have a public education remit.

### C. Electrification industry capacity building

**What:** Improving the accreditation and training available for electrification and identifying other workforce barriers to electrifying Australia's housing stock in line with its emissions reduction targets. Development of specific training programs, incentives and other measures to build skills.

**Why:** The transition to all-electric homes necessitates a rapid increase in capabilities in the trades required to install electric appliances. Plumbers and electricians could be better equipped with specific knowledge about the cost/benefits of electric technologies and how to install them.

**How:** Draw on existing research to identify skills needs; fund training capacity and create incentives for trades such as gasfitters to take on necessary courses. Develop a database of accredited all-electric installers.

### D. Top up funding for social housing energy retrofits

**What:** The 2023 federal budget included A\$300 million to contribute to energy retrofits in 60,000 social housing dwellings (with assumed contributions from states and territories). This funding should be topped up to convert a greater proportion of the 442,700 social housing dwellings in Australia to efficient all-electric homes.<sup>14</sup>

**Why:** Upgrading social housing improves energy affordability for vulnerable Australians.<sup>15</sup> It also creates a guaranteed demand for the skills and materials needed to upgrade homes, which provides industry with the certainty needed to invest in skills and capacity to deliver home energy upgrades to all customers.

**How:** Review the success of the \$300m funding in the 2023 budget, including how much was matched by states/territories. Adjust the delivery mechanism according to this review.

## 2. Assist C&I sector with energy performance

### A. Financial support for first wave of industrial heat pumps

**What:** Financial and technical support for heat pump deployment in a representative sample of industrial businesses, with a particular focus on food and beverage businesses, and a remit to learn from the experience.

**Why:** Heat pumps in industrial settings will present large-scale benefits – reducing emissions, improving energy productivity, and reducing energy costs for businesses.<sup>16</sup> However, there are currently limited capabilities and supply chains for industrial heat pumps in Australia, which makes the costs of implementing them prohibitive.

<sup>14</sup> Australian Institute of Housing and Welfare. [Housing assistance in Australia](#). 14 July 2023.

<sup>15</sup> Climateworks Australia. [Climate-ready homes: Building the case for a renovation wave in Australia](#). November 2023.

<sup>16</sup> Australian Alliance for Energy Productivity (A2EP). [Heat pumps for industrial and commercial applications](#). 2023.



**How:** A dedicated program to implement heat pumps across a subsection of industrial businesses, including provision of services and material, and financial support. In terms of scale, it could, for example, target 1%-2% of food and beverage gas use in 2024. The program should ensure that actual energy needs of businesses are assessed and that new systems are optimised in terms of size, heat provided, set-up and flexibility/storage, rather than replacing like for like. Learnings should be gathered and then disseminated.

## B. Simplify and support large energy-using businesses' energy performance decision making

**What:** Legislation plus on-budget support for energy productivity measures for energy-using businesses above a certain size. The threshold would need to be determined (it was 0.5 petajoules (PJ) under the former Energy Efficiency Opportunities (EEO) Act) and could be reduced over time.

**Why:** No comprehensive program has tackled large industrial energy productivity since the EEO Act. This is a major untapped opportunity for reducing electricity and gas use as well as business costs. Systemic capability gaps exist on energy management in Australia, as demonstrated by several previous programs and analyses. It has long been observed that businesses often only implement opportunities with paybacks below one or two years, often paid for within operating budgets. In designing this program, it will be useful to review learnings from the EEO program, and implement key outcomes – such as the value of cross-disciplinary teams within companies, involving not only technicians, but also finance specialists. In addition, only 20 ASX200 companies are captured by the Safeguard Mechanism. This provides a program to support other large companies to improve their energy productivity.

**How:** Require businesses above a certain size to assess their energy productivity (capacity for energy efficiency, electrification, rooftop solar, batteries, flexible demand, electric vehicle (EV) charging and discharging, etc) and report this publicly – with criminal penalties and fines for incorrect reporting (as under the former EEO Act). Legislate this requirement. Provide funding proportional to energy use once every three years. This funding must be easily accessible and involve an accredited energy assessor. Provide funding for building capability of service providers as well as in-house energy managers/technicians. Conduct in-depth reviews of large energy end-use categories, similar to what was done for compressed air systems.<sup>17</sup> Educate service providers on the findings and implications for their work, build capability on gas efficiency which is currently low in Australia. Give access through the Clean Energy Finance Corporation (CEFC) to innovative and flexible financing solutions, such as pay-for-energy service models that can pay for upgrades through operating budgets or loans that repay upgrades from profits. Complement with an energy performance information clearing house – a website and data portal on energy performance that would allow businesses to easily benchmark their energy performance.

## C. Extend the Small Business Energy Incentive

**What:** The Commonwealth's Small Business Energy Incentive goes some way towards supporting energy performance for businesses with aggregated annual turnover of less than A\$50 million. Small businesses will be eligible for a bonus 20% tax deduction for the cost of eligible

<sup>17</sup> Australian Alliance for Energy Productivity (A2EP). [Compressed air efficiency & alternatives](#).



depreciating assets that support electrification and more efficient use of energy, such as installing efficient fridges and heat pumps.<sup>18</sup> However, this incentive applies only for a year to 30 June 2024, not long enough to make a substantial difference to small business energy bills. Several organisations have suggested that the incentive's end date be extended to 30 June 2025.<sup>19</sup> Combine this with education of financial advisers on multiple benefits of energy productivity. Ensure tight definitions of energy performance to mitigate against the use of this requirement and associated funding for business-as-usual purposes.

Why: Programs to support major business investment are best set up to run for a minimum of three years to gain momentum and build capacity within industry. For example, the installation of C&I batteries is still in its very early stages across Australian industry and will require time to develop economies of scale. Providing support for that industry for several years, through this tax incentive, will help it mature

How: Extend the Commonwealth's Small Business Energy Incentive so that it runs for three years, until 20 June 2026

## Further energy performance proposals

### A. Build refrigeration industry capacity

What: A focused program to work with C&I refrigeration businesses to build their energy performance capacity.

Why: There are only a small number of companies (estimated to be six on the east coast) that provide C&I refrigeration services. If these companies can upgrade their skills and experience in energy productivity, this will have a disproportionate impact on C&I energy use.

How: Tender for a contract to build energy performance capacity in the refrigeration industry.

### B. A domestic hot water strategy

What: Funding to develop a national domestic hot water strategy – as recommended in the UTS Domestic Hot Water and Flexibility Report.<sup>20</sup> Prioritise identifying how best to subsidise both electrification of gas hot water systems, and making existing electric hot water systems demand-responsive, so they can make best use of variable renewable energy (such as abundant daytime solar energy) and avoid adding to peak demand in evening periods. This should also include trade literacy and certification.

Why: This is largest potential source of flexible demand that is easily available (i.e. other than EVs), which will reduce the cost of the energy transition if well implemented. It also offers significant domestic manufacturing opportunities.

How: Could be allocated via the Australian Renewable Energy Agency (ARENA).

<sup>18</sup> Australian Government Treasury. [Small Business Energy Incentive](#). July 2023.

<sup>19</sup> Ai Group, Australian Chamber of Commerce and Industry, Australian Sustainable Built Environment Council, Business NSW, Council of Small Business Organisations Australia, Energy Consumers Australia, Energy Efficiency Council, Facility Management Association of Australia, Green Building Council of Australia, Property Council of Australia. [Joint submission on the Small Business Energy Incentive Exposure Draft](#). 18 July 2023.

<sup>20</sup> ARENA. [UTS Domestic Hot Water and Flexibility Report](#). 16 May 2023.



### C. Upgraded funding for GEMS and DER standards

**What:** Funding to develop distributed energy resources (DER) standards governance, including flexible demand requirements, and speed up the development and stringency upgrades of minimum energy performance standards (MEPS) and star ratings under Greenhouse and Energy Minimum Standards (GEMS). It is recommended that GEMS and DER technical standards are housed jointly to minimise costs and maximise overlapping skillsets. See the IEEFA report *Growing the Sharing Energy Economy* for further detail on the need to increase focus on DER technical standards.<sup>21</sup>

**Why:** Large energy-using household appliance standards are vital for the energy transition to reduce costs for households and the system as a whole.

**How:** It could be allocated to whichever body is given the responsibility for setting DER technical standards.

## Focus funding of hydrogen on the most valuable, energy efficient use cases

The government's A\$2 billion Hydrogen Headstart program is an important example of a program that could be adjusted for increased impact.<sup>22</sup> While IEEFA welcomes the Australia government providing funding for low-emissions fuels that are in the pre-commercialisation phase, such as green hydrogen, we recommend that hydrogen funding should be directed towards the most valuable and energy-efficient use cases (given it is relatively expensive to produce and transport). Specifically, the Australian government should support initiatives that prioritise the domestic use of green hydrogen rather than export projects.

One such use is decarbonisation of ammonia production, which IEEFA advocated for in its submission to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) for the Review of the National Hydrogen Strategy.<sup>23</sup> Ammonia production already relies on hydrogen, making it a prime candidate for the use of green hydrogen. Only limited additional costs are required to allow the direct use of hydrogen as a feedstock rather than using fossil gas.<sup>24</sup>

There is already significant ammonia production capacity in Australia, with about 1.8 million tonnes (Mt) of annual production. Converting even some of this production to use hydrogen could create a source of demand for green hydrogen at scale.

Using hydrogen for domestic production of green iron is also a promising decarbonisation opportunity.<sup>25</sup> Australia is not a major steelmaker, but it is the world's largest exporter of iron ore, giving it a highly significant position in the global steel supply chain. Australia's Pilbara region is endowed with high renewable energy resources as well as abundant iron ore. Green iron could

<sup>21</sup> IEEFA. [Growing the Sharing Energy Economy](#). 13 October 2023.

<sup>22</sup> DCCEEW. [Hydrogen Headstart program](#). Accessed 18 January 2024

<sup>23</sup> IEEFA. [Submission for the Review of the National Hydrogen Strategy](#). Page 3.

<sup>24</sup> IEEFA. [Submission for the Review of the National Hydrogen Strategy](#). Page 3.

<sup>25</sup> Ibid. Page 3.





be produced via direct reduced iron (DRI) processes adjacent to the places where iron ore and renewable energy for producing green hydrogen are available.<sup>26</sup>

IEEFA cautions against funding under the Hydrogen Headstart program being directed toward projects that may ultimately not prove viable. At least two of the six projects under the funding shortlist announced in December 2023 focused on export markets.<sup>27</sup> Stanwell Corporation's 2.2-gigawatt Central Queensland Hydrogen Project is for green hydrogen exports to Japan, while the Port of Newcastle Green Hydrogen project, led by Macquarie Bank's Green Investment Group, is another export-orientated project.<sup>28,29</sup>

However, the potential for direct hydrogen exports has been questioned by many national and international experts due to hydrogen's physical properties.<sup>30</sup> Hydrogen is the lightest element and has a very low volumetric energy density compared with other sources of energy. This is problematic when it comes to transporting and storing hydrogen as its small molecules can leak easily, and transportation and storage pose a significant engineering challenge.

IEEFA conducted an analysis of the viability of the Victorian Hydrogen Energy Supply Chain (HESC) project, which relies on the gasification of Australia's brown coal resources into hydrogen for shipping to Japan. It found that: "The conversion process required for shipping is energy-intensive. HESC is proposing liquefaction, produced by cooling to -253 degrees [Celsius], and the process energy is equivalent to a loss of more than 30% of the energy content of the hydrogen, according to US Department of Energy."<sup>31</sup>

"Shipping from Victoria to Japan over a 9,000km, 21-day journey is challenging for hydrogen. Beyond the significant capital expenditure required for a large new-generation fleet, there are significant hydrogen losses en route. The hydrogen lost for boil-off and fuel use for propulsion for the 9,000km journey could be up to 40% of the cargo and boil-off could be as high as 9 times that of the equivalent loss experienced in LNG [Liquefied Natural Gas] shipping."

Of more than 25 export-oriented hydrogen projects being considered in Australia, at least 18 are considering converting hydrogen to ammonia for shipping. The International Energy Agency (IEA) has estimated that by 2030, the costs of shipping ammonia will be lower than shipping liquefied hydrogen at around US\$2.0-2.5/kg.<sup>32</sup> However, the cost of transforming the ammonia back into hydrogen will be prohibitively expensive in the coming decade.

The IEA reports that: "Ammonia cracking is currently carried out at high temperatures and is therefore highly energy-intensive, consuming roughly 30% of the fuel's energy content. Ammonia cracking at lower temperatures (less than 450°C) is less energy-intensive but involves the use of catalysts made with expensive precious metals. The use of low-temperature ammonia cracking

<sup>26</sup> IEEFA. [Submission for the Review of the National Hydrogen Strategy](#). Page 3.

<sup>27</sup> Renew Economy. [Six of 'world's largest' green hydrogen projects shortlisted for headstart funding](#). 20 December 2023.

<sup>28</sup> Stanwell. [CQ-H2: Central Queensland Renewable Hydrogen Project](#). Accessed 18 January 2024.

<sup>29</sup> ARENA. [The Port of Newcastle Hydrogen Hub Feasibility Study](#).

<sup>30</sup> Bloomberg NEF. [Liebreich: The Unbearable Lightness of Hydrogen](#). December 2022.

<sup>31</sup> IEEFA. [Hydrogen Energy Supply Chain project viability remains uncertain in wake of Hydrogen Headstart scheme for green hydrogen](#). 3 July 2023.

<sup>32</sup> IEA. [Energy Technology Perspectives 2023](#). January 2023. Page 321.



with no or limited use of such precious metals, which is not yet commercial, accelerates in the NZE [net zero emissions] Scenario after 2030.”<sup>33</sup>

In the near term, shipping ammonia would make sense when it can be used in ammonia form at the destination, rather than for conversion back to hydrogen.<sup>34</sup>

In terms of hydrogen use in residential settings, IEEFA analysis has found that electrification offers cheaper, easier decarbonisation than piping ‘renewable gas’ to homes. IEEFA research found that “there are serious technical constraints to relying on biomethane or hydrogen for household energy use; by contrast, electric appliances for cooking, space heating and water heating are mature and already widely used by many Australian households”.<sup>35</sup> Electricity is the clear fuel of choice for households due to its low cost. Alternatives such as biomethane and hydrogen are likely to result in higher costs for consumers. Governments should therefore focus their support on electrification rather than biomethane or hydrogen in households.

## Redirect funding from Beetaloo and Middle Arm gas ventures to gas demand reduction

IEEFA does not see a credible economic rationale for providing public funding for the development of the Beetaloo sub-basin or the Middle Arm precinct (which is centred around a proposed new liquefied natural gas (LNG) export facility). Moreover, IEEFA notes that development of a new LNG export facility would undermine the project’s stated objective of creating a “decarbonised economy”, given the Scope 3 emissions associated with gas when it is used by the consumer.<sup>36</sup>

In June 2023, IEEFA published a report on the proposed Middle Arm precinct, which highlighted many risks associated with both the Middle Arm precinct and extracting shale gas from the Beetaloo. Notably, the robust market for LNG exports anticipated in the plan is unlikely to materialise. LNG markets are going through an unprecedented change due to a coming wave of new LNG supply from low-cost suppliers, and Australia will be less able to compete on cost as its traditional customer base shrinks. This will undermine the financial success of the Beetaloo (and Barossa) gas investments.<sup>37</sup>

<sup>33</sup> IEA. [Energy Technology Perspectives 2023](#). January 2023. Page 319.

<sup>34</sup> IEEFA. [Submission for the Review of the National Hydrogen Strategy](#). Page 5.

<sup>35</sup> Ibid. Page 14.

<sup>36</sup> Catherine King, Minister for Infrastructure, Transport, Regional Development and Local Government. [\\$2.5 billion infrastructure boost for the Northern Territory](#). 16 October 2022.

<sup>37</sup> IEEFA. [Middle Arm Gas and Petrochemicals Hub: Combination of Problems Makes It Unprofitable for Business and a Red Flag to the Public](#). June 2023. Page 5.



Since IEEFA's report was published, several more reports on the LNG outlook have been published, including by the IEA<sup>38</sup>, Bernstein Research<sup>39</sup> and Wood Mackenzie<sup>40</sup>, all concluding with forecasts of a gas glut or a well-supplied market in the second half of the current decade.

The IEEFA report highlighted a further risk with the Middle Arm precinct: "Relying on carbon capture and sequestration (CCS) – a costly and unproven technology – to become a thriving industry and climate solution is unrealistic."<sup>41</sup> IEEFA has written many reports on CCS, and while it may have a role in capturing Scope Three emissions in hard-to-abate sectors such as cement production, we do not see a need for taxpayer funding to finance CCS facilities for oil and gas production, which only captures a small proportion of an oil and gas project's total emissions.<sup>42</sup>

Another risk the report highlighted was that: "Leading gas producers in the Northern Territory are financially unprepared to address the significant investments needed to explore, drill, distribute and support infrastructure to create a hub for LNG, agricultural and petrochemical development."<sup>43</sup> The most active explorer in the Beetaloo sub-basin is Tamboran Resources, which has no revenue from fossil fuel production and is reliant on funding from equity investors.<sup>44</sup>

IEEFA is of the view that more can be done on the demand side of the energy equation and that the issue should not just be looked at as a supply issue. IEEFA published a report last year that reached several conclusions, including that: "Bringing forward action to reduce gas use and improve energy efficiency and electrification in buildings by just two years to 2024 could eradicate the gas supply gap in the next decade and help alleviate the cost of living crisis."<sup>45</sup>

The report stated that to bring forward gas demand reductions, work should start on upgrading the energy efficiency of buildings in southern Australia and electrifying appliances. The solutions are all mature and are ready to be deployed, including improving building insulation and draught-proofing, right-sizing of equipment, shifting from gas heaters to electric heat pumps (or simply using existing split-system air conditioners for heating), and shifting from gas water heaters to solar or heat pump water heaters. These measures are particularly cost-effective to implement in new housing, yet currently new homes can still be built with gas appliances.

Those solutions can not only deliver reductions in gas consumption, but also reduce net energy bills for businesses and households. Upgrading low-income households first could help alleviate the cost-of-living crisis in the context of increasing energy prices.

<sup>38</sup> Reuters. [IEA says "unprecedented" supply surge could lead to LNG glut from 2025](#). 24 October 2023.

<sup>39</sup> Australian Financial Review. [Last of the good times in LNG as supply wave looms](#). 8 January 2024.

<sup>40</sup> Wood Mackenzie. [Global Gas and LNG: 5 things to look out for in 2024](#). December 2023. Page 4.

<sup>41</sup> IEEFA. [Middle Arm Gas and Petrochemicals Hub: Combination of Problems Makes It Unprofitable for Business and a Red Flag to the Public](#). June 2023. Page 5.

<sup>42</sup> IEEFA. [The carbon capture crux: Lessons learned](#). 1 September 2022.

<sup>43</sup> IEEFA. [Middle Arm Gas and Petrochemicals Hub: Combination of Problems Makes It Unprofitable for Business and a Red Flag to the Public](#). June 2023. Page 5.

<sup>44</sup> Michael West Media. [Gas fracker Tamboran grabs government cash, snubs Senate, scurries off to tax haven](#). 17 October 2023.

<sup>45</sup> IEEFA. [Australia can and should eradicate its gas supply gap – but not with more gas](#). 3 April 2023.



IEEFA would like to see some of the government funding – in areas such as hydrogen export projects, hydrogen blending in gas pipeline networks, as well as the federal finances earmarked for Middle Arm project and the Beetaloo sub-basin – redirected to initiatives to reduce gas demand, as highlighted in the preceding paragraphs.