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28 September 2023

To: Senate Standing Committee on Economics

Re: Senate inquiry on residential electrification

The Institute for Energy Economics and Financial Analysis (IEEFA) is grateful for the opportunity to be consulted on the upcoming Senate inquiry into residential electrification.

The following submission outlines our response to this inquiry, which addresses terms of reference (a), (b), (c), (d), (e), (f), (i), (j) and (k).

IEEFA is currently conducting research and analysis into issues impacting residential electrification in Australia. We welcome the opportunity to discuss any of the matters raised in this submission, or in our past and upcoming research.

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

Kind regards,

Jay Gordon – Research analyst, Australian electricity, IEEFA

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Key points

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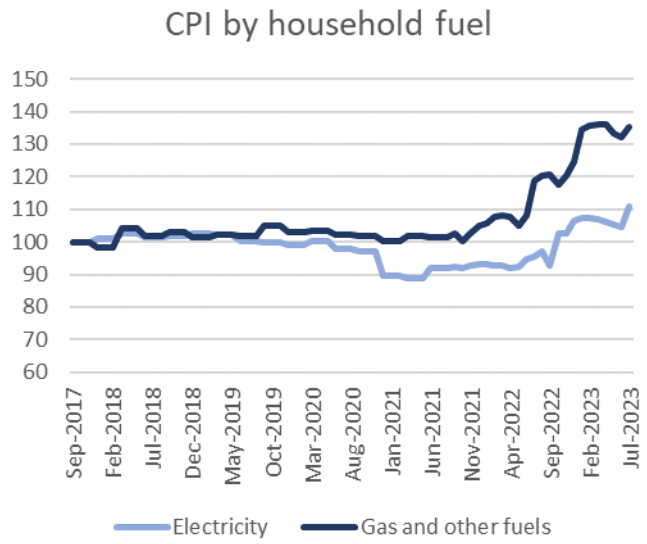
(a) The economic opportunities of household electrification, including but not limited to:
(i) Long-term reduction of energy price inflation

Gas-consuming households are more exposed to energy price inflation than all-electric homes

The consumer price index (CPI) for electricity as a household fuel has increased by 11% since September 2017, compared with a 35% increase for 'Gas and other fuels' (Figure 1).[1] This implies households that consume gas are more exposed to energy price inflation than if those loads were switched to electricity.

Increased penetration of renewable electricity in the National Electricity Market is already driving down the wholesale cost of electricity, as it has a very low marginal cost compared with existing fossil fuel generation.[2] Conversely, the marginal cost of domestic fossil gas production on Australia's east coast is expected to rise, and wholesale fossil gas prices have already become closely linked to global LNG prices.[3]

Figure 1: CPI of electricity compared with gas and other household fuels, 2017-23



Source: Australian Bureau of Statistics

[1] Australian Bureau of Statistics. 6484.0 Monthly Consumer Price Index indicator. July 2023.
[2] Australian Energy Market Operator. Renewables drive lower prices, record low emissions. April 2023.
[3] Reserve Bank of Australia. Understanding the East Coast Gas Market. Bulletin – March 2021. Pages 85-6.

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(b) the macro-barriers to increasing the uptake of home electrification

'Renewable gas' campaigns counteract electrification efforts, and pose risks to consumers

Several gas distribution networks are running campaigns that present hydrogen and/or biomethane ("renewable gas") as likely alternatives to household electrification.

A recent IEEFA report[4] examined these campaigns in detail and found:

- They do not acknowledge that the majority of evidence suggests electrification is much more cost-effective for the majority of consumers;
- Biomethane feedstock in Victoria is far too low to replace its current residential fossil gas load, and not easily accessible to its gas transmission network;
- Introducing high blends of hydrogen would be highly costly and logistically infeasible, and;
- Gas distribution networks in Victoria have acknowledged to the regulator that electrification is a more likely future for homes.

These activities represent significant risks to consumers, who may be locking in unnecessarily high lifetime running costs for gas appliances.

Governments and regulators have a role to ensure consumers have access to objective information on the merits of electric appliances compared with gas appliances, rather than relying on advice from businesses that may have a commercial interest in maintaining utilisation of their networks.

The upfront cost of electrification is a barrier for many households

IEEFA modelling suggests that the upfront cost for a representative household to choose all-electric appliances may be $2,300 more than choosing equivalent gas appliances.[5]

The lower running cost of appliances generally offsets the upfront cost in the long term. However, a high upfront cost still presents a barrier for many households.

Policies could assist in lowering this barrier; for example, by providing alternative financing solutions or direct rebates. In our response to term of reference (i), IEEFA notes the potential to learn from existing state and federal programs in designing appropriate policy solutions.

As one example, IEEFA estimates that the current rebates offered through the Victorian Energy Upgrades (VEU) program could reduce the upfront cost of full household electrification by $3,500, making electric appliances cheaper overall than gas appliances in some cases.

[4] IEEFA. 'Renewable gas' campaigns leave Victorian gas distribution networks and consumers at risk. 17 August 2023.
[5] Based on comparison of average market prices of gas ducted heating systems, gas continuous flow hot water systems and gas cooktops, compared to multiple reverse-cycle air conditioners, a heat pump hot water system and an induction cooktop. Gas connection abolishment costs are included.

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Network 'exit fees' create a barrier for electrification

Some gas distribution networks charge high fees to permanently abolish gas connections, in extreme cases up to $2,500.[6] This presents a significant barrier for consumers to electrify.

The high cost of abolishment may encourage customers to "quietly" disconnect from the network, by cancelling their retail plan while the physical connection remains active. This poses a safety hazard, as gas is still present in the service line and may escape or enter the property, particularly if there is damage or degradation to the infrastructure.[7]

The Australian Energy Regulator (AER) recently capped abolishment fees at $220 in Victoria (with an additional $602-$730 per abolishment socialised across all users of the gas network).[8]

This presents one model of allowing connections to be safely abolished while reducing the financial barrier to electrify, which could be replicated in other states. However:

- These costs must be interrogated more thoroughly to ensure they reflect the real costs of removing physical gas infrastructure, and are not used to recoup future lost revenue;
- A $220 fee still represents an upfront cost barrier for some households. Alternative approaches should be considered, including full socialisation of abolishment fees, or subsidisation that leads to zero upfront costs for consumers leaving the network, and;
- An equivalent decision point for other states' Access Arrangements will not be due until 2025 and 2026. More short-term action is needed to regulate these fees.

Electricity networks are unlikely to present a major barrier to electrification

A small number of studies have suggested that residential electrification at scale would lead to costly impacts on electricity distribution networks.[9] However, these are likely overstated.

The state with the largest residential gas load to electrify is Victoria, where 75% of residential gas is used for heating – with a large amount of gas load occurring in winter.[10]

Figure 2 shows the operational peak electricity demand in Victoria for summer compared with winter. It demonstrates:

- Victoria's operational electricity demand peak is higher in summer than winter;
- Peak operational demand in summer has trended downwards since its record high in 2009 (attributed to greater uptake of distributed energy resources),[11] and;
- Record peak winter demand is around 20% lower than record peak summer demand

[6] One Step off the Grid. Ombudsman backs customer told it would cost $2,500 to cut gas connection. 20 May 2021.
[7] Victorian Energy Safety Commission. RE: Abolishment of Gas Connection due to Electrification. Letter to the Australian Energy Regulator. 18 April 2023.
[8] AER. Final decision: Multinet Gas Networks, Australian Gas Networks (Victoria & Albury) and AusNet Gas Services Gas distribution access arrangement 2023 to 2028. Attachment 6 – Operating Expenditure. Page 6. June 2023.
[9] For example, Frontier Economics. The Benefits of Gas Infrastructure to Decarbonise Australia: A Report for the Australian Gas Industry. Page 5. 17 September 2020.
[10] EnergyConsult. 2021 Residential Baseline Study for Australia and New Zealand for 2000 – 2040. 11 November 2022.
[11] AEMO. Victorian Annual Planning Report. Page 27. October 2022.

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Figure 2: Peak summer operational demand in Victoria is higher than peak winter demand

Source: AEMO

This implies considerable headroom to electrify Victoria's winter loads before peak demand would exceed historic highs. Growth in winter peak demand can also be slowed if electrification is combined with energy efficiency improvements and greater uptake of distributed energy resources.

Furthermore, national data from the AER suggests that distribution networks are a long way from exceeding their capacity. Overall distribution network utilisation, defined as maximum demand divided by capacity, is currently only 42%, with utilisation of individual networks varying from as low as 18% (Essential Energy, NSW) to no more than 71% (Powercor, Vic).[12]

Furthermore, recent modelling by CSIRO for Energy Consumers Australia examined delivered electricity prices if uptake of electric appliances, electric vehicles and home storage were aligned to AEMO's most likely *Step Change* scenario. They found the growth in volume of electricity sold would be more significant than growth in peak demand, leading to increased utilisation of distribution networks and lower prices.[13]

Governments should support the development of a strong workforce and supply chain for electrification

Under any technological transition, it is expected that workforces and supply chains will also need to adapt.

For household electrification, short-term challenges may arise as the trades required to install new appliances changes,[14] and as domestic or international manufacturing needs to ramp up.[15]

[12] AER. Electricity network performance report 2023. Page 26. 7 July 2023, and Electricity DNSP Operational performance data 2006-22.
[13] CSIRO and Dynamic Analysis. Consumer impacts of the energy transition: modelling report. Page v. July 2023.
[14] For example, electricians rather than gasfitters.
[15] For example, Daikin planned to triple its European heat pump manufacturing capacity from 2022-25. (Climate Control News 2022).

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Several organisations are working to understand these constraints, and map solutions. This includes the Energy Efficiency Council[16] and Race for 2030.[17]

Governments should pay close attention to the findings of these initiatives, as they are likely to play a key role in enabling a transition to efficient electric households.

(c) the total upfront cost and longer-term benefits of household electrification and alternative models for funding and implementation

Transitioning to all-electric homes will reduce energy bills

IEEFA has modelled the costs of electrifying an average Victorian household. Victoria consumes more residential gas than any other jurisdiction, offering a useful case study for the rest of Australia.

The upfront cost for an average Victorian household to electrify space heating, water heating and cooking is currently $11,300 before government rebates.[18]

However, when comparing the relative costs of gas and electric appliances, such as when a gas appliance is retired, electrifying would cost $2,300 more than installing new gas appliances.[19]

Modern electric appliances are cheaper to run than gas appliances. We estimate that an average Victorian home could save $750 to $1,000 a year on their energy bills by switching to efficient electric appliances, with a payback of nine years (or three years when comparing relative costs against new gas appliances).[20]

Similar analyses exist for other jurisdictions,[21] and generally find that electrification is net present value (NPV)-positive in most households, but payback periods are most attractive when electrifying at gas appliances' natural end of life. In some cases, end-of-life electrification is cheaper than purchasing all new gas appliances.

[16] Energy Efficiency Council. Residential Energy Upgrades Workforce Mapping Project. 2023.
[17] Race for 2030. Energy Upgrades for Australian Homes. 2023.
[18] Based on IEEFA analysis of average market and installation costs of one 7-8 kW reverse-cycle air conditioner, two 3-4 kW reverse-cycle air conditioners, one heat pump hot water system, one induction cooktop and a $220 connection abolishment fee.
[19] Based on IEEFA analysis comparing the above with average market and installation costs of one new gas ducted heating system, one gas continuous flow water heater and one gas cooktop.
[20] Based on IEEFA analysis considering the average energy consumption per gas appliance from EnergyConsult (2022), the relative efficiency of electric alternatives, and a range of electricity and gas retail offers in Victoria as at August 2023.
[21] See Grattan Institute. Getting off Gas: why, how, and who should pay? June 2023; GHD for DELWP. All-Electric New Homes Cost Assessment. April 2022; Climate Council. Switch and Save: How Gas is Costing Households. October 2022. Alternative Technology Australia (Renew); Household fuel choice in the National Energy Market. July 2018.

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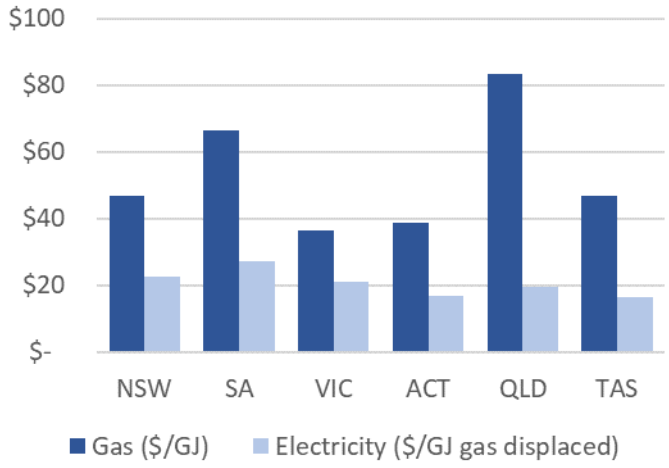
This is driven by the high efficiency of modern electric appliances. Heat pumps for space or water heating can achieve a coefficient of performance of 300%-400% – several times higher than an average efficiency of 60-86% for gas space or water heaters.[22]

Figure 3 compares effective energy prices once efficiencies are considered. Under current prices, using electricity is 43-77% cheaper than gas in Australian states and territories.

For rental providers, electrification can avoid the need to conduct gas safety inspections, which may cost over $250[23] and are required every two years under Victorian law.[24]

Figure 3: Gas price vs electricity (for running efficient appliances) in the NEM



Source: St Vincent de Paul Tariff Tracking reports, July 2022 (ACT, QLD, TAS) and July 2023 (NSW, SA, VIC)

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

Several trends may drive further improvements in the economics of electrification:

- Wind and solar are setting the wholesale electricity price a greater proportion of the time;[25]
- Victoria's conventional low-cost source of gas, the Gippsland Basin, is in decline;[26]
- Further price reductions in efficient electric appliances are expected. For example, a study in the United States found installed heat pump hot water costs could reduce by up to 26% between 2020 and 2030,[27] and;
- Electric appliances have capacity to contribute to electricity grid services – for example through load shifting, storage or frequency support. If coordinated well, this could lower overall electricity system costs, and regulations could be designed to compensate consumers for providing these services.

[22] From upcoming IEEFA analysis drawing on ATA (Renew). Household fuel choice in the National Energy Market. July 2018, and BZE. Energy Efficient Buildings Plan. August 2013.
[23] For example, see Detector Inspector, Epic Inspections and Static Blue.
[24] Energy Safe Victoria. Residential tenancy information for gasfitters. February 2023.
[25] AEMO. Quarterly Energy Dynamics Q2 2023. Page 14.
[26] Ibid. Page 47.
[27] National Renewable Energy Laboratory. Electrification Futures Study: End-use Electric Technology Cost and Performance Projections through to 2050. Page 44. 2017, and accompanying data file.

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(d) the marginal cost of abatement for household electrification compared to alternative sectors and options to decarbonise the economy;

Residential electrification is one of the most cost-effective decarbonisation options

Households are responsible for 11% of fossil gas use in Australia, with the balance used in industry, power generation and other sectors.[28]

Options to decarbonise fossil gas use in other sectors vary in cost and maturity. However, by comparison electric household appliances are already mature and cost-effective technologies.

Given the readiness and cost-effectiveness of electric appliances, and the potential need to reserve fossil gas for hard-to-abate end uses, decarbonising residential fossil gas as early as possible makes economic sense.

Conventional marginal abatement cost curves typically show residential electrification as one of the lowest-cost (often negative-cost) decarbonisation options.[29]

However, analysts are increasingly moving towards more sophisticated models that consider interactions between different decarbonisation options. These models also frequently find that residential electrification is one of the lowest-cost decarbonisation options, especially given that:[30]

- The marginal cost of abatement for electrification decreases as the emissions intensity of the electricity supply decreases, and;
- Increased household energy efficiency measures are also likely to reduce the required investment in electrification.

(e) the optimal timeline for household electrification accounting for the likely timing of decarbonising electricity;

Residential electrification is economical today, and delays would lock in higher costs for consumers

Household electrification is already an NPV-positive decision in most scenarios, whether opting to electrify prematurely or at the end of life of existing appliances.[31]

[28] DCCEEW. Australian Energy Update 2022: Table F. September 2022.
[29] ClimateWorks Australia. Low carbon growth plan for Australia. Page 96. March 2010.
[30] For example, CSIRO and Climateworks Centre. Multi-sector energy modelling 2022. December 2022; EEC and ANZ. Putting Energy Efficiency to Work. 2023; DEECA. Gas Substitution Roadmap. 2022.
[31] IEEFA modelling confirms this for an average Victorian household. ATA (Renew) (2018) found this was true for all jurisdictions except select cases in a few cities. Grattan Institute (2023) found this was true across all jurisdictions when space heating was included.

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Conversely, households that continue to invest in gas appliances today risk being locked into high energy costs, and purchasing assets that may become stranded if policies shift to encourage electrification. These consumers are also exposed to future rises in retail gas prices, which could occur if other households transition to electricity in large numbers, triggering a utility "death spiral".[32] Gas appliances are often expected to operate for more than 20 years.[33]

IEEFA estimates Australians spend about $1.8 billion a year on gas appliances, with a total lifetime running cost for those appliances of $5.8 billion. This adds up to $7.6 billion in total lifetime costs, which compares with an estimated $6.0 billion in lifetime costs for comparable alternative electric appliances.[34]

This implies that for each year that a transition to electrification is delayed, consumers may be locking in up to an additional $1.6 billion in avoidable lifetime costs from gas appliances.

The lifetime emissions of electric appliances are far lower than gas appliances

In many cases, electrifying a household today will lead to immediate avoided emissions. For example, a home with a gas ducted heating system, gas instantaneous hot water system and gas cooktop emits approximately 3.6 tonnes of carbon dioxide equivalent (CO_2-e) a year from burning fossil gas. If the same amount of useful energy were delivered by reverse-cycle air conditioners, a heat pump hot water system and induction cooktop, this would convert to 2.2 tonnes CO_2-e/pa based on Australia's current average electricity emissions intensity.[35]

However, an accurate comparison of the emissions impact of gas versus electric appliances ought to consider the lifetime energy consumption of both appliances, and associated emissions given likely changes to the emissions intensity of electricity production. Considering this, IEEFA analysis finds that the lifetime emissions for gas cooktops, heating systems and hot water systems are up to 4.9 times that of their efficient electric counterparts (Figure 4).

This implies that electrifying a representative household today will lead to immediate emissions reductions under the current emissions intensity of Australia's electricity grid, and that these reductions will accelerate under future decarbonisation of electricity.

Conversely, if household electrification were delayed and consumers continue to purchase more gas appliances, this is likely to lock in high emissions over the lifetime of those appliances.

[32] See Grattan Institute. Getting off Gas: Why, how and who should pay? Page 43. June 2023.
[33] EnergyConsult. Product profile: Gas ducted heaters. Page 17. January 2011.
[34] Draws on upcoming IEEFA analysis. Based on extrapolation of sales trajectories underlying EnergyConsult (2015), analysis of average market purchase and installation costs of appliances, appliance energy consumption from EnergyConsult (2021) and current retail energy prices in NEM states from the St Vincent de Paul Society (2022/2023). Electric appliances are assumed to deliver the same useful energy as gas counterparts, but efficiency differences are included. Where electric appliances have lower assumed lifetimes than gas appliances, adjustments have been made to compare costs over the equivalent lifetime of gas appliances.
[35] Based on IEEFA analysis, assuming 65GJ/year fossil gas consumption with an emissions intensity of 55.53kg CO_2-e/GJ (Scope 1 + Victorian Scope 3 from NGAF 2023, Pages 16-17), converting to 2.96MWh/year electricity with an emissions intensity of 0.73kg CO_2-e/kWh (Scope 2 + 3 from NGAF 2023, Page 8).

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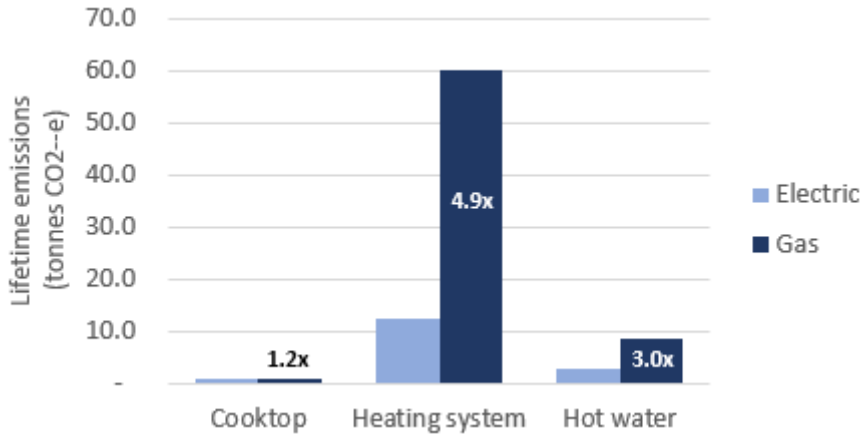
Figure 4: Lifetime emissions of gas appliances are much higher than electric appliances.



Note: Based on assumed annual energy consumption from EnergyConsult (2021), emissions intensity of gas from NGAF (2022) and emissions intensity of electricity based on NGAF (2023) declining in line with the federal government's target of 82% renewable energy by 2030.

Acting now to accelerate electrification could avoid the need to develop new gas supply

IEEFA research showed that accelerating gas efficiency and electrification measures in buildings could eradicate the gas supply for the next decade.[36]

AEMO's 2023 Gas Statement of Opportunities (GSOO) found that southern Australia was at a high risk of long-term gas supply gaps.[37] IEEFA's analysis found:

"While the *Green Energy Exports (1.5°C)* scenario achieves an 83% reduction in gas consumption by 2042, it does not see any reduction happening before 2026. Bringing forward the gas demand reductions by just two years to start in 2024 instead of 2026 would eradicate the gas supply gaps for the next decade. […]

"Eradicating the gap supply gap would avoid tapping into highly emissions intensive and costly new gas fields."

[36] IEEFA. Australia can and should eradicate its gas supply gap – but not with more gas. April 2023.
[37] AEMO. Gas statement of opportunities. March 2023. Page 4.

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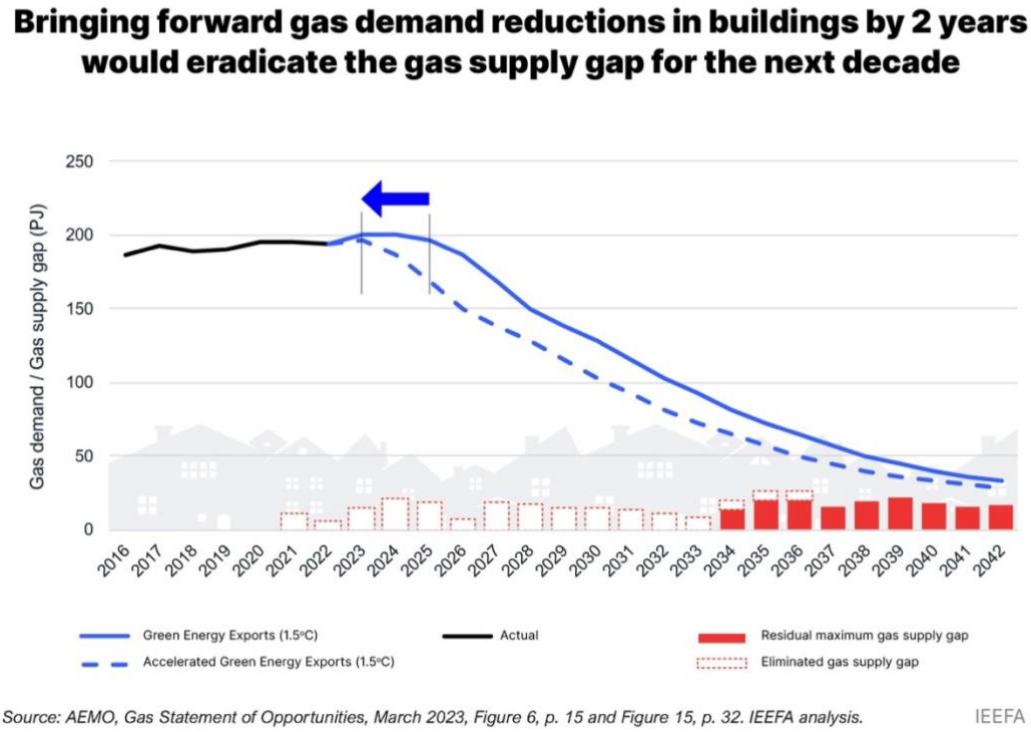
Figure 2: Impact of Bringing Forward Gas Demand Reductions in Buildings by 2 Years on Gas Consumption and Gas Supply Gap (PJ)



Source: AEMO, Gas Statement of Opportunities, March 2023, Figure 6, p. 15 and Figure 15, p. 32. IEEFA analysis. IEEFA

(f) the impacts and opportunities of household electrification for domestic energy security, household energy independence and for balance of international trade

(j) Australia's current standing against international standards, particularly with respect to the uptake of rooftop solar, batteries and electric household appliances

Distributed energy resources offer significant opportunities alongside electrification

Australia is a global leader in the uptake of rooftop solar, and is well placed to capitalise on the economic benefits of well-orchestrated distributed energy resources (DER) when combined with household electrification.

Recent IEEFA analysis looked at the potential benefits from achieving high DER uptake in a representative suburb, and found that with the right regulation, high rooftop solar and storage uptake could lower electricity costs for all consumers, by lowering or eliminating the evening

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peak in demand, and by reducing network peaks which therefore reduce network capacity requirements.[38]

The analysis found that high penetration of rooftop solar could reduce average summer network peaks by 28%, moving it 2.5 hours later in the day. With high uptake of household batteries and "frictionless" energy trading, the reduction could increase to 64%.

This holds two implications for household electrification:

- Households that electrify their loads have a greater ability to capitalise on DER, increasing their energy independence, and;
- Smart deployment and orchestration of DER can take pressure off distribution networks, allowing for larger electrified loads to be supported before network capacity increases are necessary.

(i) the effectiveness of existing Australian Federal, state and local government initiatives to promote and provide market incentives for household electrification;

Australian jurisdictions are taking early steps to encourage electrification uptake, but more work is needed

A patchwork of policies exists across Australian federal, state and territory government to encourage electrification uptake. These policies are imbalanced across states, and do not reach all Australians.

The federal Small-scale Renewable Energy Scheme (SRES) has provided rebates that encourage the installation of efficient heat pump hot water systems. However, these incentives decline each year and will be phased out by 2030.[39]

The Victorian government's longstanding VEU program was updated in 2023 to remove legacy incentives for the installation of gas appliances, and add new incentives for converting gas to electric appliances.[40]

The size of these incentives is enough to materially impact the home economics of electrification. For example, IEEFA estimates that an average Victorian household converting from a gas ducted heating system to multiple reverse-cycle air conditioners may be eligible for up to 32 VEECs, reducing the upfront cost of a premature replacement from approximately $6,260 to $3,890.[41]

[38] IEEFA. Saturation DER modelling shows distributed energy and storage could lower costs for all consumers if we get the regulation right. April 2023.
[39] Clean Energy Regulator. Small-scale Renewable Energy Scheme. June 2023.
[40] Victorian Department of Energy, Environment and Climate Action. Electrification and home energy rating assessment updates. May 2023.
[41] Based on Essential Services Commission – VEEC Calculator, and Assuming a price of $74/certificate (Green Energy Markets as at September 2023)

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In some cases, government incentives for electric appliances are being partially offset by private incentives offered by gas distribution networks to purchase new gas appliances.[42] These rebates present a risk to consumers; they make the upfront costs of investing in new gas appliances more attractive, but will not mitigate the high future running costs of those appliances. Governments and regulators should consider how they can prevent policies to incentivise electrification from being undermined by private initiatives.

Governments should improve the quality and accessibility of information regarding the useful lifetime of gas appliances.

For example, Australian Taxation Office guidelines currently list an asset lifetime of 20 years for gas ducted heaters,[43] implying that a unit purchased today is expected to still be in full operation in 2043. This lifetime would appear inconsistent with a target of net zero emissions in 2045, such as in Victoria which has the largest use of gas ducted heaters.

Disclaimers on the updated useful life of assets could be provided to consumers at the point of sale of new gas appliances, ensuring customers understand that the equipment will likely need to be retired before its usual full technical life.

(k) any other matters.

Electrification should be accompanied by other home energy efficiency improvements

Australian homes built before 2003 have an average Nationwide House Energy Rating (NatHERS) of 1.8 stars out of 10, meaning that the majority of Australians are spending more than necessary to heat their homes, whether by gas or electricity.[44]

Efficient electric appliances are already often five or more times more efficient than equivalent gas appliances. However, improving the thermal efficiency of a home while upgrading its appliances can magnify this benefit, leading to very significant reductions in home energy bills.

Recent analysis by CSIRO found that households that took up energy efficiency savings assumed to be available in AEMO's central *Step Change* scenario could save up to $530 a year, on top of savings from switching to electric appliances.[45]

[42] For example, Jemena. Go Natural Gas: Cash back offers, accessed 11 September 2023; Australian Gas Networks. Rebates, accessed 11 September 2023.
[43] Australian Taxation Office. Taxation Ruling: TR 2022/1. Income tax: effective life of depreciating assets. Rental, hiring and real estate services – (66110 to 67200).
[44] CSIRO. It's in the stars! How scientists figure out your home's energy rating. September 2021.
[45] CSIRO and Dynamic Analysis. Consumer impacts of the energy transition: modelling report. Page 27.

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Governments must plan to wind down gas infrastructure

Australian states and territories have extensive gas distribution networks that exist to serve predominantly residential customers. In Victoria, for example, 93% of gas distribution network revenue is recovered from residential customers.[46]

Networks face likely volume reductions even under current policies; Victoria's gas distribution networks forecast a 15-19% decline in residential gas volumes over the next five years.[47]

The networks have signalled that they see electrification as the most likely future for homes. Victoria's gas distribution networks requested to bring forward $461 million in accelerated cost recovery in Victoria to manage their asset stranding risks, and the Australian Gas Infrastructure Group argued the life of its new Dampier to Bunbury transmission pipeline in Western Australia would be less than that of a conventional new pipeline due to asset-stranding risks.[48]

Continued reductions in volume while the customer base shrinks could lead to a situation where networks struggle to recover the costs of their asset base, which is unlikely to reduce in line with customer numbers. The AER may be required to decide between allowing networks to pass on very high cost increases to a shrinking cohort of consumers, or preventing networks from fully recovering their costs.

There is a risk that price rises could disproportionately impact renters and low-income households, who have less ability to switch to electric appliances.

No long-term plans are in place for who will pay for the retirement of networks. Interim measures have transferred greater risks onto consumers via accelerated depreciation and abolishment fees. However, as the AER has acknowledged: "Further work is required across the sector to develop a more sustainable solution."[49]

This problem is made worse if networks continue to expand, growing their regulated asset base, adding to the costs to be recovered from consumers. The ACT and Victorian governments recognise this, and have already moved to prevent new homes connecting to the gas network from 2025 and 2024 respectively.[50]

Policies to prevent gas networks from being expanded to reach new homes are in the economic interest of consumers and governments in all jurisdictions. However, this is only a first step, with a more co-ordinated plan needed to manage the overall phase-down of networks in line with the uptake of electrification.

[46] AER. Gas Network Performance Report 2022. December 2022. Page 107.
[47] AER. Final decision: Multinet Gas Networks, Australian Gas Networks (Victoria & Albury) and AusNet Gas Services. Gas distribution access arrangement 2023 to 2028. June 2023. Attachment 12 – Demand. Page 4.
[48] IEEFA. 'Renewable gas' campaigns leave Victorian gas distribution networks and consumers at risk. August 2023. Page 22.
[49] AER. AER decision supports Victorian gas consumers in energy transition. June 2023.
[50] Shane Rattenbury MLA. ACT reaches milestone preventing new fossil fuel gas connections. June 2023; and Lily D'Ambrosio MP. New Victorian Homes to go All Electric from 2024. July 2023.