



28 February 2025

To: Victorian Department of Planning
Re: Building Electrification – Regulatory Impact Statement

Thank you for the opportunity to provide feedback on the Victorian Department of Planning's Building Electrification – Regulatory Impact Statement (RIS).

Victoria faces an energy security and cost dilemma, driven by high levels of fossil gas consumption and the depletion of low-sources of gas in Bass Strait. Meanwhile, the increased availability of highly efficient electric appliances has led to household electrification emerging as the least-cost way to meet the energy needs of the majority of Victorian homes.

Based on our prior independent analysis, IEEFA considers that the proposed electrification measures in this RIS are sensible and necessary to address Victoria's energy challenges. They are also a minimum action that will be required to align residential greenhouse gas emissions to Victoria's economy-wide emission reduction targets.

We support the Victorian government's preferred Option 3, to electrify all new and existing residential buildings (excluding cooking), and all new commercial buildings.

Research by IEEFA and others has shown a risk of a 'gas death spiral' effect as gas distribution networks seek to recover their fixed costs while demand for their services drop. To avoid this leading to inequitable and cost-inefficient outcomes for Victorians, IEEFA also recommends:

- The Victorian government gives strong consideration to Option 4 of the RIS, which includes electrification of gas cooktops in existing buildings; and
- The Victorian government initiates a plan for how to efficiently and equitably decommission its gas distribution networks.

We also acknowledge that further work will be necessary to extend the benefits of electrification to commercial buildings.

Our full response is detailed in the following pages. Please do not hesitate to contact me to discuss any aspects of our submission further.

Kind regards,

Jay Gordon, Energy Finance Analyst, Australian Electricity, IEEFA



Victoria’s proposed electrification measures are sensible and necessary

Electrification will reduce gas supply gaps

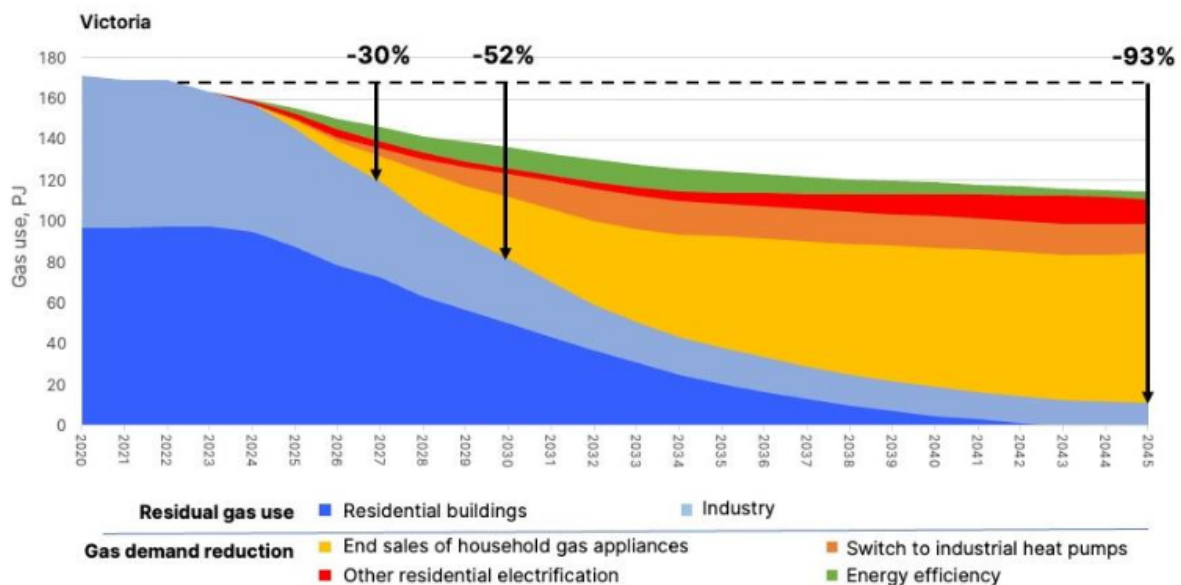
Victoria faces imminent energy security challenges. Under extreme peak conditions, fossil gas demand could exceed available supply levels as soon as this year¹, and supply gaps could occur at an annual scale as soon as 2027².

A limited number of solutions exist to address this supply gap – focused either on increasing the supply of gas, or on reducing demand for gas.

Increasing the supply of gas will most likely increase costs for energy consumers, because it is highly unlikely that imported gas, or speculative domestic gas resources, could match the low production prices of Victoria’s near-exhausted Bass Strait reserves.³ Conversely, reducing gas demand via electrification is highly cost-effective for consumers.

IEEFA’s research found that transitioning gas appliances to electric alternatives at their end of life was the most significant measure that could bridge the gap between gas supply and demand.⁴

Figure 1: Cost-effective gas demand reduction opportunities for Victoria



Source: IEEFA.⁵ Note: ‘End sales of household gas appliances’ refers to prior modelling undertaken by IEEFA that has not been updated to reflect the specific policy proposal in this RIS.

¹ AEMO. [Gas Statement of Opportunities](#). March 2024. Page 62.

² ACCC. [Gas Inquiry 2017-2030: Interim update on east coast gas market](#). December 2024. Page 92.

³ IEEFA. [Reducing demand – A better way to bridge the gas supply gap](#). 16 November 2023. Page 23

⁴ Ibid. Page 6.

⁵ Ibid. Page 6.



There is a strong case for introducing new electrification regulations as soon as practical, as this will reduce the need for any costly short-term measures to bridge gas supply and demand until the effects of electrification regulations become more prominent.

Electrification will reduce energy bills

Household electrification generally results in significant energy bill reductions, driven by:

- The high energy efficiency gains from switching from gas appliances to heat pump-based electric appliances; and
- The fact that gas prices have risen faster than electricity prices in recent years.

Our independent analysis found that a typical Victorian household could reduce its energy bills by \$1,200 by switching a common configuration of gas appliances (space heating, hot water and cooking) to efficient electric alternatives.⁶ This finding is comparable to the results of analysis by other organisations, including analysis published by the Victorian government.⁷

Switching to electric appliances usually incurs higher upfront costs than installing a like-for-like gas appliance replacement. However, in most cases, the energy bill savings from electrification will outweigh the additional capital investments, with estimated payback periods of nine years for premature replacement of all appliances, or two years for end-of-life replacement of all appliances, relevant to this RIS.⁸

Electrification will reduce emissions

Victoria has committed to reach net zero emissions by 2045, and has set commensurate interim emission reduction targets.

Residential electrification is broadly considered to be one of the most cost-effective emission reduction measures. Most whole-of-economy modelling finds that an optimal emission reduction pathway involves the residential sector decarbonising at a faster rate than other sectors.⁹

IEEFA has previously modelled the emission reduction potential of a pathway where no new residential gas appliances were installed from 2025. This saw residential emissions decline at a rate close to Victoria's whole-of-economy emissions targets.¹⁰

Conversely, if gas appliance installations were not phased out in Victoria, residential emissions would almost certainly exceed their economically optimal share of Victoria's emission reduction task.

⁶ IEEFA. [Managing the transition to all-electric homes](#). 2 November 2023. Page 15.

⁷ For example [Grattan Institute](#) (page 57) found a Melbourne home with three common gas appliances would save \$1,255 in running costs from going all-electric, and [Victorian Government fact sheets](#) note electrification leads to bill savings of \$1,405 (excluding impacts of rooftop solar).

⁸ IEEFA. [Managing the transition to all-electric homes – technical appendices](#). 2 November 2023. Page 26.

⁹ For example, see Climateworks Centre. [Climateworks Centre decarbonisation scenarios 2023](#). November 2023.

¹⁰ IEEFA. [Managing the transition to all-electric homes](#). 2 November 2023. Page 13.



The emission savings of electrification could be further accelerated if:

- The pace of decarbonisation in Victoria's electricity system accelerates; and/or
- Electrification is flexible¹¹, and coupled with the installation of rooftop solar and residential batteries.

A regulatory approach is appropriate to address electrification barriers

The regulations proposed in this RIS would supplement other electrification measures already implemented under Victoria's Gas Substitution Roadmap. This includes the addition of electrification activities to the Victorian Energy Upgrades (VEU) program.

A mix of market-based, financial and regulatory solutions is necessary to support electrification uptake at the pace required, as many households face significant barriers to electrification that cannot be solved by a market-based approach alone. This includes:

- The 'split incentive' problem where tenants have no practical ability to switch fixed appliances, and rental providers have no incentive to electrify; and
- Information asymmetries where consumers cannot always access unbiased information on the benefits of electrification.

These barriers are likely to result in many households continuing to install gas appliances when their existing appliances wear out. This would result in significant unnecessary cost lock-in for those consumers, and at a macro level, would result in locking-out of gas-reduction and emission-saving opportunities for Victoria.

Additional supports should accompany these regulations

While IEEFA considers the Victorian government's preferred electrification option will help initiate a managed transition away from residential gas consumption, there are additional measures we would suggest to ensure this transition is as smooth as possible.

Ensure new appliances are efficient

There are no controls in the proposed regulations that would require electric appliances that replace gas appliances to be highly efficient.

Resistive element-based electric appliances typically consume three to four times as much electricity as heat pump-based appliances, which could negate the energy bill savings of electrification, and lead to faster growth in winter peak electricity demand.¹²

¹¹ IEEFA. [Fast, efficient, flexible electrification can cut energy bills and support the shift to renewables](#). 6 March 2024.

¹² IEEFA. [Appliance standards are key to driving the transition to efficient electric homes](#). 23 April 2024. Page 2.



Although it is likely that existing incentives available under the VEU and Solar Victoria programs will encourage many households to adopt efficient electric appliances, there is still a risk that some households are influenced to install inefficient electric appliances due to their low upfront costs.

The Victorian government should consider requiring that new appliances installed are as efficient as possible. This could include advocating for improved minimum energy performance standards and energy labelling under the federal Greenhouse and Energy Minimum Standards (GEMS) Act.

Ensure new appliances are flexible

IEEFA's research has identified the benefits of ensuring that household appliances can operate as flexible sources of demand.¹³ This is particularly true for electric hot water systems and reverse-cycle air conditioners, which could see a significant rise in installations following the implementation of these regulations.

The cost to ensure these appliances are equipped with flexible demand potential is generally low, and many manufacturers already include active or passive flexibility controls as standard.

Solar Victoria already requires hot water systems to be equipped with timer controls as a minimum to be eligible for rebates.¹⁴ The Victorian government should carry forward similar requirements for appliances installed under the VEU scheme, including appropriate capabilities for air conditioners.

Plan to phase out gas cooktops

Gas cooktops are excluded from the Victorian government's preferred approach in Option 3. While we acknowledge that cooktops can carry unique challenges to electrify, we also consider that including cooktops in electrification measures, for instance as in Option 4, would be in the interests of Victorian consumers.

Gas distribution networks recover the (largely fixed) costs of their network via both daily and per-megajoule charges that are passed on to consumers.¹⁵ Therefore, if the number of gas connections and/or volumes of gas delivered by networks decreases, tariffs would need to rise to compensate.

The volume of gas consumed by cooktops is very low when compared with other appliances. If in the long term, space heating and hot water loads are largely electrified, this could leave networks recovering their costs predominantly from users of gas cooktops, which would necessitate a significant increase in either fixed or per-gigajoule charges. In other words, it does not mitigate the potential for a 'gas death spiral' effect to occur.

¹³ IEEFA. [Australia needs more efficient, smarter hot water systems](#). 21 August 2024; IEEFA. [Smart air conditioners could reduce energy bills for consumers](#). 22 October 2024.

¹⁴ Solar Victoria. [Notice to Market 2024-25](#). May 2024. Page 7.

¹⁵ For example, [models published by Multinet Gas Networks](#) indicate that around 75% of residential network costs are allocated to volumetric charges, and 25% to fixed charges.



There is a potential for this problem to resolve itself for owner-occupier dwellings, as such an increase in gas charges would make the financial case to switch to an electric induction cooktop highly compelling. However, it raises equity concerns for renters, who have no ability to respond to price signals and upgrade to an electric cooktop.

IEEFA recommends the Victorian government give consideration to Option 4 in the RIS, or as a minimum, include the requirement to replace retired gas cooktops with an efficient electric alternative as part of the rental minimum standards reforms that are under consideration in parallel with this RIS.¹⁶

Plan to phase down gas distribution networks

Any necessary phase-down of residential gas consumption in Victoria will significantly challenge the business model of gas distribution networks, who recover 93% of their revenue from residential customers.¹⁷

IEEFA modelling found that a phase-out of gas appliances in Victoria would eventually lead to a situation where remaining consumers are expected to bear significant cost increases, or gas networks would be exposed to significant unrecovered costs. In either case, the consumer savings from electrification were significant enough to justify a managed approach to phasing down gas networks.¹⁸

We recommend that the Victorian government initiates a planning process for the equitable phase-down of gas distribution networks. This is explained in our response to consultation questions in the following pages.

Response to consultation questions

Consultation question: 18. *anticipated impact on cost of owning and operating the gas network as a result of the regulatory options, and how costs may be recovered through a changing customer base.*

A plan to decommission gas distribution networks will be needed

Electrification, whether policy-driven or market-driven, is likely to materially impact the financial viability of Victoria's gas distribution networks, which have a collective asset base of more than \$5 billion.¹⁹

¹⁶ Engage Victoria. [Minimum Standards for Rental Properties and Rooming Houses](#).

¹⁷ Australian Energy Regulator (AER). [Gas Network Performance Report 2022](#). December 2022. Page 107.

¹⁸ IEEFA. [Managing the transition to all-electric homes](#). 2 November 2023. Page 5.

¹⁹ AER. [2024 Electricity and gas networks performance report – Financial performance data 2024 – Gas Distribution networks](#). September 2024



Previous IEEFA research found that under a scenario where all gas appliances were switched to electric alternatives at end-of-life, significant increases to gas distribution charges would be necessary if networks were to continue recovering their costs.²⁰

Figure 2: Price rises required to recover gas distribution costs in a scenario modelled by IEEFA.



Source: IEEFA.²¹ Based on a scenario where no new gas appliances are installed from 2025, which differs from the proposed options in this RIS.

Gas network revenue is regulated by the Australian Energy Regulator. While gas networks have previously cited a ‘regulatory compact’ with the regulator, who has historically made efforts to ensure networks fully recover their costs from consumers, there is no formal guarantee of cost recovery.²²

In fact, gas networks are exposed to demand risks under the current regulations. In aggregate terms, this has enabled gas networks to consistently over-recover revenue from consumers, and is the largest contributor to the \$1.8 billion in supernormal profits that the networks made between 2014 and 2022.²³

²⁰ IEEFA. [Managing the transition to all-electric homes](#). November 2023. Page 20.

²¹ Ibid. Page 20.

²² Justice and Equity Centre. [Submission to Jemena Gas Networks access arrangement 2025-30: Issues paper](#). 20 September 2024. Page 14.

²³ IEEFA. [Gas networks are making persistent and significant supernormal profits](#). 6 June 2024. Page 11.



This implies that an equitable approach to phasing down gas networks would likely require networks to bear some portion of unrecovered costs. However, there is no guidance on what this equitable share might look like.

The Victorian government should initiate a plan to phase down its gas distribution networks. This plan should cover:

- Principles for fairly sharing the remaining costs of the network between consumers, networks and (potentially) taxpayers. These principles should factor in gas networks' historic revenue over-recovery.
- Planning for the cost-effective decommissioning of large sections of the gas networks, noting that this would likely be far cheaper than abolishing each individual customer connection at the meter.
- Planning for a viable approach to continue delivering gas to commercial and/or industrial distribution-connected customers with no viable electrification option.

As gas networks are federally regulated, this planning would ideally be coordinated at a federal level. However, the scale of gas consumption in Victoria and progress towards electrification policies create a unique level of urgency for this problem to be solved in Victoria. The Victorian government should consider either initiating its own state-based plan to decommission its gas networks, and/or seek to initiate a national gas network decommissioning plan via the Energy and Climate Ministerial Council (ECMC).

Consultation question: 29. *the timing and potential need for any transitional arrangements to ensure the implementation of any regulations occurs smoothly.*

Regulations should be introduced in 2026 at the latest

There are two primary reasons to avoid delay in implementing electrification regulations in Victoria:

1. Annual-scale gas supply gaps could occur as soon as 2027²⁴

It is likely too late for Victoria to rely on residential electrification alone to completely mitigate the risk of gas supply gaps. However, IEEFA's research has shown residential electrification would have a significant impact on these gaps – both at an annual scale²⁵, and during peak events²⁶.

The imminent nature of these challenges means that delaying the implementation of electrification initiatives by even a year could materially increase the level of gas supply gap that may need to be solved using other interim measures that are more expensive, such as importing gas from interstate.

²⁴ ACCC. [Gas Inquiry 2017-2030: Interim update on east coast gas market](#). December 2024. Page 92.

²⁵ IEEFA. [Reducing demand: A better way to bridge the gas supply gap](#). 16 November 2023. Page 22.

²⁶ IEEFA. [No shortage of solutions to gas supply gap](#). 19 April 2024. Page 11.



By contrast, the timely implementation of residential electrification initiatives would result in smaller gas supply gaps. These gaps may be easier for Victoria to manage through flexible demand management of major gas users.

2. Each year of delay adds close to \$900m in costs to consumers

IEEFA has estimated that at 'business as usual' rates, Victorians may be installing around 340,000 gas appliances each year. These appliances are typically expected to last between 12 and 20 years, leading to a considerable lock-in of higher costs and greenhouse gas emissions for consumers.²⁷

We have estimated the additional cost burden for one year's worth of gas appliance purchases in Victoria could be around \$900 million.²⁸ This would be felt by consumers over the lifetime of their appliance, and does not factor in any further rise in gas prices, which would only increase that cost.

IEEFA recommends that the Victorian government commences the proposed regulations in 2026 at the latest. While we acknowledge that some transitional arrangements may need to be considered for cases that are more complex to electrify, this ought not delay the transition to efficient electric appliances for the majority of Victorian households.

Consultation questions: **13.** any data available related to barriers to adoption of RCACs and considerations required around potential exemptions; **15.** the potential scale of and costs involved in undertaking building modifications when installing an electric appliance; **16.** any potential exemptions that may be required in recognition of barriers to electrify as a result of physical or regulatory constraints.

Victoria should prioritise strategies to mitigate electrification barriers

Most studies of electrification have focused on standalone dwellings, as they are the most common housing archetype in Australia. These dwelling types typically face the lowest barriers to electrification.

However, these households may still be impacted by electrification, via increasing gas network charges as other consumers leave the gas network. Therefore, as a general principle we consider that the Victorian government should prioritise addressing barriers to electrification as much as possible, rather than creating exemptions for harder-to-electrify cases.

Many barriers to electrification could be addressed via regulatory or policy measures. For example:

²⁷ IEEFA. [Managing the transition to all-electric homes](#). 2 November 2023. Page 15.

²⁸ Ibid.



- Regulations should be considered that prevent owners corporations from unreasonably blocking strata title owners from installing reverse cycle air conditioners (RCACs) or heat pump hot water systems on common property; and
- Planning reforms should be considered that allow owners of properties in heritage overlays to locate RCACs or heat pump hot water systems in locations visible to the street without requiring a planning permit (similar to the existing arrangement for solar panels).²⁹

Other cases could be resolved via targeted financial support. For example:

Cases that require switchboard upgrades

Switchboards that do not include residual current devices (RCDs), or that still use older-style ceramic fuses, are not considered compliant with modern safety standards and will need to be updated if new electric appliances are installed.

The installation of a new electric appliance may be the prompt that leads many households to upgrade their switchboard. However, switchboard upgrades are necessary to address energy safety concerns, regardless of whether new electric appliances are to be installed. Rental minimum standards in Victoria already require switchboards in rental properties to have modern specifications, fitted with circuit breakers and electrical safety switches.³⁰

Switchboard upgrades can impose a significant additional cost to electrification, costing approximately \$1,000-\$1,500.³¹ Separately to its electrification reforms, the Victorian government should consider subsidising switchboard upgrades on energy safety grounds.

Cases where complementary upgrades may be required

A limited number of older apartments may lack the physical outdoor space for a RCAC or heat pump hot water system. In such cases, the only viable electric appliance may be a resistive electric hot water system or resistive electric heater that can be located fully inside the apartment.

These appliances are always more costly to run than heat pump-based alternatives, and are likely to be more costly to run than gas appliances at current rates. Increasing gas distribution network charges may change this in future.

The additional running costs of these appliances could be mitigated if they are coupled with thermal efficiency upgrades and/or the installation of rooftop solar and batteries. However, these solutions come with additional upfront costs and strata-related barriers.

The Victorian government should prioritise solutions for these hard-to-electrify dwellings.

²⁹ Department of Transport and Planning. [Victoria Planning Provisions – Amendment VC226. Explanatory Report Approval Gazetted](#). May 2023. Page 2.

³⁰ Consumer Affairs Victoria. [Electrical safety rental minimum standard](#). 18 January 2023.

³¹ Author's own experience, Melbourne, 2024.



Finally, we note that some consumers may receive advice that electrification will require an upgrade from single-phase to three-phase power. The Victorian government has developed guidelines to support consumers regarding this decision.³² However, there may be a need for regulations that ensure the correct advice is provided to consumers, with compliance measures in place to ensure three-phase upgrades only occur when absolutely necessary.

High-level analysis suggests that this may primarily affect particularly large dwellings, or those with particularly high coincident energy loads.³³

The Victorian government should also draw on experiences from comparable regions where all-electric dwellings are standard. For example, Tasmanian climates are similar or cooler to Victorian climates; however, Tasmanian homes predominantly rely on resistive electric appliances for heating and hot water.³⁴

Consultation questions: 8. any data available related to the purchase and installation costs of electrifying new and/or existing buildings in relevant commercial sectors, including estimated cost differentials between small, medium and large commercial buildings; **11.** key cost factors and considerations that may impact the cost of electrifying new or existing buildings in commercial settings that have not been identified; **21.** any data related to key costs and considerations that may be a barrier to electrifying new commercial buildings.

Victoria should develop a roadmap to electrify commercial buildings

There is a relatively smaller body of analysis looking at the costs and barriers to electrifying commercial buildings.

A large number of commercial buildings, for example retail stores and offices, are likely to use fossil gas for similar end uses as residential dwellings – heating and hot water. In such cases the economic and technical feasibility of electrification may be similar to residential dwellings. However, energy needs across other commercial building types are likely to be more diverse.

Victoria is unique in its widespread use of gas in buildings. It is important to recognise that all-electric new commercial buildings are the norm in the majority of Australian states and territories. IEEFA recommends the Victorian government consult with interstate stakeholders to understand the experience of all-electric commercial building construction in those states.

Additionally, some electricity distribution networks in other jurisdictions have implemented workstreams to support existing commercial and industrial customers to electrify. This includes Essential Energy in New South Wales, who have found that the business case for commercial electrification is often hampered by incorrect assumptions regarding the sizing of new electrical equipment, and perceived grid connection challenges.³⁵

³² Department of Energy, Environment and Climate Action. [Power Up Your Home](#). October 2023.

³³ Australian Financial Review: [If I go all electric, do I need to upgrade my grid connection?](#) April 2023. *Tristan Edis*.

³⁴ IEEFA. [How efficient appliances could ease Tasmania's cost of living](#). 5 March 2024. Page 6.

³⁵ Essential Energy. [Electrification Support Program](#). Presentation at 2024 RERO Energy & Innovation Conference, Wagga Wagga. August 2024.



Consultation questions: 24. how the proposed regulations may impact competition in the gas appliance manufacturing market and potential adverse impacts on consumers, including any data or analysis indicating the scale of potential consumer impact; **25.** how the proposed regulations may impact competition in Victoria’s gas plumbing industry and potential adverse impacts on consumers, including any data or analysis indicating the scale of potential consumer impact.

Increasing policy certainty will support electrification

A transition from gas to efficient electric appliances will lead to a parallel decline in demand for gas appliances and gas plumbing services, and an increase in demand for efficient electric appliances and their installation.

This trend appears to be underway regardless of the proposed regulations. For example, heat pump hot water system sales have experienced 63% annual growth on average in Victoria since 2019, and similar rises are observed in other states and territories.³⁶

The Victorian government’s proposed regulations would provide significantly greater certainty around the likely pace of electrification in the state. This could help support industry and consumers by:

- Providing greater certainty for appliance manufacturers to focus their business efforts away from gas appliances, and towards efficient electric appliances (for example, major gas appliance manufacturers such as [Dux](#), [Rinnai](#) and [Rheem](#) now offer a range of heat pump products³⁷);
- Providing greater certainty for appliance installers to invest in the necessary training and skills to install efficient electric appliances; and
- Providing gas networks and the Australian Energy Regulator with the certainty needed to slow investments in network growth, and reduce stranded asset risks for gas consumers.

Selected responses on additional data sources

Consultation questions: 1. any data related to prevalence and energy usage of gas and electric appliances in commercial sectors, including both take up in new buildings and usage in existing buildings; **3.** any data available related to prevalence of gas commercial kitchen appliances in commercial sectors, or any related data regarding the proportion of buildings in Victoria that use a reticulated gas network connection solely for heating or hot water purposes.

The Commercial Building Baseline Study provides, to IEEFA’s knowledge, the most comprehensive and detailed analysis of energy consumption in commercial buildings in Victoria.³⁸

³⁶ Data from Clean Energy Regulator. [Quarterly Carbon Market Report – December Quarter 2024 \(data release\)](#). January 2025.

³⁷ Dux. [Ecosmart Heat Pumps](#); Rinnai. [Heat Pump](#); Rheem. [Heat Pumps](#).

³⁸ Department of Climate Change, Energy, the Environment and Water. [Commercial Building Baseline Study](#).



Commercial fit-out planning applications are held by local governments, and could provide useful information on recent trends in appliance installations, including the prevalence of gas in commercial kitchens.

Consultation question: 2. any data related to the asset lives of both gas and electric appliances in both the residential and commercial settings.

In practice, this will vary depending on the quality of the appliance. IEEFA has used the following assumptions in our analysis, which appear consistent with various other analyses:

Table 1: Gas appliance lifetime assumptions used in IEEFA’s analysis.

Gas appliance	Average lifetime
Gas cooktop	14 years
Gas oven	14 years
Gas upright cooker	14 years
Gas ducted heater	20 years
Gas non-ducted heater	20 years
Gas instant water heater	15 years
Gas storage water heater	13 years
Gas-boosted solar water heater	15 years

Sources: Detailed in IEEFA – *Managing the transition to all-electric homes – Technical appendices*.³⁹

In our previous analysis, we have used a ‘retirement function’ approach to represent the fact that these assumptions are averages only.⁴⁰ In practice, some appliances may break down earlier, or last much longer than these estimates.

Consultation question: 4. any data available related to prevalence of shared gas services in Class 2 buildings and views on relevant costs associated with electrification of shared gas services including the potential need for exemptions

Shared gas services in Class 2 buildings are typically associated with the use of embedded gas networks. The Victorian government may consider consulting with embedded gas network providers, strata management firms or residential apartment developers to seek information on the prevalence of shared gas services.

While electrification of shared gas services is challenging, it also offers a significant economy-of-scale opportunity to reduce gas consumption. Providers such as Wattblock may be able to offer useful case studies on the feasibility and economics of electrification of bulk hot water services.⁴¹

³⁹ IEEFA. [Managing the transition to all-electric homes – Technical appendices](#). November 2023. Page 3.

⁴⁰ Ibid. Page 4.

⁴¹ Wattblock. [Education Centre](#).



Consultation question: 14. *any data available regarding historical or future forecasted improvements in the energy efficiency and/or cost of electric and gas appliances*

The Residential Baseline Study includes data on the estimated energy consumption, and appliance stock of many electric and gas appliances.⁴² This incorporates an estimate of historical and projected energy efficiency improvements.

IEEFA notes that there is relatively limited opportunity for additional energy efficiency improvements for appliances that use resistive heating elements, where efficiencies are generally close to 100%. However, by far the most impactful increase in efficiency of electric appliances has occurred via the widespread availability of heat pumps. The coefficient of performance (CoP) of a heat pump is often more than three times the efficiency of a resistive electric appliance, and future improvements in CoP may be possible.⁴³ The GEMS product database could be reviewed to determine how the CoP of available appliances has increased over time.⁴⁴

⁴² Energy Rating. [Residential Baseline Study](#).

⁴³ IEEFA. [Appliance Standards are key to driving the transition to efficient electric homes](#). 23 April 2024. Page 2.

⁴⁴ GEMS Regulator. [Energy Rating](#).