28 February 2025

Submission: Victorian Building Electrification Regulatory Impact Statement

Executive Summary

The Australian Pipeline and Gas Association (APGA) welcomes the opportunity to comment the Building Electrification Regulatory Impact Statement. Victorian Government's proposed policy options in the Regulatory Impact Statement (RIS) will not achieve its stated objectives of reducing gas demand, lowering emissions, or decreasing energy costs. The Australian Pipelines and Gas Association does not support any of the proposed options and urges the Government to abandon this process in favour of a balanced, evidence-based approach that protects business competitiveness, economic growth, and energy security.

The Victorian Gas Substitution Roadmap (VGSR) aims to navigate the transition to net-zero emissions while ensuring affordability and reliability. However, the Government's preferred policy option undermines Victorian businesses, particularly small and medium-sized enterprises (SMEs), by increasing costs, reducing operational flexibility, and threatening jobs. It will increase reliance on coal-fired power generation, contradicting emissions reduction goals, while also failing to achieve a meaningful reduction in gas demand.

Key Concerns

1. Threat to business competitiveness and SMEs:
    - Higher energy costs will disproportionately impact SMEs, which lack the financial resources to absorb price increases or retrofit facilities.
    - Plumbing, and associated trades, will face significant job losses, while the electrical sector will struggle to meet increased demand for upgrades.
    - Rising input costs for manufacturers and other energy-intensive businesses will drive industry out of Victoria, harming the state's economic resilience.
2. Increased reliance on coal-fired power:
    - Electrification will shift demand to an electricity grid that remains dependent on brown coal, increasing emissions in the short to medium term.
3. Minimal reduction in gas demand:
    - Even under optimistic modelling, gas consumption is projected to decrease by only 60 PJ by 2045, a negligible benefit relative to the cost.

- If addressing Victoria's declining gas reserves is a priority, 60PJs of gas could readily be sourced at a lower cost than electrification.

4. Higher energy costs for all Victorians:
    - Wholesale electricity prices will rise more than projected cost savings, increasing bills for households and businesses.
    - Substantial electricity network upgrades are required.
    - The policy will reduce investment in gas supply and infrastructure, further increasing gas costs for those remaining in the network.
5. Regressive impacts on households:
    - Low-income households will struggle to afford forced electrification.
    - Apartments and high-density housing face logistical barriers, making implementation difficult and costly.
    - The exemption regime aims to address all concerns, but it is neither practical nor timely in its implementation.
6. Undermines future of renewable gas:
    - The policy fails to acknowledge the critical role of renewable gases such as biomethane and hydrogen in decarbonising Victoria's energy system.
    - Instead of supporting emerging renewable gas industries, the Government's approach discourages investment, increase network costs to deliver these carbon-neutral fuels, stalling innovation and delaying emissions reductions.
7. Flawed modelling leading to poor decision-making:
    - The RIS relies on unrealistic cost assumptions, inflates benefits, and underestimates the broader economic impacts.

It is our strong view that the Victorian Government's approach to this Regulatory Impact Statement is fundamentally flawed. It disregards economic realities, underestimates the costs, and fails to address broader energy system challenges.

Locking Victorians out of choice

The Victorian Government's proposed electrification mandate eliminates consumer choice, forcing households and businesses to transition on an arbitrary timeline rather than allowing them to make decisions based on their financial circumstances and practical needs.

The government's claim that electrification will save households "thousands" on energy bills annually is based on idealised conditions – homes with ample space for heat pumps and no need for costly rewiring, switchboard upgrades, or new supply connections.

The realities of Victorian housing stock make this an unrealistic assumption. Many homes, particularly older properties and apartments, will require extensive and expensive modifications, making the transition financially prohibitive for a large number of households.

The RIS offers no solution for households unable to afford the high costs of transitioning from gas to electric appliances, save a 'catch-all' exemption regimes that will be unworkable in reality. Retrofitting costs – including switchboard and wiring upgrades, installation of heat pumps, and potential structural modifications – could run into tens of thousands of dollars per home, yet no financial assistance or cost-mitigation strategy is included.

Forcing households to electrify ignores financial constraints, property limitations, and choice, turning what should be a voluntary transition into an unnecessary financial burden.

Negative impacts extend beyond households

The electrification mandate fails to consider commercial and industrial users, many of whom rely on gas appliances for operational efficiency, cost-effectiveness, and process reliability.

- Restaurants, bakeries, and manufacturing facilities depend on gas for high-heat cooking and industrial processes—electric alternatives are often infeasible or significantly more expensive.
- The plumbing and gasfitting workforce face disruption, with thousands of skilled jobs at risk due to forced de-gasification.
- A shortage of electricians could stall the electrification rollout, leading to higher labour costs and extended delays.

The impact on industrial businesses, the very entities this policy is supposed to support, is severe. Higher wholesale electricity prices and increased network costs will burden businesses already struggling with rising input costs. Some may absorb the added costs, but many will relocate or shut down, further eroding Victoria's economic competitiveness.

Rather than incentivising consumers and businesses to transition in a way that works for them, the Victorian Government is imposing an unworkable, costly, and unfair solution that disregards economic realities.

Little gas gain for the financial pain

The modelling in the RIS estimates that the preferred policy option will reduce gas demand by just 60 PJ by 2045. This is an extraordinarily small reduction given the enormous financial burden imposed on Victorian households and businesses.

- To achieve this reduction, 480 homes would need to electrify every day for the next 20 years—an unrealistic and impractical target.
- The 10-year cost of the preferred option is estimated at $5.88 billion, but APGA considers this a significant underestimate given hidden infrastructure costs and rising labour expenses.

A cost-effective alternative

There are far cheaper and more efficient ways to secure Victoria's energy future:

1. Expand existing pipeline infrastructure to bring additional gas supply from northern Australia and other sources to Victoria.
2. Invest in renewable gases as a transitional fuel rather than forcing immediate and costly electrification.
3. Enhance energy efficiency programs to encourage voluntary transitions over time, rather than relying on compulsion and mandates.

APA's proposed Stage 3 and 4 expansions of the South West Queensland Pipeline would increase capacity by 100 TJ/day[1]—offering a more cost-effective solution to Victoria's energy challenges without imposing unnecessary burdens on consumers and businesses.

A poor use of capital

Instead of allocating resources efficiently, the Victorian Government is pushing an electrification-first policy that does not prioritise economic sense.

- The financial cost of electrification is significantly higher than simply expanding and optimising existing gas infrastructure.
- Forced electrification will weaken Victoria's energy flexibility rather than supporting a diverse, reliable, and cost-effective energy mix.

This approach does not represent strategic energy planning, ignoring viable and affordable pathways to reduce emissions while minimising disruption to consumers and businesses.

[1] APA Group, 2025, *APA's East Coast Gas Expansion Plan, https://www.apa.com.au/news/asx-and-media-releases/apas-east-coast-gas-expansion-plan*

Minimal emissions reductions, increased reliance on coal

- The forced electrification mandate will increase short-term reliance on coal-fired power, undermining the Victorian Government's own emissions reduction targets.
    - Electrification will increase total electricity demand, requiring additional generation from Victoria's existing brown coal power plants.
- The increases will be felt most in existing evening peaks, which will be increasingly challenging and expensive to meet in winter.
- Modelling by LEK[2] found that for every tonne of gas-related emissions avoided, 0.5 tonnes of new emissions will be generated from coal-fired electricity production.
- Boston Consulting Group's 2023 report[3] found that the best use of renewable energy is to displace coal-fired power first, followed by light vehicle electrification, rather than forcing household electrification.

A flawed strategy for decarbonisation

Instead of focusing on displacing coal with renewables, the Victorian Government is diverting renewable electricity towards household electrification, which will increase peak demand pressures and require fossil-fuelled peaking plants to compensate.

A 2021 University of Melbourne study for the Future Fuels CRC[4] found that residential electrification in Victoria would increase emissions by up to 15% in the short term.

This is because:

- Gas remains a lower-emission energy source for heating until at least 2035.
- The policy forces reliance on brown coal in winter months, worsening emissions.

Rather than accelerating decarbonisation, the Victorian Government's policy will slow progress by increasing reliance on coal-fired electricity generation.

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[2] LEK Consulting, 2025, *Impacts of Forced Electrification on the Victorian Energy System, Costs and Emissions*, analytical report for Energy Networks Australia.
[3] Boston Consulting Group, 2023, *The Role of Gas Infrastructure in Australia's Energy Transition,* *https://www.jemena.com.au/siteassets/asset-folder/documents/gas/the-role-of-gas-infrastrcuture-in-australia-s-energy-transition.pdf*
[4] Future Fuels CRC, 2021, *Integrated Electricity and Gas Systems Studies: Electrification of Heating*, https://www.futurefuelscrc.com/wp-content/uploads/FF-CRC-Integrated-Electricity-and-Gas-Systems-Studies-Electrification-of-Heating-for-public-release.pdf

The costs vastly outweigh the benefits

The RIS modelling drastically underestimates costs while inflating benefits to justify an economically unsound policy direction.

- The RIS uses an artificially low discount rate of 4%, rather than the AEMO's recommended 7%, inflating the apparent benefits of electrification.
    - While the 4% discount rate is attributed to the Victorian Treasury, it is actually a recommendation for government-funded major infrastructure projects, not for consumer-funded household spending.
- Electricity network expansion costs (~$13 billion) are omitted, yet $678 million in avoided gas network costs are included.
- The RIS assumes switchboard and electricity supply connection upgrades are required for only 19% of residential properties, vastly underestimating real-world costs.

These modelling choices have led to an artificial conclusion that forces Victorians into electrification while disregarding the true financial burden.

The approach to the RIS is fundamentally flawed

The RIS consultation process appears designed to justify a predetermined policy outcome rather than conduct a genuine cost-benefit analysis.

- The Victorian Government has refused to release the full modelling underpinning the RIS, going against best regulatory practice.
- The RIS calls for industry input on key data points—including appliance costs and electrification barriers—yet fails to incorporate this input into the modelling.
- Industry has repeatedly raised concerns that have been ignored, suggesting that the consultation process lacks transparency and accountability.

Given the major gaps in the modelling and the failure to provide solutions to affordability and energy security challenges, the Victorian Government must reconsider its approach.

APGA recommendation

APGA does not support any of the four options detailed in the RIS, and recommends abandoning the policy.

Impact on the Victorian economy and energy security

Victoria's energy-intensive economy relies on affordable and reliable gas supply to power its industries, manufacturing sector, and households. The gas industry contributes $22 billion annually and supports over 40,651 jobs across the state[5]. Natural gas plays a critical role in industrial heat processes, food processing, and chemical production, where electrification is neither practical nor economically viable.

The Building Electrification RIS proposes an accelerated shift away from gas, assuming this can be achieved without disrupting energy affordability, reliability, or economic stability. However, multiple independent analyses challenge this assumption, showing that the proposed transition risks significant negative consequences for Victoria's energy system and economy.

Deloitte's modelling for the RIS attempts to quantify the impact of electrification on Victoria's electricity demand and energy security. However, its findings have critical limitations:

- No techno-economic modelling of the electricity network was conducted to determine whether grid reliability can be maintained.
- No power system analysis was undertaken to assess the infrastructure upgrades needed to support increased demand.
- The model underestimates the impact on electricity tariffs, assuming minimal price increases while also predicting an overall reduction in gas consumption.

These findings are strongly disputed by APGA, Energy Networks Australia, and other industry experts, who argue that the actual impact of these regulations on electricity demand and consumption has been understated.

Industrial decline and capital flight

Victoria's economic outlook has deteriorated significantly, with industry leaders warning of capital flight and stagnation. In the most recent ASX financial results period, SGH chief executive Ryan Stokes has highlighted that development capital is fleeing Victoria due to burdensome tax policies[6], including high land tax and windfall gain taxes. Similarly, Wesfarmers CEO Rob Scott has noted that Victoria lags behind other states due to high payroll taxes, regulatory inefficiencies, uncertainty of energy prices[7] and lingering effects of pandemic-era policies.

A major driver of this decline is energy price uncertainty, exacerbated by the Victorian government's approach to gas policy and electrification mandates. Victoria's energy-

[5] AEP, 2025, *Economic contribution of the gas industry,* https://energyproducers.au/wp-content/uploads/2025/02/Economics-of-Gas-Industry-KPMG-Final-Report_18Dec2024.pdf
[6] AFR, 2025, *Ryan Stokes declares Victoria in 'recession' as investment flees,* https://www.afr.com/chanticleer/ryan-stokes-declares-victoria-in-recession-as-investment-flees-20250211-p5lb5j
[7] AFR, 2025, *Victoria's busted economy is profit season's sneaky big shock,* https://www.afr.com/chanticleer/victoria-s-busted-economy-is-profit-season-s-sneaky-big-shock-20250228-p5lfv9

intensive industries, including manufacturing, food processing, and chemical production, require affordable and reliable gas to remain viable. However, the Building Electrification RIS accelerates the shift away from gas without ensuring a stable alternative, leading to increased electricity costs and higher operational risks for businesses.

Key consequences of rising energy costs include:

- Higher industrial production costs, making Victoria a less attractive place for investment compared to states with stable and affordable energy supply.
- Reduced business confidence, as firms reliant on gas face increasing uncertainty over future energy supply and price stability.
- Deindustrialisation, as energy-intensive manufacturers scale back operations or relocate to jurisdictions with more predictable energy policies and lower costs.

Business leaders have already flagged these concerns:

- Wesfarmers has paused major industrial investments in Victoria due to gas availability concerns.
- Stockland has reported a decline in Victorian housing market activity, partly due to rising energy costs affecting development feasibility.
- Incitec Pivot has closed its Geelong fertilizer manufacturing centre, in part due to Victorian energy prices[8].

Without a viable energy transition plan that safeguards affordability and reliability, Victoria risks long-term economic damage, job losses, and a shrinking industrial base. Businesses will continue to redirect investments to states with more stable energy policies, worsening the state's economic outlook.

The RIS will drive up energy costs and grid pressures

Analysis by LEK Consulting for Energy Networks Australia[9] found the Building Electrification RIS will significantly increase overall energy system costs and strain Victoria's electricity grid. The key findings include:

- $22 billion increase in energy system costs over 20 years, compared to a scenario where households and businesses transition to electric appliances only when financially beneficial.

- Rising wholesale electricity costs, which will impact all Victorian consumers—not just those switching from gas.

    - Wholesale electricity prices will increase by $5/MWh on average, with an even larger gap in the early 2030s, when supply constraints are most severe.

[8] AFR, 2024, *Incitec Pivot unwinds fertiliser business as write-offs spike to $1b,* https://www.afr.com/companies/manufacturing/incitec-pivot-unwinds-fertiliser-business-as-write-offs-spike-to-1b-20241111-p5kphl

[9] LEK Consulting, 2025, *Impacts of Forced Electrification on the Victorian Energy System, Costs and Emissions*, analytical report for Energy Networks Australia.

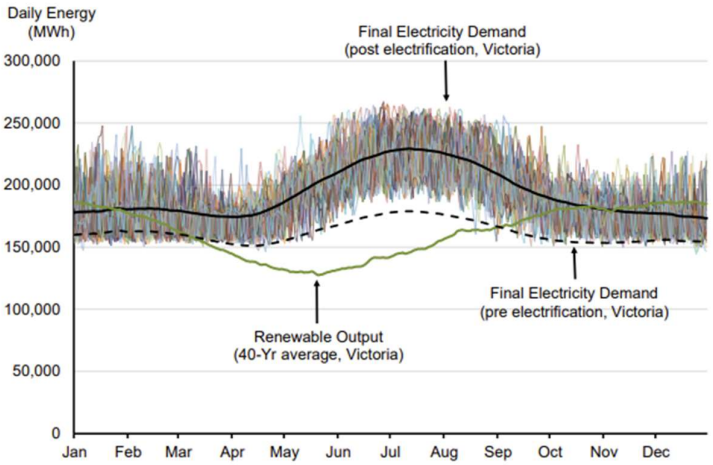
- Increased reliance on gas-fired power generation, contradicting the policy's aim to reduce gas dependency.
    - Additional 1.4GW of installed gas peaking capacity will be required by 2031, rising to 4.1GW by 2045.
    - Gas peakers will be essential because much of the additional electricity demand will occur in mornings, evenings, and winter months, when wind and solar output is at its lowest and battery storage is insufficient.
- Heightened grid instability, leading to 10+ more hours per year of electricity prices exceeding $500/MWh, increasing costs for both households and businesses.

Electrification poses a major reliability risk

Further analysis by Griffith University[10] highlights the fundamental risks of electrifying gas loads before necessary grid transformations and capacity investments. Their findings, particularly concerning Victoria's winter energy security, show:

- Electrifying 75% of residential gas loads and 20% of industrial gas loads will cause peak electricity demand to surge by 41%, from 9.5 GW to nearly 14 GW.
    - Existing power infrastructure is not capable of handling this increase, forcing prolonged reliance on fossil fuel generation.

Figure 7: 40 years of energy demand in the NEMs Victorian region



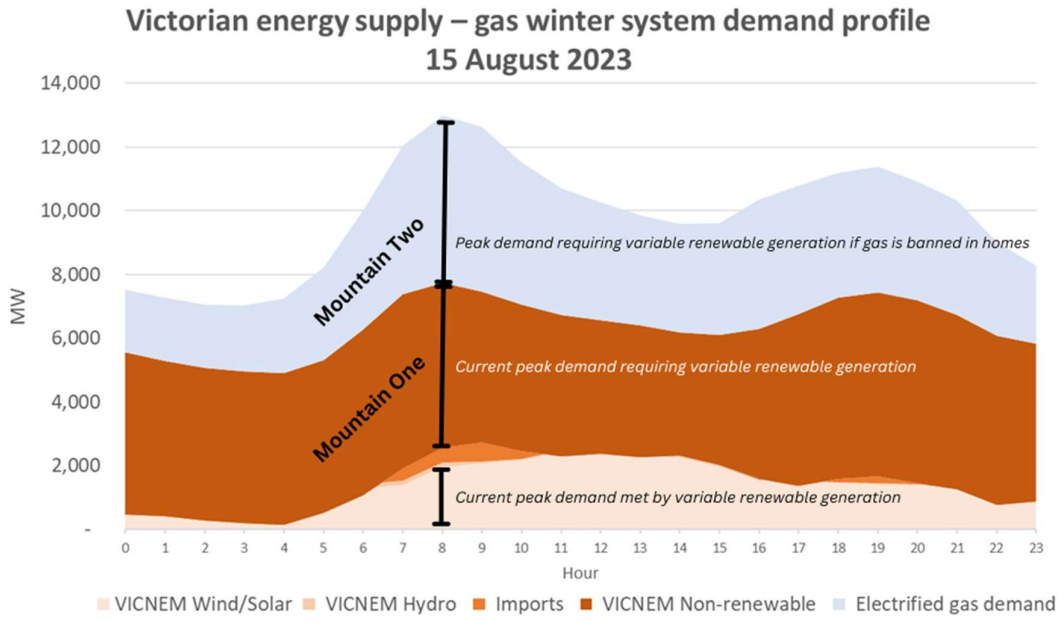
    - As the report notes: "Extending the service life of coal plants to maintain a secure power system is a predictable outcome of such a scenario."
- Gas turbine capacity must triple, with output more than doubling from 28 PJ/year to 61 PJ/year to support electricity demand when renewable generation is insufficient.

[10] Simshauser P and Gilmore J, 2024, *Policy sequencing: on the electrification of gas loads in Australia's National Electricity Market*, Griffith University Centre for Applied Energy Economics & Policy Research: Working Paper Series 2024-10, https://www.griffith.edu.au/__data/assets/pdf_file/0033/2059917/2024-10-NEM-Electrification.pdf

- Annual gas demand will decline by just 13% (from 226.6 PJ/year to 196.2 PJ/year), but peak daily gas demand will rise by 34% (from 1,356 TJ/day to 1,823 TJ/day).
    - This means that while some household and industrial gas use will decrease, gas will still be essential for power generation, creating a false narrative around the transition away from gas.

Victoria already faces significant energy security risks, as noted in 2023 analysis by EnergyQuest[11] and ongoing market assessments. These risks will be worsened by forced electrification, which will:

- Increase reliance on brown coal generation, as renewables are not expanding quickly enough to compensate for rising electricity demand.
    - Offshore Wind Implementation Statement 2 acknowledges that Victoria cannot currently meet demand with onshore renewables alone.
    - The lack of firming capacity means existing coal plants will need to stay online longer than expected.



- Exacerbate seasonal energy shortages, particularly in autumn and winter, when Victoria already experiences tight supply conditions.
- Raise reliability risks for businesses and households, exposing them to higher costs and more frequent price spikes.

Gas networks are a safety net for Victoria's energy system

[11] EnergyQuest, 2023, *Victorian peak demand analysis,* https://www.apga.org.au/sites/default/files/uploaded-content/website-content/energyquest_-_victorian_peak_demand_analysis_report_august_2023.pdf

Gas networks remain a vital component of Victoria's energy security, providing affordable, dispatchable energy to businesses and households. The Building Electrification RIS fails to account for the critical role gas plays in reducing electricity demand during peak periods.

Rather than phasing out gas infrastructure, Victoria should:

1. Retain and invest in gas infrastructure to ensure energy security and price stability.
2. Support gas as a flexible backup for renewable energy, recognising that even under electrification scenarios, gas-fired power remains essential for reliability.
3. Allow consumers and businesses to transition at their own pace, rather than forcing electrification before the grid is ready.

Impact on Victorian households and businesses

An equitable energy system must offer diversity, choice, and affordability for all Victorians to ensure that no household is left behind in the energy transition. While the Regulatory Impact Statement claims to ease cost-of-living pressures, the real-world consequences of its proposed options will do the opposite—driving up costs, increasing inequity, and disproportionately burdening lower-income households.

The RIS relies on theoretical cost estimates that fail to reflect real-world installation costs.

This discrepancy is exposed when comparing actual household electrification quotes from Victorian tradespeople against government estimates.

Real quotes vs. SEC estimates

Recent real-world quotes from Victorian households considering electrification upgrades show a vast gap between government expectations and actual costs:

Property	Real-World Quotes	SEC Estimated Upgrade Cost	SEC Electric Home Planner Savings (Annual)	Payback Period (Years)
Two-Bedroom Unit (Scoresby)	**$39,969**	$9,829	**$842/year**	**47.4 years**
Three-Bedroom House (Footscray West)	**$18,439**	$5,720	**$900/year**	**20.5 years**
Five-Bedroom House (Point Cook)	**$36,834**	$9,829	**$1,077/year**	**34.2 years**

These figures undermine the central claim of the RIS—that electrification will reduce household costs in a reasonable timeframe. In reality, even with government subsidies, the upfront investment for households is financially unworkable, locking families into decades-long payback periods.

The regressive impact of the RIS

The RIS is regressive, hitting low-income Victorians the hardest. Homeowners with the least financial flexibility cannot afford the upfront capital costs of electrification, meaning they are forced to either:

- Remain on the gas network, which will become more expensive as users leave.
- Take on new debt or unaffordable expenses to comply with forced electrification.

This is particularly severe for renters, social housing tenants, and lower-income households, who will bear the brunt of rising gas costs without the ability to make alternative choices.

Network Costs

As more households are forced off gas, the cost burden on remaining users will escalate dramatically. Gas network costs are shared among all users, meaning that as more people disconnect, the cost per customer rises exponentially.

Independent analysis shows the raw cost of delivering gas to industrial customers (excluding retail tariffs and government interventions) will skyrocket:

- When 5% of residential and commercial (R&C) customers leave, network costs double (2x).
- When 10% of R&C customers leave, network costs quadruple (4x).
- When 40% of R&C customers remain, retail gas prices will double (2x).
- When only 15% of R&C customers remain, retail gas prices will triple (3x).

Industrial users, particularly those in manufacturing, food production, and heavy industry, will face the most severe cost increases under the RIS. Unlike residential customers, many industrial users cannot easily electrify their processes due to technological and economic constraints. As household gas demand declines and more consumers exit the network, the cost burden will be disproportionately shifted to those who remain.

This will erode Victoria's industrial competitiveness as rising energy costs make operations more expensive, disrupt supply chains that depend on affordable gas, and force businesses to consider relocating interstate or overseas to maintain profitability. The cumulative impact will be job losses, higher costs for consumers, and a weakened industrial base.

The RIS fails to account for the inevitable cost spiral that will result from mass disconnections. As network costs are spread over fewer remaining customers, gas prices will continue to rise, driving even more users off the system and exacerbating the financial burden on those left behind. This creates a self-reinforcing loop, where the rapid decline in gas users accelerates cost increases beyond what businesses and households can sustain.

Lower-income households that cannot electrify will bear a disproportionate burden, where gas costs become unmanageable while alternative solutions are out of reach. Meanwhile, unintended consequences will emerge, such as greater reliance on inefficient electric heating, which will push up peak electricity demand and exacerbate winter energy shortages.

The Building Electrification RIS assumes a smooth and cost-effective transition, but in reality, it will trigger a financial crisis for industrial gas users and households who are unable to switch. Rather than accelerating disconnections, policymakers must prioritise maintaining a stable and affordable gas network, ensuring that Victoria's energy transition does not create unnecessary economic hardship.

Flawed modelling leads to suboptimal policy

APGA has previously provided extensive commentary on the modelling and assumptions used in the Regulatory Impact Statement (RIS) for Minimum Standards for Rental Properties and Rooming Houses[12], which also serves as the foundation for this RIS. The concerns raised in that consultation remain relevant and should be considered as part of this response.

A significant issue with this RIS is the lack of transparency surrounding its modelling. While some basic assumptions have been disclosed, the way they have been applied in the model remains undisclosed. The reasons for this secrecy are unclear, unless the intent is to produce a predetermined outcome rather than follow a rigorous, evidence-based policy design. Without full disclosure, it is impossible to properly scrutinise the findings or assess their validity. Despite this, APGA is able to comment on the stated assumptions, which raise serious concerns about the accuracy and integrity of the modelling and its conclusions.

One of the most striking flaws in the RIS is the treatment of carbon pricing. Deloitte's modelling relies on carbon price projections derived from the IPCC 6th Assessment Report, converted to Australian dollars. However, this approach does not align with Australian best practice. Both the AEMC (Australian Energy Market Commission)[13] and AER (Australian Energy Regulator)[14] have provided specific guidance on the appropriate carbon price settings for Australia, which reflect domestic policy, regulatory settings, and market conditions. These values are derived from the 2022-23 average value of Australian Carbon Credit Units, with an assumed 10% annual growth rate, and blended with interpolations from:

- **2024-2029:** IPCC 5th Assessment Report (RCP2.6 scenario)
- **2030-2050:** IPCC 6th Assessment Report (C2 scenario)

APGA acknowledges that this AEMC and AER guidance may not have been available at the time the RIS modelling was initially conducted, but it should have been updated to reflect current best practice. The discrepancy between the carbon price assumptions used by the Victorian Government and those accepted at the national level is significant, and this divergence will materially affect the cost-benefit analysis underlying the RIS.

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[12] APGA, 2024, *Submission: Minimum standards for rental properties and rooming houses in Victoria*, https://apga.org.au/submissions/minimum-standards-for-rental-properties-and-rooming-houses-in-victoria

[13] AEMC, 2024, *How the national energy objectives shape our decisions*, https://www.aemc.gov.au/sites/default/files/2024-03/AEMC%20guide%20on%20how%20energy%20objectives%20shape%20our%20decisions%20clean%20200324.pdf

[14] AER, 2024, *Valuing emissions reduction - AER guidance and explanatory statement*, https://www.aer.gov.au/system/files/2024-05/AER%20-%20Valuing%20emissions%20reduction%20-%20Final%20guidance%20and%20explanatory%20statement%20-%20May%202024.pdf

By inflating the carbon price relative to national guidance, the RIS risks overstating the benefits of electrification and understating the economic costs of phasing out gas. This selective use of assumptions raises serious questions about the objectivity of the modelling and whether it has been designed to justify a predetermined policy direction rather than provide a balanced and credible assessment of costs and benefits.

Year	Carbon price – RIS	Carbon Price – AER	Overstatement
2024	$106	$70	51.4%
2025	$112	$75	49.3%
2026	$118	$80	47.5%
2027	$124	$84	47.6%
2028	$130	$89	46.1%
2029	$135	$95	42.1%
2030	$141	$105	34.3%
2031	$154	$114	35.1%
2032	$167	$124	34.7%

Discount rate

- Deloitte has chosen a central discount rate of 4% (with a lower bound of 2% and an upper bound of 7%), citing alignment with the Victorian Department of Treasury and Finance's Technical Guidelines. Deloitte appears to reference the Economic Evaluation Guidelines for Business Cases,[15] which notes the following recommended discount rates:

[15] Victorian Department of Treasury and Finance, 2013, Economic Evaluation for Business Cases - Technical guidelines, https://www.dtf.vic.gov.au/sites/default/files/2024-10/Economic-Evaluation-Technical-Guide.doc

Table 7 DTF's recommended discount rates

Categories	Types of Investment	Basis	Rate (real)
Category 1	Provision of goods and services in traditional core service delivery areas of government, such as public health, justice and education. The benefits of these projects can be articulated but are not easily translated to monetary terms. E.g. schools, hospitals, police stations and civic open spaces.) Other projects in this category include projects evaluating potentially catastrophic scenarios for which considerable uncertainty surrounds estimates of costs and benefits.	Projects falling within this category should use a real risk free rate plus a very small risk premium. Based on long-term average government bond rates, **an appropriate real discount rate for these projects is four per cent.**	4%
Category 2	Provision of goods and services in traditional core service delivery areas of government (i.e. non-commercial investments), but those for which the benefits attributed to the project are more easily translated to monetary terms. E.g. public transport, roads and public housing).	These projects should be discounted using a risk free rate plus a modest risk premium depending on the project's sensitivity to the economy. Based on long term average government bond rates, **an appropriate real discount rate for these projects is seven per cent.**	7%
Category 3	Commercial investments with similar risks as the private sector. While there should ideally be limited government involvement in this area, government should require a rate of return on commercial investments comparable to that which the private sector requires given the degree of risk associated with the area of activity.	These projects should use a **market rate of return** as the default discount rate, commensurate with the risk profile associated with the industry and specific characteristics of the project. Given that there is the potential for such investments to be significantly more risky than an average market return, **project proponents should liaise with DTF regarding the appropriate rate.**	Consult with DTF.

However, Deloitte appears to be referencing the Economic Evaluation Guidelines for Business Cases, which recommend discount rates for projects with clear public benefits. This document is not only outdated but also inappropriate for the type of policy being assessed in the RIS. The preferred option in the RIS is classified as a "Category 1" project—typically referring to goods and services in core service delivery areas where public benefits are difficult to quantify. However, forcing homeowners to replace gas appliances with electric ones does not fit this definition. The policy in question is not a public infrastructure investment but rather a government-mandated intervention into private household energy choices.

A more appropriate approach would be to consider the discount rates applied by the Australian Energy Market Operator (AEMO) when evaluating long-term energy investments. AEMO, under the oversight of the Australian Energy Regulator (AER), sets discount rates that reflect private investment risks in the electricity sector. Given that electrification under the RIS would require significant private investment in household and network infrastructure, AEMO's Integrated System Plan (ISP) discount rates provide a far more relevant benchmark.

ISP	Central	Lower	Upper
2022[16]	5.5%	2%	7.5%
2024[17]	7%	3%	10.5%
2026 (draft)[18]	7%	3%	10%

For context, AEMO's discount rates have steadily increased in recognition of changing market conditions. In the 2022 ISP, the central discount rate was 5.5%, rising to 7% in 2024, with a lower bound of 3% and an upper bound of 10.5%. The draft 2026 ISP maintains a central discount rate of 7%, aligning with the pre-tax real Weighted Average Cost of Capital (WACC) for non-regulated assets, which AEMO calculated at 6.98%. The lower bound continues to be based on the most recent AER revenue determination (currently 3%), while the upper bound follows Infrastructure Australia's 10%[19] benchmark for economic appraisal.

The selection of 4% as the central discount rate in the RIS is clearly out of step with real-world economic conditions. This artificially low discount rate inflates the modelled benefits of electrification, exaggerating long-term cost savings while understating the financial risks to households, businesses, and the broader energy system.

Costs of switchboard and electrical upgrades

The RIS also drastically underestimates the costs of necessary switchboard and electrical upgrades, further distorting its economic analysis. It assumes that only 19% of properties will require upgrades, estimating switchboard replacement costs at $1,200 and supply connection upgrades at $3,500. These figures fail to reflect the reality of upgrading older homes to handle the additional electrical load from multiple heat pump appliances.

The $1,200 estimate for switchboard upgrades is unrealistic, as this should be considered a minimum cost. Many older homes, particularly those with aging electrical infrastructure, will require higher amperage switchboards to support increased energy demand. Additionally, three-phase power upgrades—which will be essential for many properties—are significantly more expensive than assumed. The RIS's $3,500 cost estimate only applies to basic overhead connections; for properties requiring pits and trenching work, actual costs can be double this amount.

Another major omission in the RIS's cost modelling is the lack of consideration for internal wiring upgrades. Retrofitting older homes for full electrification often necessitates rewiring, yet the RIS does not account for these costs. For homes with existing instantaneous gas hot

[16] AEMO, 2021, *2021 Inputs, Assumptions and Scenarios Report*, https://www.aemo.com.au/-/media/files/major-publications/isp/2021/2021-inputs-assumptions-and-scenarios-report.pdf?la=en&hash=F3FEB4E71CA451A31E2251DC06DF5FDA
[17] AEMO, 2023, *2023 Inputs, Assumptions and Scenarios Report,* https://www.aer.gov.au/system/files/2023-10/AEMO%20-%202023%20Inputs%20Assumptions%20and%20Scenarios%20Report%20%28IASR%29%20-%20July%202023.pdf
[18] AEMO, 2024, *Draft 2025 Inputs, Assumptions and Scenarios Report – Stage 1*, https://aemo.com.au/-/media/files/major-publications/isp/2025/draft-2025-inputs-assumptions-and-scenarios-report-stage-1.pdf
[19] Infrastructure Australia, 2021, *Guide to economic appraisal*, https://www.infrastructureaustralia.gov.au/sites/default/files/2021-07/Assessment%20Framework%202021%20Guide%20to%20economic%20appraisal.pdf

water systems, the RIS assumes an additional cost of $1,000 to replace them with heat pump systems. However, it is unclear whether this figure applies per lot or per entire Class 2 property. If applied per individual dwelling, the estimate may be reasonable, but if applied to multi-unit buildings as a whole, it is grossly insufficient.

The RIS itself acknowledges that many Class 2 buildings (multi-unit dwellings) will be impractical to fully electrify, yet it simply grants exemptions without detailing how these will be implemented. The lack of clarity on how electrification mandates will apply to these buildings raises serious equity and feasibility concerns.

Emissions

In 2022-23, Victoria consumed 215 petajoules (PJ) of natural gas, which accounted for only 18% of the state's total energy consumption of 1,173 PJ[20]. Residential households used 92 PJ, while the commercial and services sector consumed a further 22 PJ. The Regulatory Impact Statement (RIS) acknowledges that Victoria's entire gas sector contributes 16% of the state's total emissions, but residential and commercial gas use accounts for a smaller share. Despite this, the RIS proposes an electrification strategy that will deliver only marginal emissions reductions while imposing significant costs on households and businesses.

Regardless of which of the four policy options is chosen, the RIS will barely shift Victoria's overall emissions trajectory. Analysis by LEK Consulting found that the preferred policy option in the RIS will result in 0.5 tonnes of additional emissions from electricity generation for every tonne of gas consumption emissions 'saved' between FY25 and FY45.

This means that for every unit of emissions reduced from cutting gas use, half of that reduction is immediately negated by increased coal and gas-fired electricity generation. The net annual emissions impact of the RIS ranges from a marginal increase of +0.1% to a maximum decrease of just 2.2% of Victoria's total emissions, which stood at 84.7 million tonnes (Mt CO_2e) in 2022.

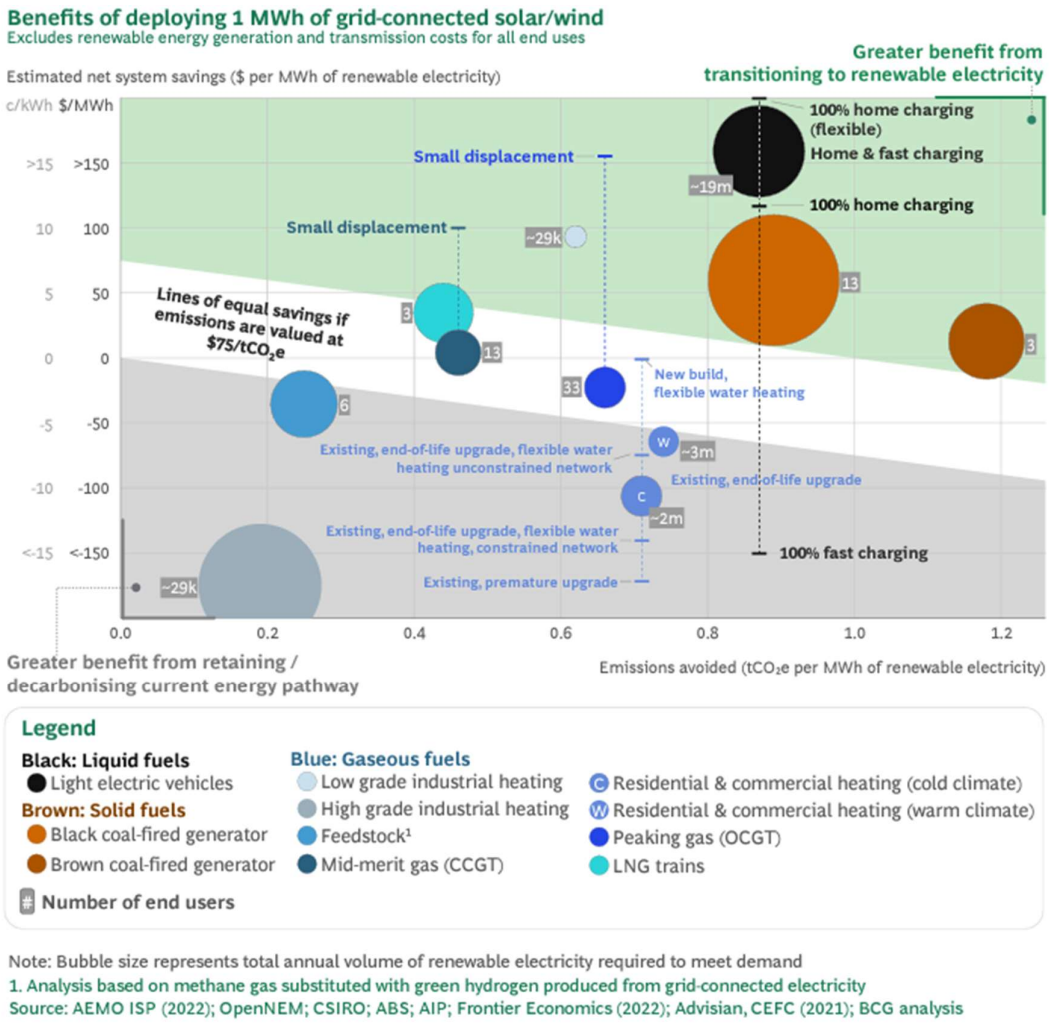
The cumulative consumer cost of achieving this marginal emissions reduction is staggering—$22 billion, equating to $1,222 per tonne of emissions abatement. This makes it one of the least cost-effective emissions reduction strategies ever proposed, especially when compared to alternative decarbonisation pathways.

Increases Coal Reliance

A fundamental flaw in the RIS is that it will increase Victoria's dependence on coal-fired power in the short to medium term. A 2021 study by the University of Melbourne for the Future Fuels CRC modelled the impact of residential electrification on Victoria's emissions trajectory and found that emissions actually increased by up to 15% due to greater reliance on coal-generated electricity. The study concluded that natural gas would remain the lower-emitting option for residential energy use until at least 2035, particularly given that the Victorian Government is financially supporting the continued operation of the Loy Yang A and Yallourn brown coal generators until 2035 and 2028, respectively.

[20] Australian energy statistics 2024, for the 2022-23 financial year

Rather than pursuing a policy that inadvertently prolongs coal dependency, the Victorian Government should focus on displacing coal-fired generation first. Research by Boston Consulting Group (BCG) in 2023 found that the most cost-effective decarbonisation strategy is to direct the next 174 terawatt-hours (TWh) of renewable electricity into replacing coal-fired power generation and electrifying light vehicles before diverting that energy to household electrification. This approach delivers the highest emissions reduction per dollar spent, whereas the RIS forces household electrification before the grid is capable of supporting it, leading to greater reliance on fossil fuels and higher costs for consumers.



Note: Bubble size represents total annual volume of renewable electricity required to meet demand
1. Analysis based on methane gas substituted with green hydrogen produced from grid-connected electricity
Source: AEMO ISP (2022); OpenNEM; CSIRO; ABS; AIP; Frontier Economics (2022); Advisian, CEFC (2021); BCG analysis

The RIS fails as an emissions reduction policy. It offers only marginal emissions savings at an extreme cost, undermines affordability, and exacerbates coal reliance at a time when Victoria should be prioritising coal phase-out. A more effective approach would be to first transition away from coal, invest in renewables and firming capacity, and only then consider household electrification once the grid is decarbonised and capable of handling the additional demand. The current policy puts the cart before the horse, forcing an electrification pathway that delivers little environmental benefit while imposing massive financial burdens on Victorian households and businesses.

Practicality of exemption regime

The proposed exemption regime in the Regulatory Impact Statement (RIS) lacks clarity, creating uncertainty for installers, property owners, and regulators. Instead of providing a clear and enforceable framework, the exemptions are both too broad and too narrow, making them difficult to apply consistently while failing to address real-world implementation challenges.

The first exemption, which applies where insufficient space is available in the building or any occupiable outdoor area, is vague and subjective. The RIS does not define what constitutes 'sufficient space', leaving it up to individual installers to determine compliance. This will likely lead to inconsistent decisions and potential disputes between installers, property owners, and regulators. A key concern is how this would apply to apartment residents relying on instantaneous gas hot water systems. An installer may decide that a small outdoor balcony is 'sufficient space' to install a heat pump hot water service, forcing residents to sacrifice their only private outdoor amenity to comply with the policy. The lack of clear criteria risks creating arbitrary enforcement and legal challenges, making compliance both uncertain and contentious.

The second exemption, covering Class 2 (multi-unit residential buildings) and Class 10b (outbuildings such as carparks and sheds) where centralised gas hot water or heating systems exist, is a necessary and practical recognition of the challenges in retrofitting large apartment buildings. However, this exemption implicitly acknowledges that most Class 2 and Class 10b buildings cannot practically electrify, raising the question of why these building types are not exempted entirely. If centralised systems present such significant logistical and financial barriers, a blanket exemption would be more transparent and efficient than requiring individual exemption applications.

The third exemption applies where electrification is not lawful or requires augmentation of a transmission or distribution system beyond a basic connection service. However, this fails to explicitly cover cases where the cost of upgrading household electrical wiring is prohibitively high. While the RIS suggests that homeowners may seek an exemption on this basis, it does not provide clear guidance on what constitutes an 'unacceptably high' cost. More importantly, the RIS does not address how broader grid constraints will be managed, particularly in older suburbs where the electricity network may not have the capacity to support widespread household electrification.

This leads to a fundamental unanswered question: Who pays for local grid upgrades when multiple households need enhanced electrical infrastructure to comply with the policy? The RIS ignores this issue entirely, even though significant grid reinforcement may be required in some areas. This could leave homeowners facing tens of thousands of dollars in unexpected upgrade costs, or worse, being told they cannot comply simply because the local network cannot accommodate additional load.

- The RIS fails to define when the cost burden of upgrading local substations, transformers, or distribution networks shifts from individual homeowners to the broader energy system. If compliance with the RIS forces significant local grid augmentation, it remains unclear whether these costs will be borne by homeowners, network operators, or the government.

- By failing to address this, the RIS exposes a major flaw in its implementation strategy, one that could leave many households financially stranded—facing either unaffordable infrastructure upgrades or regulatory non-compliance.

'Genuine' Consultation

At the outset of the latest round of consultation, the Victorian Government made clear its commitment to "genuine consultation." This framing is deeply concerning, as it implies that previous consultations—particularly those informing the Victorian Gas Substitution Roadmap (VGSR)—were not legitimate.

Recent comments from the Victorian Government have only heightened these concerns. In an article published by the ABC on Friday, February 28, titled *"Global gas lobby tries to hamper Victoria's electrification efforts by stoking fear, researchers say",* the Victorian Government made several misleading claims about the legitimate concerns raised by industry, commercial businesses, and households.

Most troubling is the Government's acknowledgment that it has deliberately disregarded industry input, as evidenced by its own statements:

> *"Government ministers regularly meet with community and stakeholders, but our focus is on slashing Victorians' power bills, not on lifting the gas industry's profits."*
>
> *"Meetings with gas industry representatives did not result in changes to this policy—listening to Victorians did. That's why we've made it clear that Victorians can keep cooking with gas, while we support those who want to make the switch to all-electric."*

After two years of consultation, the Government appears to have now made it clear that industry concerns have not influenced policy decisions. This undermines the credibility of the process, which should be a meaningful opportunity to consider all perspectives and refine policies accordingly. If key stakeholders are excluded, consultation becomes a formality rather than a genuine engagement.

This approach is not just a concern for the gas industry but for Victoria's broader energy and economic future. A well-managed energy transition requires an evidence-based approach that draws on industry expertise to ensure reliability, economic stability, and practical implementation. Dismissing this input suggests consultation is being treated as a box-ticking exercise rather than a way to develop sound policy.

The consequences are significant. Victoria's energy transition is complex, and failing to engage meaningfully with industry risks undermining affordability, supply security, and a smooth transition for businesses and households.

APGA remains committed to working with the Government in good faith. However, for consultation to be meaningful, the Government must show it is genuinely listening and incorporating expert input. Without this, trust in the process will continue to erode, making future engagement more difficult. Consultation should not be about reinforcing political narratives but about delivering real outcomes for Victorians.

Consultation questions

The Victorian Government seeks advice and input from all stakeholders regarding:	**APGA response**
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.	APGA refers to the Gas Appliance Manufacturer's Association of Australia (GAMAA)'s response for this question.
2. Any data related to asset lives of both gas and electric appliances in both residential and commercial settings.	APGA refers to the Gas Appliance Manufacturer's Association of Australia (GAMAA)'s response for this question.
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.	APGA refers to the Gas Appliance Manufacturer's Association of Australia (GAMAA)'s response for this 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.	APGA refers to the Gas Appliance Manufacturer's Association of Australia (GAMAA)'s response for this question. However we also note that centralised gas boiler services are a common feature of many apartment buildings, and many will not have plant room space for these to be efficiently or logistically electrified.
5. Any data available related to the administrative time required by residential homeowners to assess alternative options for the purchase and installation of an electric appliance and any additional infrastructure such as switchboard or connection supply upgrade.	
6. Any data available related to the purchase and installation costs of electrifying residential buildings, including ancillary costs for labour, switchboard, and supply connection upgrades.	

7. Any data available related to the proportion of homes which require switchboard, supply connection or broader wiring upgrades.	
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.	
9. Any data available related to the prevalence of small and large buildings in Victoria for relevant commercial sectors	
10. Any data available related to the prevalence of commercial kitchens in Victoria and costs associated with electrifying or utilising LPG in commercial and non-commercial kitchens in across various commercial sectors.	
11. Advice on the key cost factors and considerations that may impact the cost of electrifying new or existing buildings in commercial settings that have not been identified.	Retrospective planning permissions where significant building modifications are required
12. Any data available related to the administrative time and associated cost of planning for and implementing electrification in commercial buildings.	
13. Any data available related to barriers to adoption of RCACs and considerations required around potential exemptions.	
14. Any data related to historical or future forecasted improvements in the energy efficiency and/or cost of electric and gas appliances	
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 constraint.	
17. Differences in timing and cost of maintenance of electric and gas appliances in both residential and commercial sectors.	

18. The 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.	ENA has commissioned LEK to examine this question, and APGA defers to this comprehensive research. In summary, the impact on the cost of owning and operating the gas network will be significant, and these costs are significantly understated in the RIS. Where possible and permitted by regulators, these costs will be passed directly onto consumers, and increasingly this will be onto the customer base this RIS is theoretically attempting to protect - industrial gas users. If these costs cannot be passed onto the customer base, this will provide a strong case for operators to abandon the asset, to the detriment of all Victorians.
19. Any data available related to potential disproportionate impacts on key stakeholder groups or demographics as a result of the proposed regulation.	The potential negative impacts on certain stakeholder are well documented. Research in 2023[21] specifically considered the equity implications of disconnecting Victorian homes from gas and converting to all-electric. Researchers particularly invited participation from households who had received energy-related support and lower-income households from Melbourne's Burmese community. Most of the respondents used gas (88%), reflecting its prevalence in Victoria. Amongst the surveyed households, finance and tenure were key barriers. Households with financial barriers to electrification may be unable to prioritise electrification "even if they have the necessary information and inclination." Also in 2023, the Grattan Institute's *Getting off gas* report also underlined the significant equity issues in electrification for low-

[21] Chandrashekeran, S, de Bruyn, J, Bryant, D & Sullivan, D 2023, *Enabling electrification: addressing the barriers to moving off gas faced by lower-income households*, Australian Research Council Centre of Excellence for Children and Families over the Life Course & the Brotherhood of St. Laurence, https://www.bsl.org.au/research/publications/enabling-electrification/ ; see also Chandrashekeran, S, de Bruyn, J, Sullivan, D & Bryant, D, 2024, Electrification and lower-income households in Australia: An integrated analysis of adaptive capacity and hardship, *Energy Research & Social Science* 116, https://www.sciencedirect.com/science/article/pii/S2214629624002792#s0020

	income households: given that gas appliances are typically cheaper than electric alternatives, "low-income households are likely to struggle to find the money to replace a broken gas appliance, let alone the extra cash required to upgrade it to an efficient electric alternative."[22] Beyond low-income households, the report identifies additional challenges for multi-unit buildings, which can be tricky to electrify due to communal water or space heating services, and accompanying spatial logistics.
20. The need for hardship exemptions for existing residential buildings in recognition of issues that may be faced by particular stakeholder groups.	
21. The key costs and considerations that may be a barrier to electrifying new commercial buildings.	
22. How the proposed regulations may impact small businesses due to limited resources to interpret compliance requirements, or to keep pace with regulatory changes.	
23. Any data that is available on stakeholders who may be particularly affected by the preferred option and where identified: a. proposed exemptions to address this acute impact. b. proposed delays to the commencement of the regulations to enable more time for adjustment	
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.	

[22] Grattan Institute, 2023, *Getting off gas: why, how, and who should pay*, https://grattan.edu.au/wp-content/uploads/2023/06/Getting-off-gas-why-how-and-who-should-pay.pdf

26. How the proposed regulations may impact competition in wholesale gas production and potential adverse impacts on consumers, including any data or analysis indicating the scale of potential consumer impact.	
27. How the proposed regulations may impact the provision of gas network services and potential adverse impacts on consumers, including any data or analysis indicating the scale of potential consumer impact.	APGA defers to the expertise of AGIG, MultiNet and AusNet and for this question, as the owners of Victoria's gas distribution networks. However, these impacts are already well-acknowledged in the literature. A 'death spiral' will result where the costs of maintaining the network are spread amongst fewer and fewer customers, where those remaining on the network are unable to transition or can least afford to do so. Gas network operators are allowed to recoup capital investment over the expected lifespan of the assets. This regulation may force operators to bring forward the expected economic lifespan of the networks, and hence bring forward the capital investment. This will result in even higher network costs for those remaining customers.
28. Any data related to potential impacts on their business industry or sector, including disproportional impacts on small businesses or market competition.	APGA defers to the expertise of VCCI for this question.
29. Timing and potential need for any transitional arrangements to ensure the implementation of the regulations occurs smoothly.	
30. The proposed exemptions in the exposure draft of the Regulations and whether there is need for additional exemptions.	The proposed exemptions are limited to • Situations where there is insufficient space available in the building or any occupiable outdoor area. This is simultaneously too broad and narrow to not provide installers sufficient guidance on what is permitted under the Bill. It leaves up to installers to judge what is considered 'sufficient space'. In the case of individual gas instantaneous hot water services in an apartment, the installer may judge small outdoor balconies as 'sufficient space' to install a heat pump hot water service, depriving residents of the amenity of that area.

	• Class 2 or Class 10b buildings which have centralised gas hot water or heating systems. This is appropriate given the space and logistical challenges presented by large apartment buildings with centralised services which may be practically impossible to replace. • Situations where replacing the gas appliance with an electric appliance is not lawful or requires augmentation of a transmission system or system to provide more than a basic or standard connection service. The exemption as drafted also does not specifically encompass situations where the costs of upgrading electrical wiring at a property are unacceptably high – though the RIS states home owners may seek an exemption from the proposed regulation under this. The implications of this may not have been more broadly considered by the RIS, which is concerning. Particularly in older suburbs, the [local distribution network?] may not have sufficient capacity to accommodate every household electrifying and increasing their electrical load on the grid. At the point where a local upgrade is required to accommodate this – who pays?
31. The proposed commencement date of the regulations and whether there is a need for transitional arrangements to support supply chain or workforce transition.	The potential start date of 2026 flagged in the RIS is an extraordinarily short timeframe for a regulation with significant impacts on industry. The Victorian Government should aim for a commencement date no sooner than the expected closure of its last coal-fired power station or the 95% renewable energy generation target of 2035, whichever is sooner. This would provide sufficient time for industry to adjust and a sufficient workforce transition, and would avoid resulting in significant increases in emissions due to increased reliance on coal-fired generation.

32. Relevant data sources that may be used in the evaluation of the proposed regulation.	