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5 December 2024

Dear Ms Molyneux and Mr McKeegan,

REGULATORY IMPACT STATEMENT FOR THE BUILDING AND PLUMBING AMENDMENT REGULATIONS 2024

I would like to thank your staff at the Department of Energy, Environment and Climate Action and the Department of Transport and Planning (the Departments) for preparing the Regulatory Impact Statement (RIS) for the Building and Plumbing Amendment Regulations 2024 (the proposed Regulations).

As you know, the Commissioner for Better Regulation is required to provide independent advice on the adequacy of the analysis provided in all RISs in Victoria. The Victorian Guide to Regulation (VGR) explains the Commissioner's role in more detail.

A RIS is deemed to be adequate when it contains analysis that is logical, draws on relevant evidence, is transparent about any assumptions made, and is proportionate to the proposal's expected effects. In determining adequacy, the Commissioner does not assess the merits of the proposed approach or other options. The RIS also needs to be clearly written so that it can be a suitable basis for public consultation.

I am pleased to advise that the final version of the RIS received on 5 December 2024 meets the adequacy requirements set out in the *Subordinate Legislation Act 1994*.

Background and problems

In the RIS, the Departments note that the Victorian Government has legislated targets to cut the state's greenhouse gas emissions (GHG) and achieve net zero emissions by 2045.

The RIS is focused on residential and commercial gas use.¹ Industrial applications of gas such as generating heat in manufacturing processes are not the focus of the RIS although it considers potential indirect impacts to industrial users. The Departments explain that Victoria accounts for two thirds of Australia's national household and commercial gas usage and that 16 per cent of Victoria's greenhouse gas emissions are from gas usage, with the largest source of emissions being from direct combustion in residential properties, businesses and industries, followed by fugitive emissions from leaks or venting of gas throughout its lifecycle.

The Departments explain that 'electrifying' residential and commercial gas appliances, which means replacing gas appliances with electric appliances at end of life, is a cost-effective way to reduce emissions because electric appliances:

- are already commercially viable and produced at scale;
- are typically more energy efficient than gas appliances; and
- will be powered by less emissions intensive electricity generation over time.

The Departments acknowledge that some properties would incur additional upfront costs to electrify beyond the typical purchase and installation costs of appliances. For example, a switchboard upgrade to accommodate increased electric load or an application to increase connection capacity from the electricity network may be needed.

The Departments explain that electrifying buildings can mitigate three key problems associated with continued gas use:

- a) rising energy costs for consumers — while electricity is more expensive on a per joule basis, electric appliances generally have lower running costs than gas appliances because they are significantly more energy efficient (for example, an electric heater generally requires less energy to heat the same room to a particular temperature as an equivalent gas appliance;²
- b) energy security and reliability risks — the Australian Energy Market Operator (AEMO) forecasted a gas supply shortage in Victoria from 2028 due to a reduction in offshore gas production capacity and planned closures of Longford gas plants.

¹ The RIS considers regulatory options concerning non-renewable gases used for heating, cooking, electricity generation and as a chemical feedstock, which are referred to as 'gas' in this letter. In some circumstances, non-renewable gases such as bio-methane and hydrogen can also be used for these purposes.

² See Page 6 of the RIS

Electrification reduces gas demand, which is expected to assist in mitigating risks of gas shortages;³ and

- c) higher emissions — electrifying appliances is expected to reduce emissions due to better operating efficiency than gas alternatives and operating them is expected to emit progressively less GHG over time as electricity generation becomes less emissions intensive.

The Departments explain that the Victorian Government released its Gas Substitution Roadmap in July 2022 (the Roadmap), which outlines a pathway for Victoria to mitigate the issues above.⁴ The Roadmap is supported by other State Government initiatives to encourage electrification, including:

- a) changes to the Victorian Planning Provisions (VPP), which require all new homes requiring a planning permit to be all-electric from 1 January 2024;
- b) the Victorian Energy Upgrades (VEU) Program, which incentivises households and businesses to upgrade to more energy efficient appliances, which are typically electric appliances;
- c) proposed requirements for gas heating and hot water appliances in residential rental properties to be replaced with electric appliances as part of the proposed Minimum Energy Efficiency Standards Regulations, currently under consideration through a separate RIS process; and
- d) a requirement that all new Victorian Government buildings that had not reached the design phase in July 2023, be built as all-electric.

The initiatives listed above are part of the 'base case' used by the Departments to analyse the impacts of options in the RIS (discussed in more detail below).

This RIS analyses options to amend both the Building Regulations 2018 and Plumbing Regulations 2018, so that in certain circumstances building surveyors cannot issue building permits for new buildings proposing to connect to reticulated gas and plumbers cannot install a gas appliance or replace one with another gas appliance.

Objectives

The Departments explain that the overall intent of the proposed Regulations is to support and accelerate the pace of electrification of new and existing buildings in Victoria with the objectives of:

- reducing energy bills for households and businesses;
- addressing forecast gas shortfalls; and
- reducing GHG emissions.

³ Ibid, Page 7

⁴ Available at: <https://www.energy.vic.gov.au/renewable-energy/victorias-gas-substitution-roadmap>

Options

The Departments analyse four options to promote the electrification of residential and commercial buildings. The options vary based on whether they apply to new buildings only, or also include existing buildings, as well as whether they apply to residential buildings only or also include commercial buildings.

The options analysed by the Departments in the RIS are:

- **Option 1:** *Electrification of all new residential and new commercial buildings*
 - No new residential and commercial buildings will be permitted to connect to the reticulated gas network, meaning only electric appliances can be used.⁵
- **Option 2:** *Electrification of all new and existing residential buildings and all new and existing commercial buildings, excluding existing commercial kitchens*
 - In addition to the requirements under Option 1, gas appliances in existing residential and existing commercial buildings must be replaced with electric appliances once they reach end of life.
 - Existing commercial kitchens will be exempt from this requirement, but new commercial kitchens will be required to be built as all-electric.
- **Option 3:** *Electrification of all new and existing residential buildings (excluding existing residential cooking) and all new commercial buildings*
 - All existing residential gas hot water and heating systems must be replaced with electric systems once they reach end of life. All new residential and commercial buildings must be built as all-electric.
 - Existing residential cooking and existing commercial buildings are excluded from the requirement to electrify.
- **Option 4:** *Electrification of all new and existing residential buildings*
 - Only new and existing residential buildings are required to electrify. The requirement to electrify extends to all residential gas appliances, including cooking.
 - All new and existing commercial buildings will be exempt from the requirement to electrify.

The Departments explain that industrial gas use (e.g. for manufacturing processes), commercial kitchens in existing commercial buildings and Liquefied Petroleum Gas (LPG) usage are outside of the scope of all options analysed in this RIS.

The Departments explain that non-regulatory options were considered to achieve the objectives. These options included supporting the development of renewable gases to be used in the reticulated gas system, as well as education campaigns, mandatory

⁵ Reticulated gas network refers to the network of pipelines that distributes gas to homes and businesses.

disclosures about energy efficiency of buildings and financial incentives to support electrification. The Departments state that those measures are important and will support the Victorian Government's goals, but would not sufficiently address potential gas shortfalls or meet the government's legislated GHG emissions reduction targets. The Departments therefore explain that only options which will require the mandatory electrification of buildings have been analysed in detail in the RIS.

Impact Analysis

The Departments compare options using a cost-benefit analysis (CBA). Options are compared to a base case involving no additional building electrification requirements beyond those already in place or committed to. The base case includes the following existing government policies and assumptions:

- VPP requirements for new residential properties requiring a planning permit to be built as all-electric;
- Proposed Minimum Energy Efficiency Standards for Rental Homes requiring the replacement of gas heating and hot water with electric appliances at end of life;
- Electrification requirements for new Victorian Government buildings;
- Higher minimum energy efficiency standards introduced to the National Construction Code (NCC) in 2022, but not NCC 2025 standards (which are not finalised);
- Amendments to the Plumbing Regulations in November 2023 to facilitate the installation of efficient electric hot water systems;
- Energy efficiency incentives available under the VEU scheme; and
- An assumption that some voluntary uptake of electric appliances will take place without further government intervention, based on consumer preference studies.

The Departments explain that the impacts in the CBA were modelled based on several key assumptions and data sources. The stock of owner-occupied residential properties in relevant building classes was estimated from Australian Bureau of Statistics (ABS) census data adjusted for renovation and demolition activity, and historical growth rates. The total floor area of different commercial building classes was derived from the Commercial Buildings Baseline Study 2022 (DCCEEW). Appliance numbers were estimated based on data from consumer surveys with asset life estimates derived from consumer surveys, VEU specifications, consultant reports and warranty data. Commercial use was estimated using survey data from the Commonwealth Department of Climate Change, Energy, the Environment and Water.

The Departments explain that the CBA estimates the impact of options over both 10 and 20-year analysis periods based on the following key costs and benefit categories:

Costs

- the purchase and installation of appliances, including expenditure on supporting infrastructure and works where required (e.g. switchboard and wiring upgrades);
- decommissioning of gas appliances, including abolishment of incoming gas lines;
- administrative costs for homeowners and businesses in understanding and complying with obligations, such as obtaining quotes and organising works; and
- government costs in enforcing and monitoring the program.

Benefits

- reduced energy expenditure;
- avoided GHG emissions;
- avoided health cost of air pollution; and
- avoided gas network construction costs.

The Departments estimate the ten-year costs and benefit metrics for each option as:

Option	Costs (\$billion)	Benefits (\$billion)	NPV (\$billion)	BCR
1	2.2	2.8	0.574	1.26
2	13.7	15.6	1.8	1.13
3	5.8	10.9	5.0	1.85
4	5.6	9.8	4.2	1.74

The costs and benefits are generally estimated to scale over time for the 20-year analysis, with the ranking of BCR and NPV metrics the same for both analysis periods.

The most significant cost category identified in the CBA is appliance upgrade and installation costs ranging from \$2.0 billion under Option 1, to \$11.7 billion under Option 2. The most significant benefit categories are:

- avoided energy costs of \$791 million for Option 1 and \$5.8 billion for Option 2; and
- avoided emissions of \$573 million for Option 1 and \$4.5 billion for Option 2.

The Departments conduct risk and sensitivity analysis to highlight any variables or assumptions for which uncertainty could drive differences between modelled impacts and actual outcomes. This analysis identifies energy price assumptions as a key factor in the modelling estimates. A scenario involving higher gas prices and constant electricity prices is assessed as having the greatest potential to increase benefits, by as much as \$4.1 billion for Option 2. An alternative scenario involving relatively high electricity prices would reduce estimated benefits by up to \$2.2 billion for Option 2. Higher than anticipated switchboard and supply upgrade costs also have the potential to significantly reduce benefits by up to \$1.6 billion for Option 2.

The Departments explain that the sensitivity to changes in key parameters varies between options, noting that Option 3 is less sensitive than Option 2, and Option 3 still has a positive NPV and BCR under each scenario tested in the sensitivity analysis.

The Departments explain that the CBA assesses the direct costs and benefits of the proposed options but does not capture any associated market or economy-wide effects.

The Departments therefore supplement the core CBA analysis with

- energy market modelling;
- computable general equilibrium (CGE) modelling designed to capture any changes to overall economic output in Victoria;
- analysis of labour market impacts; and
- distributional analysis of the impacts of the preferred option.

Using the estimates for electricity demand under each option as inputs into electricity market modelling does not highlight significant market impacts. It identifies that increased electrification under the options will place some upward pressure on both overall and peak electricity demand, with the greatest relative increase raising peak winter demand by around 9 per cent for Option 2. The Departments explain that higher electricity demand will necessitate moderate additional investment in electricity transmission and distribution infrastructure. In turn, this would result in small increases to electricity tariffs, peaking at around 3 per cent for Option 2. The Departments explain that increased electricity consumption would lead to greater usage of gas-powered electricity generation, but overall gas demand would still be lower overall due to reduced reticulated network usage.

Gas market analysis indicates that options involving significant customer disconnections from the reticulated network are likely to contribute to higher tariff fees for remaining users. The Departments explain this is because network maintenance costs would need to be recovered from a smaller user base. They highlight this impact is most acute for Option 2, peaking at about an 80 per cent compared to about 40 per cent under Option 3 due to continued residential cooking contributing to a more gradual disconnection rate.

The RIS notes that the likely impacts on industrial gas users such as manufacturing and agricultural facilities are uncertain. Although the options would not apply directly to these users, gas costs for these businesses would be subject to anticipated increases to gas network tariffs. The RIS explains that the gas market analysis is subject to a range of assumptions which may result in uncertainties of outcomes in the base case, therefore the net effect of the proposed regulations may vary under different possible scenarios in the wider market.

The Departments explain that the CGE analysis indicates that overall economic output would increase proportionally with the scale of electrification requirements. Industries like gas distribution are expected to contract, offset by greater expansion in industries

such as clean energy. The Departments note that the options would further increase already high demand for some skills. The RIS refers to Jobs and Skills Australia modelling that highlights potential shortages of occupations such as electricians without additional policy interventions. However, based on sensitivity analysis in the RIS, Option 3 would continue to deliver net benefits even if labour costs were 25 per cent above the core estimate.

Based on the overall impact analysis, the Departments identify Option 3 as preferred. Option 3 requires electrification of all new and existing residential buildings and new commercial buildings but allows new gas appliances for residential cooking in existing homes. The Departments explain:

- Option 3 is expected to achieve a high ratio of benefits to costs and allow a greater degree of choice to consumers relative to other options;
- Option 3 will result in a significant reduction for both gas demand and GHG emissions (to a lesser extent than Option 2);
- the modelled benefits of Option 3 are less sensitive to changes in key parameter values when compared to Option 2, meaning that the estimated net benefits are more likely to be realised if future circumstances differ from core assumptions; and
- Option 3 is expected to result in lower increases to both gas and electricity tariffs than Options 2 or 4 due to more gradual disconnections from the gas network.

The Departments analyse the distributional impact of the preferred option and note that survey data suggests that low-income households and the elderly are more likely to have gas appliances. The Departments also note that:

- appliance replacement costs would still be incurred under the base case;
- some electric appliances are cheaper to install, but the upfront costs of electrification can vary; and
- ongoing cost savings due to lower running costs of electric appliances will be of relatively greater worth to lower income households.

The Departments explain that they are seeking feedback on potential hardship exemptions from electrification requirements. The criteria currently proposed in the RIS are based on the physical characteristics or regulatory classification of the property, such as space constraints, building class or heritage status, in addition to high electrical upgrade costs. The Departments seek feedback on these proposed criteria, and whether additional exemptions are required.

Implementation and Evaluation

The RIS outlines amendments to the Building Regulations 2018 and the Plumbing Regulations 2018 to prevent:

- building surveyors issuing building permits for new buildings (excluding industrial) proposing to connect to reticulated gas; and

- plumbers from installing or replacing gas space or water heating appliances in existing residential buildings.

The Departments state that the commencement date for the proposed Regulations has not been finalised, but anticipate implementation of the proposed Regulations in early-mid 2025 following review of submissions, with electrification requirements coming into effect in 2026. The Department of Transport and Planning (DTP) commits to working with the Victorian Building Authority (VBA) and Energy Safe Victoria (ESV) and will oversee the introduction of the proposed Regulations. DTP will collaborate with the Department of Energy Environment and Climate Action on engagement with industry, businesses and consumers during the transition period of the implementation of the new requirements.

The Departments note that there are several circumstances in which electrification to existing homes may not be viable, for example due to space constraints, the centralised provision of heating or hot water services in apartment buildings and conflict with other regulatory requirements such as heritage provisions. They explain that exemption decisions (allowing a gas appliance to be installed) are intended to be determined by a plumber rather than through an administrative process requiring an application.

The Departments note that the proposed Regulations are considered high impact according to the VGR and commit to undertaking a mid-term evaluation of the proposed Regulations in 2027-2028. This evaluation is intended to be incorporated into the broader review and remaking of the Building Regulations and Plumbing Regulations, which are both due to sunset in 2028.

The Departments explain that the mid-term evaluation will involve developing:

- key evaluation questions;
- Intended outcomes over the short, medium and long term;
- key performance indicators (KPIs) corresponding to intended outcomes; and
- a data collection strategy including baseline data pre commencement.

They identify the following data sources to evaluate the proposed Regulations:

- plumbing compliance certificates from the VBA and Certificates of Electrical Safety from ESV;
- the number of properties connected to the reticulated gas network reported by the Australian Energy Regulator (AER);
- gas demand in Victoria reported by the AEMO; and
- targeted stakeholder consultation with industry peak bodies such as the Master Builders Association.

The RIS, seeks stakeholder feedback on additional data sources to support evaluation.

The Departments note that DTP will be responsible for:

- evaluating compliance with the proposed Regulations (supported by the VBA);
- conducting stakeholder consultations to gather information relating to the electrification requirements; and
- monitoring exemption applications, particularly any impact of exemptions on the uptake of electric appliances compared with modelled estimates.

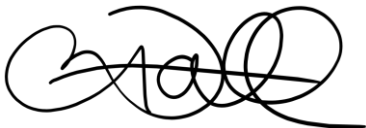
The Departments also commit to monitoring and managing potential adverse impacts on consumers, including identifying data sources such as applications for energy bill hardship relief and consulting with charities offering assistance to Victorian households.

The Departments will use the RIS to invite stakeholders to provide input on the impacts of the proposed Regulations, with consultation open for until the 28 February 2025. The VGR explains that public consultation on a RIS provides additional opportunities to:

- acknowledge and seek to fill gaps in knowledge;
- test assumptions and conclusions;
- reach a broader range of stakeholders;
- pick up on issues that may have been missed; and
- validate and improve on implementation planning and the evaluation strategy.

Should you wish to discuss any issues raised in this letter, please do not hesitate to contact my office on (03) 7005 9772.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'C Wall', with a stylized, cursive script.

Cressida Wall

Commissioner for Better Regulation