Department of Energy Environment and Climate Action
Submitted via Engage Victoria

22 April 2025

Re: Victoria's 2026-30 Climate Change Strategy

The Energy Efficiency Council (EEC) welcomes the opportunity to contribute to Victoria's 2026-30 Climate Change Strategy.

The EEC is Australia's peak body for energy management, with a membership of businesses, universities and governments working to guide Australia on the path to an efficient, prosperous net zero economy.

We commend Victoria on its ambitious emissions reduction targets, which set an example for the rest of Australia. Now Victoria must rapidly move to implement policies that deliver abatement commensurate with the targets and adapt to the impacts and climate change we cannot avoid.

Policies to improve energy management are unique in that they can both helping Victoria reduce its emissions *and* adapt to the impacts of climate change by increasing the resilience of buildings, industry and the energy system.

The EEC defines energy management as:

- **Energy efficiency:** Using less energy to achieve the same or better outcomes, such as using efficient appliances, insulation and draught proofing to keep our homes affordably warm in winter and cool in summer;
- **Fuel switching**: Substitution of appliances and equipment that use fossil fuels with renewable fuels or efficient electric options; and
- **Flexible demand:** A short- or long-term change in the time of energy use, often with benefits for the energy system (for example, better aligning demand with variable renewable generation).

Energy management is critical to ensure that homes and businesses can contribute to reducing GHG emissions and adapt to the future impacts of climate change, improving Victorians' health, wellbeing, and prosperity.

Decarbonisation

Improving the way Victoria uses energy through energy management must be a cornerstone of Victoria's climate strategy as it offers some of the best opportunities to decarbonise at least cost (for example, energy efficiency upgrades that reduce energy bills over time). Energy management is also key as Victoria moves beyond abatement opportunities in large point sources of emissions (such as coal plant retirements) to tackle harder-to-reach emissions sources spread across millions of homes and businesses.

To date, reductions in Victoria's energy sector emissions – the largest source of the state's emissions – have mainly been achieved on the *supply* side of the electricity system through coal plant retirements. This process will continue with the scheduled retirements of Yallourn

and Loy Yang A between 2028 and 2035 respectively. Alongside the electrification of the transport sector these changes to Victoria's electricity sector have important implications for the state's emissions reduction pathway:

1) Electricity sector abatement opportunities are almost exhausted, so cutting direct fuel combustion emissions is needed to continue reducing energy related emissions; and
2) Variable renewables' share of electricity generation is increasing, posing new challenges for the grid operator, particularly as transport electrifies.

In this context, actions on the traditional 'demand side' of the energy system will become more important than ever, namely electrification, flexible demand, and energy efficiency:

- Electrification: Electrifying homes, businesses, construction and agriculture will be critical to cut emissions associated with gas and diesel use. Gas use in Victoria's homes and commercial buildings is the highest in Australia and electrifying these buildings is possible at scale, now with technologies such as heat pump space and water heaters. A good example is 101 Collins Street, Melbourne, an 80,000m^2 building that electrified its operations in 2024, realising an 80% net reduction in energy use.[1]
- Flexible demand: As Victoria continues to deploy variable renewables such as rooftop solar, when electricity is used is becoming more important. Already, AEMO is grappling with issues such as low minimum operational demand in the middle of a winter's day, threatening the stability of the grid. This requires our buildings, factories and vehicles to better calibrate their electricity demand to align with periods of high variable renewables, using technologies such as building energy management systems and smart appliances.
- Energy efficiency: The two changes above will be best implemented, and at least cost for the energy system, by applying a principle of 'energy efficiency first'. For example, energy efficient appliances, equipment and vehicles will keep electricity demand manageable as Victoria electrifies the built environment, industry and transport sectors. Similarly, well insulated homes permit pre-heating and cooling in the middle of the day when solar is available, supporting demand shifting, whereas poorly insulated homes do not.

There remains considerable untapped potential in homes, businesses, and industrial sites across the state to reduce emissions through energy management – often while lowering energy bills for Victorians in the process. Analysis by Climateworks Centre for the EEC suggests electrification and energy efficiency improvements would deliver average emissions savings of around 7.5 Mt CO_2-e per year for Victoria between now and 2035.

Much of the emission reductions stem from cutting gas use in buildings, where efficient electrification could reduce Victorian gas use by 33 PJ per year on average[2] between now and 2035, helping cut emissions but also support energy security in industrial sectors where gas substitution options are nascent. There is a significant opportunity to improve the energy efficiency and net zero compatibility of Victorian homes, which contribute 23% of the state's annual greenhouse gas emissions.[3] Half of Victorian homes were built before energy performance standards were introduced,[4] with many more built to standards much lower than those required by today's National Construction Code (NCC).

[1] A. G. Coombs, 101 Collins Street Melbourne, https://www.agcoombs.com.au/our-experience/101-collins-street/
[2] Based on unpublished Climateworks Centre analysis for the EEC, currently in draft form.
[3] https://www.sustainability.vic.gov.au/research-data-and-insights/research/state-of-sustainability-report/state-of-sustainability-report-2024/housing-thermal-quality-and-energy-efficiency-2
[4] Sustainability Victoria, Victorian homes to help power our energy transition, 2024.

The EEC supports accelerating the introduction of policies currently being explored by the Victorian Government, including:

- Strengthening the Victorian Energy Upgrades program to deliver emissions reductions from fossil gas and other fossil fuels. Introducing new methods to change the time of electricity use and increase storage should also be prioritised to support a higher penetration of variable renewables. Reforms to the VEU should also be made to support industry sector decarbonisation, particularly the Project-Based Assessment (PBA) method; currently, uptake of the PBA method is low for several reasons[5].
- Regulations to phaseout gas use in Victoria's buildings. The EEC supports phasing out gas use in new and existing commercial and residential buildings[6].
- Minimum energy performance standards for rental properties.

We would also encourage the Victorian Government to expedite the development of concrete policies to reduce emissions from government operations, to deliver direct emissions reductions from government operations (beyond reductions in Scope 2 emissions via purchases of renewable electricity). We note that the Greener Government Buildings program provides $20 million per year in finance but given the scale of the retrofits required, this should be scaled up significantly. Alongside this, regulatory requirements for government procurement could also make a substantial impact. Introducing such measures would have spillover benefits by catalysing the market for low-emissions products and services, as demonstrated in other jurisdictions.

For example, the ACT's target for net zero emissions in ACT Government operations by 2040 is supported by a Zero Emissions Government Fund, which provides government agencies with access to interest-free loans for energy efficiency and emissions reduction projects.[7] Alongside this, requirements that all insulation works are carried out by EEC-certified insulation installers has contributed to a strong increase in certified insulation installers in the ACT, where there are now 59 certified installers for a population of 475,000, compared with just 10 certified installers for a population of 7 million in Victoria.[8]

Resilience

If global temperatures continue to increase, in the 2050s Victoria may experience double the number of very hot days, as well as longer fire seasons with double the number of high fire danger days.[9] As the Victorian climate becomes warmer and drier, the thermal performance of homes will become increasingly important to the health of Victorians.

Around 50% of the state's homes were built before there were any requirements at all for energy performance.[10] As a result, at least half of the state's housing stock may be underperforming, contributing to higher household emissions and potentially posing risks to occupant health due to vulnerability to temperature extremes. While minimum standards were

[5] EEC, Submission to the Victorian Energy Upgrades Strategic Review, March 2025.
[6] EEC, Submission on the Victorian Building Electrification Regulatory Impact Statement, February 2025.
[7] ACT Government, Zero Emissions Government
[8] EEC, Find a certified expert - EEC Professional Certifications. The EEC notes that the Victorian Government has recently announced insulation is to be re-introduced into the VEU and that insulation installers will be required to be EEC certified. Government procurement policies would transform the market to a greater extent still.
[9] DEECA, Victoria's changing climate.
[10] Sustainability Victoria, Victorian homes to help power our energy transition, 2024.

introduced some time ago, it's only in recent years that the National Construction Code (NCC) has raised standards to a level more aligned with the future demands of climate change.

Despite the wide quality gap between newer builds and much of Victoria's existing housing stock, there are very few policy drivers in place to stimulate meaningful improvement in the quality and climate resilience of existing Victorian homes. That is why the policies listed above, which will help improve the *existing* building stock, are so important.

However, even buildings built to current minimum standards may be insufficient to shield their occupants from the impacts of climate change.

Recent modelling found that by 2070, a 7-Star home built in 2024 will face similar indoor temperatures during hot summer conditions as a 1.1-Star uninsulated home does today.[11] Meanwhile, if left unrenovated, that 1.1-Star home will face even more extreme indoor temperatures.[12] This is an important consideration for Victoria when planning for the climate resilience of the built environment now and into the future.

The Victorian Healthy Homes Program demonstrated how effective even modest energy performance upgrades can be in improving physical and financial outcomes, particularly for vulnerable households. The households subject to the program received modest energy performance upgrades, with a priority focus on energy efficiency and warmth.[13] Analysis indicated that these relatively minor upgrades had wide-ranging benefits, including healthcare savings of almost $900 per person over the winter period. In fact, for every $1 saved in energy, more than $10 was saved in healthcare.[14] Programs in New Zealand[15] and the UK[16] have shown similar results and demonstrate a clear link between thermal performance, energy efficiency, and many areas of health.

These results speak to the imperative of ensuring policy and regulatory settings continue to evolve to support future climate resilience, particularly for vulnerable Victorians living in the worst performing homes, who are disproportionately impacted by poor quality housing.

Improving the energy performance of the built environment and industry also makes a significant contribution to strengthening the climate resilience of the electricity grid by reducing demand at times of significant grid stress (such as peak demand periods on the hottest days in Summer). This includes improving energy efficiency – to permanently decrease demand – and harnessing the demand response capabilities of flexible loads in industrial facilities and buildings. For example, in late 2024, forecast blackouts were avoided in NSW thanks in part to a 'virtual powerplant' comprising 74 MW of buildings and industrial loads, a resource that remains largely untapped in the National Electricity Market. [17]

The costs of unlocking these benefits are recoverable through decreased expenditure on network infrastructure for peak periods: As efficient, flexible buildings and industrial plants

[11] Ibid.
[12] Ibid.
[13] Sustainability Victoria, The Victorian Healthy Homes Program Research findings, 2022.
[14] Ibid.
[15] Grimes et al., Cost Benefit Analysis of the Warm Up New Zealand: Heat Smart Programme Ministry of Economic Development, 2012.
[16] Gilbertson et al., 'Home is where the hearth is: Grant recipients' views of England's Home Energy Efficiency Scheme (Warm Front)', *Social Science & Medicine vol. 4 issue 4*, 2006, pp. 946-956.
[17] Renew Economy, 2024, 'In the end, the only blackouts were in the media headlines: But there has to be a better way to do this', https://reneweconomy.com.au/in-the-end-the-only-blackouts-were-in-the-media-headlines-but-there-has-to-be-a-better-way-to-do-this/

reduce the amount of energy our networks need to supply, the size – and cost – of the entire system can be lowered[18].

The EEC would welcome the opportunity to discuss these matters in more detail. Should you wish to speak further, please contact Rachael Wilkinson on 0413 352 286 or at rachael.wilkinson@eec.org.au.

Sincerely,

Jeremy Sung
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[18] EEC and ANZ, Putting energy efficiency to work, 2023.