

1 February 2023

To whom it may concern,

Thank you for the opportunity to make a submission to the National Energy Performance Strategy consultation paper.

Renew is a national, not-for-profit organisation that inspires, enables and advocates for people to live sustainably in their homes and communities. Established in 1980, Renew provides expert, independent advice on sustainable solutions for the home to households, government and industry.

We strongly welcome the development of a National Energy Performance Strategy. We believe that the right policies can significantly reduce the barriers to better energy performance, making the broader energy transition both faster and fairer.

This submission focuses on energy performance in the residential sector.

Improving the energy performance of Australia's homes is critical to ensuring that nobody is left behind in the energy transition.

Efficient, all-electric homes reduce cost of living, reduce emissions, improve health and comfort, and make the broader energy transition faster and cheaper. Our community wants better home energy performance. Research conducted by SEC Newgate on behalf of Energy Consumers Australia and Renew found that 74% of respondents supported policies to improve home energy efficiency, with only 4% and 6% of respondents expressing opposition for new and existing homes, respectively.¹

But without policy ambition, significant barriers risk holding Australian households back from better energy performance - locking in high costs, unnecessary emissions, and poor health outcomes.

Our recommendations:

- 1) Set targets for residential energy efficiency, subject to regular review
- 2) Invest in monitoring and data collection
- 3) Embed climate resilience in Strategy
- 4) Set target for increases to NCC Energy Budget stringency, including increase in 2025
- 5) End gas connections to new homes from 2025
- 6) Ensure best practice energy performance in new social housing
- 7) Embed energy efficiency in the electrification agenda
- 8) Implement minimum energy performance standards for rental homes
- 9) Invest in retrofits of existing social housing
- 10) Financial support for retrofits, with priority focus on low-income households
- 11) Implement mandatory disclosure of energy efficiency ratings at point of sale and lease
- 12) Resource consumer information and advocacy

¹ <https://renew.org.au/advocacy/new-research-shows-australians-want-more-efficient-housing/>

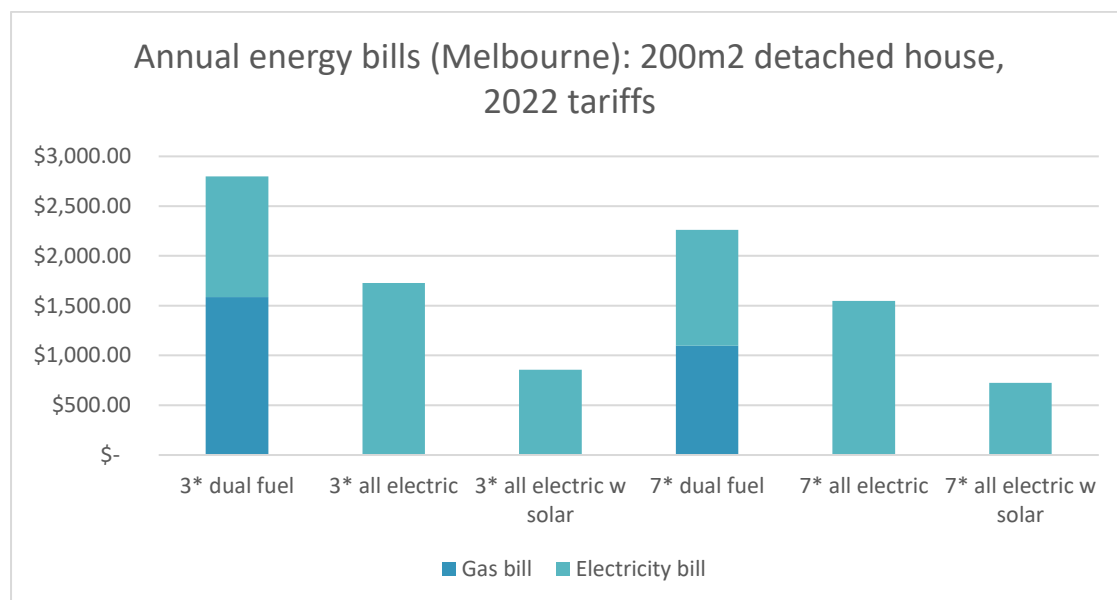
Background: the benefits of efficient, all-electric homes

Consultation question 2.2 (i): How can demand management and electrification support lowering energy bills and emissions?

All-efficient, all-electric homes are an important response to the cost of living pressures facing Australian households.

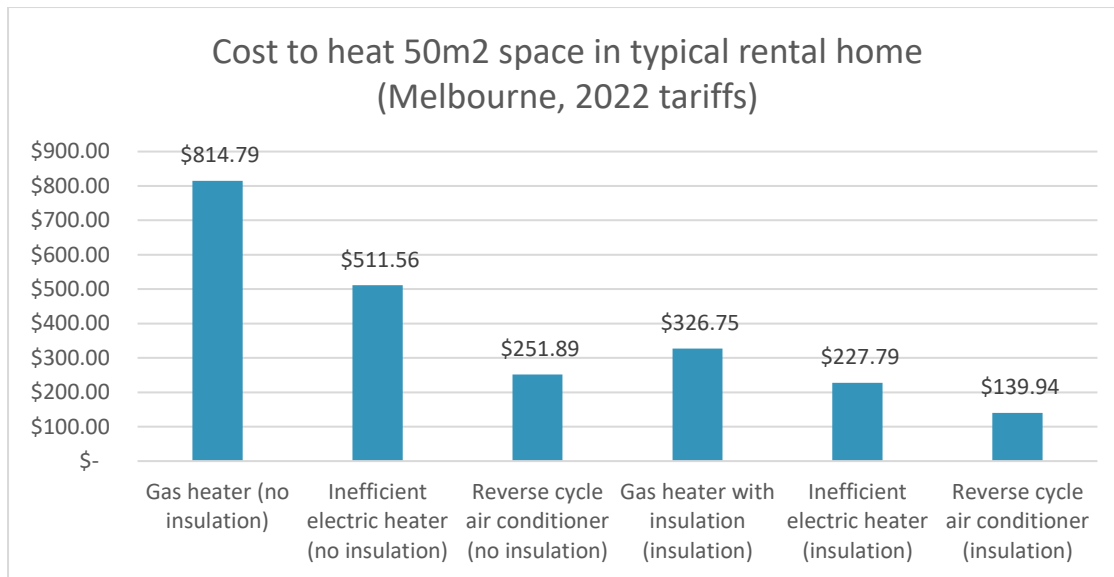
Renew's December 2022 report, *Limiting energy bills by getting off gas: all-electric homes after the 2022 energy crisis*², analysed the impact of projected tariff increases on households in all capital cities (except Darwin) depending on the home's energy efficiency and appliances. The report used existing retail tariffs, Treasury tariff projections and energy modelling using Renew's *Sunulator* platform. We here present some relevant findings from the report.

First, efficient, all-electric homes already save money. Annual bills in 2022 for a 7-Star all-electric home with solar were 69%-83% less than bills for a 3-Star home with gas appliances and no solar, depending on location. In the below Melbourne example, this equated to a saving of \$2,073 for the year.



For a typical rental home, the cost of heating one 50m2 space was similarly significantly reduced for homes with insulation and efficient reverse cycle air conditioners. In Melbourne, annual heating costs were reduced by 83% for homes with insulation and reverse cycle air conditioner, compared to no insulation and a gas heater.

² Full report available at <https://renew.org.au/research/limiting-energy-bills-by-getting-off-gas/>



Second, even though tariffs for both electricity and gas are projected to rise, all-electric homes can expect lower overall bill increases.

For a 200m² detached house in each location, we found that if Treasury projections of 56% electricity tariff increases and 44% gas tariff increases were realised, annual bills would rise by 2024 by the following amounts:

Increases to energy bills 2022 – 2024: total household energy bills

House type	Melbourne	Canberra	Brisbane	Sydney (West)	Sydney (East)	Hobart	Adelaide	Perth
Basic gas	\$1,376.63	\$1,705.40	\$1,374.58	\$1,518.95	\$1,231.72	\$1,939.81	\$1,901.84	\$1,444.01
Basic all-electric	\$967.28	\$1,159.84	\$1,002.09	\$1,285.00	\$1,018.18	\$1,015.08	\$1,461.44	\$1,188.12
Basic all-electric with solar	\$617.02	\$701.53	\$597.67	\$783.98	\$606.66	\$693.45	\$857.63	\$689.48
7* gas	\$1,134.27	\$1,310.33	\$1,251.87	\$1,293.31	\$1,117.90	\$1,360.16	\$1,519.84	\$1,222.63
7* all-electric	\$866.28	\$1,029.91	\$908.35	\$1,129.50	\$945.35	\$929.99	\$1,254.03	\$1,053.38
7* all-electric with solar	\$550.14	\$615.10	\$560.08	\$694.66	\$579.18	\$635.75	\$741.52	\$615.42

Similarly, the expected increase in the cost of heating a single room in a typical rental home was found to be less for those using an electric heater than a gas heater. Insulation (like other measures to improve thermal efficiency) significantly reduced projected bill increases.

Increases to cost of space heating in typical rental home 2022 -2024

Heating	Melbourne	Canberra	Brisbane	Sydney (West)	Sydney (East)	Adelaide	Hobart	Perth
Gas heater (no insulation)	\$358.51	\$502.19	\$73.80	\$234.99	\$130.91	\$458.70	\$949.68	\$216.93
Inefficient electric heater (no insulation)	\$286.47	\$448.60	\$60.78	\$258.75	\$139.55	\$407.35	\$441.57	\$181.50
Reverse cycle air conditioner (no insulation)	\$141.06	\$230.18	\$42.24	\$151.09	\$75.61	\$201.44	\$204.65	\$104.59
Gas heater with insulation (insulation)	\$143.77	\$219.84	\$49.00	\$106.74	\$54.22	\$177.23	\$356.17	\$93.97
Inefficient electric heater (insulation)	\$127.56	\$211.70	\$48.93	\$134.09	\$73.39	\$179.80	\$176.78	\$95.36
Reverse cycle air conditioner (insulation)	\$78.37	\$132.73	\$36.57	\$91.91	\$51.71	\$111.91	\$103.42	\$67.68

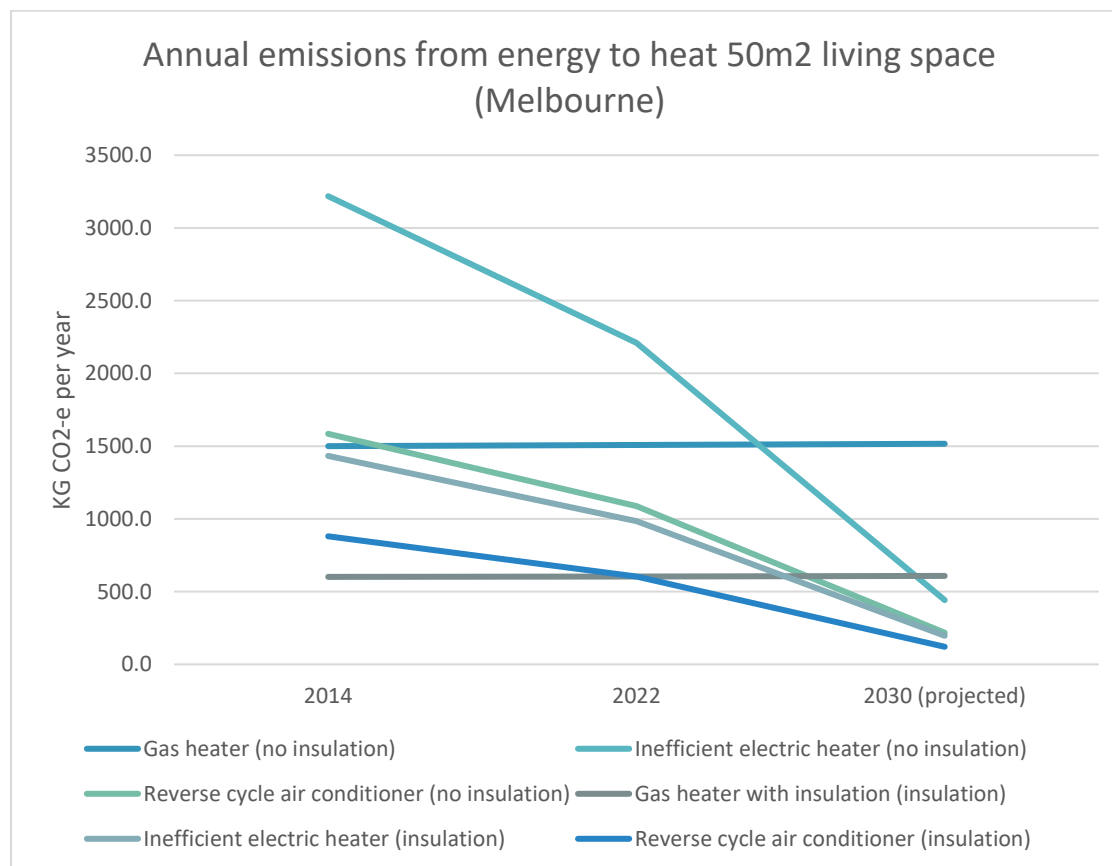
The primary reasons for lower bill increases for efficient, all-electric homes were 1) the higher efficiency of electric appliances such as reverse cycle air conditioners and heat pump hot water, and 2) the removal of daily gas supply charges for homes with no gas appliances. Furthermore, all-electric homes with solar benefit from self-consumption, further reducing bills. (This analysis does not include grid infrastructure costs, but we note that there are extensive energy performance co-benefits of onsite solar and all-electric homes: homes with solar and gas appliances export electricity to the grid at undesirable times for overall network performance, whereas combining solar with heat pump hot water can increase the utilisation of electricity in high generation / low consumption times.)

In short, not only are efficient, all-electric homes already reducing household energy costs, they leave residents better placed in the face of rising prices. The broader energy transition and shift from fossil fuels to renewables is likely to make gas even less competitive, locking in increasingly high costs for those households remaining connected to gas.

Third, measures to improve the energy performance of homes reduce emissions. Better energy performance reduces overall energy use and therefore emissions. Furthermore, the emissions intensity of electricity is falling as renewables replace fossil fuels, while the emissions intensity of household gas is expected to remain stable.

The following chart shows our analysis of the annual emissions from energy used for heating in a typical Melbourne rental home. Better thermal efficiency through insulation is an important factor in emissions. While gas was a relatively low-emissions fuel when electricity emissions were higher, in

2022 efficient electric appliances are already lower-emissions than gas; 2030 projections based on the AEMO Step Change scenario show gas to be significantly higher emissions than electric heating.



Further analysis and methodology details are available in the full report, which we have attached as a supporting document to this submission.

Recommendations

Governance

Recommendation 1: Set targets for residential energy efficiency, subject to regular review

Renew supports the setting of overall and sectoral targets for energy performance improvements, including for the residential sector.

A mechanism should be established to allow for the review and ratcheting of targets, in line with broader climate objectives, technical development and policy priorities. We recommend that the NEPS facilitates a five-yearly review of targets, with a view to increasing ambition over time. A more frequent review timeframe may be required for sectoral targets.

The recommendation of economy-wide and sectoral energy performance targets with a regular review mechanism is in line with a draft EU proposal, which requires member states to commit to a renovation action plan by 2025 and ratchet targets every 5 years. The proposal sets an objective of zero emissions new buildings by 2030 and full decarbonisation of the building stock by 2050, with

clear interim steps.³ This framework is a useful model for consideration in the National Energy Performance Strategy.

The review framework should be designed to include a formal and ongoing stakeholder engagement process and include consumer and community representatives.

Monitoring, evaluation and reporting of progress against the targets must be planned and resourced. We are concerned that any targets implemented without clear reporting or accountability mechanisms are unlikely to be effective.

Recommendation 2: invest in monitoring and data collection

Very little information is available on the energy performance of most Australian homes. The vast majority of homes built before the introduction of minimum energy efficiency ratings have never been assessed for energy efficiency; limited data from pilot or community-level projects is often extrapolated to assess the scale of energy efficiency projects. A better understanding of existing energy performance would have clear benefits and provide a baseline for the implementation of a National Energy Performance Strategy.

The CSIRO collects data on NatHERS certificates issued to new homes and some major renovations in the valuable Australian Housing Database. Maintaining this facility is critical to understanding the performance of Australian homes. However, significant gaps remain in our understanding of the performance of existing homes (particularly those built prior to the AHD and issuing of certificates), as well as whether the homes perform *as built* to the level modelled for NatHERS certification.

The development of the NatHERS In-home certification framework, the National Scorecard tool, energy efficiency disclosure schemes and minimum rental energy efficiency standards (see below) provide an important opportunity to fill this critical gap. A strategy should be developed to ensure that these or other tools are used to evaluate and report on the energy standards of existing homes, including gathering of data on certificate scores as in-home assessments are conducted or other appropriate measures. We note that in developing this strategy full consideration must be given to privacy and confidentiality.

Data should be collected in line with priorities in the Strategy for a clear, consistent, national ratings framework. Ensuring a consistent framework is important to enable a range of effective policy measures.

Recommendation 3: embed climate resilience in Strategy

A climate adaptation strategy for Australian homes should be resourced.

A key measure to consider is to ensure that ratings tools and related mechanisms should be updated to include future climate projections. Current NatHERS ratings are determined on a climate-specific basis, calculating the energy loads required for heating and cooling per square meter. The climate data used for calculating energy loads was updated with NCC 2022 from 1970-2005 to 1990-2015. This update is welcome. Nonetheless, the use of past climate data rather than predicted future climate data presents a significant risk for the climate resilience of Australian homes. Globally, the

³ [EUR-Lex - 52021PC0802 - EN - EUR-Lex \(europa.eu\)](#)

eight years from 2015 onwards have been the eight hottest years on record⁴, but these are not captured in the climate data used for NatHERS.

In a report modelling building design under future climate scenarios, Waverley Council found that by 2030 currently compliant dwellings would fail BASIX thermal comfort requirements, and by 2070 cooling energy loads required to maintain safe temperatures would increase by 308%.⁵

Alongside highlighting the critical need for emissions mitigation, this indicates that climate adaptation must be considered as a factor in residential energy performance, with a particular focus on thermal performance and its impacts on comfort and health. CSIRO projected climate data should be applied in NatHERS ratings tools.

Further policy development may be required to ensure that ratings tools and regulations adequately consider resilience to extreme weather events such as heatwaves, alongside average annual heating and cooling loads.

New homes

Renew welcomes the recent decision to introduce an Energy Budget and increase minimum NatHERS ratings for most new homes from 6 to 7 Stars in the National Construction Code. This is an important measure that will reduce energy loads for heating and cooling by around 25% and favour the installation of more efficient appliances. We furthermore welcome the framework of setting in the NCC a Performance Requirement for thermal efficiency alongside a Performance Requirement for a home Energy Budget.

Recommendation 4: set target for increases to NCC Energy Budget stringency, including increase in 2025

The implementation of a NatHERS whole of home rating and the NCC Performance Requirement 2 (energy budget) provide a clear and readily available framework to strengthen the energy performance of new homes.

We recommend that the Strategy should set a target for a strongly increased Energy Budget stringency for new homes. The target should be set in terms of a NatHERS whole of home performance rating (a tool designed to facilitate the implementation of the Energy Budget) or an appropriate ratings framework subject to the Strategy.

We recommend that the target should be set with significant stringency improvements for 2030, providing a clear signpost to industry and consumers about the direction of policy. An immediate interim target should furthermore be set for incorporation into the 2025 NCC.

The Energy Budget or whole-of-home rating allows for developers to consider thermal efficiency, appliance efficiency, and onsite renewables such as rooftop solar in order to optimise the home's energy performance rating. Standards set in the 2022 NCC are conservative. Improvements can be made at low cost; installing more efficient appliances or solar PV would require no major design changes and have minimal impact on industry. We note that a clear minimum standard for thermal

⁴ <https://www.nytimes.com/interactive/2023/climate/earth-hottest-years.html>

⁵

https://www.waverley.nsw.gov.au/_data/assets/pdf_file/0006/181788/Future_Proofing_Residential_Development_to_Climate_Change_Final_Report_January_2021.pdf

efficiency (Performance Requirement 1 in the NCC) should be maintained alongside stringency increases in the Energy Budget.

We recommend that 2025 stringency levels be set at Net Zero Regulated Energy.

The original agreement for the 2022 NCC proposed to model the costs and benefits of a more stringent energy budget (meeting Net Zero Regulated Energy standards for detached homes) for public consultation. It is our understanding that this technical work has been done by the Australian Building Codes Board and that a framework is therefore available for implementation. This offers an ideal opportunity to build on this framework in upcoming updates of the NCC.

There is clear scope to strengthen the NCC Energy Budget for **apartments** (Class 2). The current Energy Budget is set conservatively and assumes no capacity for onsite renewables. Alongside more efficient appliances, there is scope to strengthen apartments' requirements for renewables onsite or at the community or district level, through mechanisms such as solar sharing systems, requirements on strata bodies, or community renewables.

Recommendation 5: end gas connections to new homes from 2025

We recommend the Strategy commits to ending new gas connections to new homes by 2025.

Meeting Australia's commitment of net zero emissions by 2050 is incompatible with continued residential gas use. Electrification coupled with improved efficiency and the growth in renewables offers a clear strategy for the decarbonisation of Australia's residential sector. Households stand to benefit from electrification, with efficient all-electric homes already reducing energy bills.

In this context, connecting new homes to gas is simply increasing the eventual costs to households and the broader community of the energy transition. Stranded assets of gas appliances and connections will need to be replaced, at higher cost than simply building new homes as all-electric.

Furthermore, current compliance pathways for new homes may create perverse energy performance outcomes in which large rooftop solar is coupled with gas appliances, leading to poor optimisation of distributed energy resources in the electricity grid (such as additional exports at peak times without onsite electricity usage).

Recommendation 6: ensure best practice energy performance in new social housing

A large-scale build of new, best-practice energy efficient and all-electric social housing is an important opportunity to build industry capacity, training and supply chains for best practice residential energy performance, while simultaneously responding to large and growing social housing waiting lists. Jurisdictions should commit to above-minimum standard NatHERS ratings and efficient all-electric appliances in all new social housing.

Existing homes

Recommendation 7: embed energy efficiency in the electrification agenda

Objectives for household electrification should be fully integrated with energy efficiency. Home retrofit programs or related policies must address both fuel choice and energy efficiency in order to maximise the benefits to households; regulatory or financial measures to consider include ensuring

thermal efficiency is part of all electrification retrofits and ensuring high energy efficiency ratings for replacement electric appliances such as heat pumps.

There is a risk that without clear planning, energy efficiency may be deprioritised in electrification projects. This would come at a significant cost to households and result in worse outcomes for emissions mitigation and energy systems optimisation.

Recommendation 8: implement minimum energy performance standards for rental homes

Rental homes have worse energy efficiency than owner-occupied homes. Nationally, one study found that poor energy efficiency leaves renters paying 8% more in energy bills compared to owner occupiers in similar homes.⁶ A higher proportion of renters experiences energy stress than owner-occupiers.⁷

The poor energy efficiency and thermal comfort of rental homes is a structural problem of Australia's rental housing market. Market-based responses to improving energy efficiency for renters are limited by the problem of 'split incentives': whereas landlords pay the upfront cost of energy improvements, energy bills are paid by tenants. Owner-occupiers have a clear financial incentive over time to invest in energy efficiency improvements due to reduced energy bills, whereas there is not a similar direct incentive to drive the behaviour of landlords. Furthermore, tenants are not and should not be required to pay for the upfront costs of improvements; tenants paying for energy efficiency improvements would not accrue capital benefits and do not have security of tenure to enjoy the ongoing benefits.

The most important mechanism available to address the 'split incentive' problem is regulated minimum standards for rental homes.

Renew is a signatory to the *Community Sector Blueprint* proposal for a national framework on minimum energy performance standards for rental homes. Full details of implementation considerations and priorities are available in this document.

Recommendation 9: invest in retrofits of existing social housing

The Strategy should set a target for minimum energy performance levels for all social housing, and commit to retrofit programs.

Social housing does not present the same split incentive problem as private rental. Rental providers – governments in the case of public housing, or community housing providers in the case of community housing – are responsible for ensuring social housing meets energy standards. This reduces the barriers to retrofitting homes, and offers a potential opportunity for growing industry capacity for home energy retrofits through government investment. In the case of community housing providers, government funding or other support for retrofits may be appropriate.

Recommendation 10: financial support for retrofits, with priority focus on low-income households

⁶ https://ccep.crawford.anu.edu.au/sites/default/files/publication/ccep_crawford_anu_edu_au/2022-05/ccep2202_best_burke.pdf

⁷ <https://www.bsl.org.au/research/publications/power-pain/>

Financial or other direct support is required to households to undertake retrofits for energy efficiency and electrification. We recommend that the Strategy develops fully funded programs to incentivise and deliver home retrofits.

Models for incentives and programs include rebate schemes; no-interest loans; direct funding for assessments and retrofit; and tailored programs delivered by third parties such as local councils, community organisations or the private sector.

Programs and financial incentives should prioritise low-income households, who face the highest barriers to improved home energy performance. Tailored approaches are needed to ensure equitable access; consideration should be given in the Strategy to the role of local government, community organisations, and other potential community partners.

Further detail is recommended in the shared submission coordinated by ACOSS and supported by Renew.

Consumer rights

Recommendation 11: implement mandatory disclosure of energy efficiency ratings at point of sale and lease

The Strategy should set a target date for the introduction of mandatory disclosure of energy efficiency ratings at the point of lease, and continue to develop the required framework for a consistent national ratings system.

Without a mandatory disclosure system, in practice consumers are simply unable to access clear information about energy performance prior to buying or renting a home.⁸ Voluntary ratings disclosure is limited to high-performing homes, limiting its effectiveness as a mechanism for lifting the standard of the majority of the housing market.

The mandatory disclosure framework should be built on a nationally consistent and accessible ratings scheme.

A mandatory disclosure scheme is highly consistent with the introduction of a performance-based minimum standard for the energy performance of rental homes.

Recommendation 12: resource consumer information and advocacy

Trusted community information and advice is important to ensure and maintain social licence for ongoing improvements to Australia's residential energy performance, and should form a key component of the Strategy.

Clear and accessible information on energy performance, government programs, ratings, financial support, and industry should be appropriately resourced. A one-stop shop for information, advice and referrals to providers is an important gap that we believe is limiting the uptake of home energy performance improvements. Renew provides independent advice on home energy performance through events, publications and advice services; our experience suggests that for many households finding sources of information or services is challenging, and key construction, renovation or

⁸ <https://environmentvictoria.org.au/2020/08/14/home-truths/>

purchase decisions are too often made without clear information on energy performance. The Strategy should consider how to fill this gap and ensure consumer advice is adequately resourced.

Consumer advocacy should be resourced to ensure that consumer needs are built into policies and programs, and that the interests of households are effectively represented in the context of the broader energy transition.

Other matters

Thank you for your consideration of this submission.

Alongside this submission, Renew supports the joint submission lodged by ACOSS with a primary focus on low-income households.

Our submission has focused on specific aspects of the consultation paper and policy; lack of comment on other matters does not indicate a Renew position.

Should you require any further information or clarification, please do not hesitate to contact me at rob.mcleod@renew.org.au.

Yours faithfully,

A handwritten signature in dark ink, appearing to read 'Rob McLeod', with a stylized, cursive script.

Rob McLeod
Policy and Advocacy Manager
Renew