



National Energy Performance Strategy

Curtin Community Submission

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Introduction

Reducing energy use through demand-side measures is a critical component of strong action on climate change, as well as relieving pressure on households facing a cost-of-living crisis. The International Energy Agency (IEA), calls energy efficiency ‘the first fuel’, offering some of the easiest and cheapest avenues to reducing greenhouse gas emissions.¹ The right policy must be in place for these improvements to happen.

A new National Energy Performance Strategy will cover all components of energy demand management, including energy efficiency, load shifting, fuel switching and behaviour change – together termed “energy performance”. Improved energy performance results in lower greenhouse gas emissions, lower power bills for households and businesses, and more comfortable homes, especially in the face of more extreme weather. Lowering energy demand will also reduce pressure on our electricity grid as we transition to renewable energy.

The National Energy Performance Strategy Consultation Paper puts forward five focus areas – governance, residential, commercial, industry and supply chains. This Curtin Community Submission looks at residential energy performance, sharing views from constituents about what energy efficiency measures are in place in their homes, why they care about energy performance, the barriers they face and the policy support they would like to see.

To gather this community input, a Household Energy Efficiency Survey was sent out in my monthly e-newsletter and shared on social media. An additional 500 randomly selected residents received a letter inviting them to participate in the survey either online or by returning the enclosed paper copy. Key survey questions and results are included at the end of this submission.

We received 347 survey responses, including both online (329) and hard copy (18) results. Responses showed an overrepresentation of detached houses (79% survey, 68% census) compared to semi-detached or apartments. Homeowners were more significantly overrepresented in the survey, with 70% owning their home outright and only 5% renting, compared to 35% and 31% respectively in census data. This skew reflects the self-selection of respondents who are, on the whole, highly engaged and knowledgeable about energy efficiency, and have the financial means to invest in home improvements.

With this in mind, the survey still provides useful insights about barriers and opportunities facing the Curtin community in the pursuit of improved energy performance. Thank you to all the members of the Curtin community who completed the survey and contributed to this submission. I ask the Department to consider this feedback when developing the residential components of the new National Energy Performance Strategy.

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¹ Motherway, B (2019) International Energy Agency, [Energy efficiency is the first fuel, and demand for it needs to grow – Analysis - IEA](#).

Summary of Recommendations

Recommendations

1. Home electrification should be the primary focus of efforts to improve residential home energy performance.
2. New homes should have mandated requirements for home electrification.
3. Existing homes should be supported to electrify power, heating and cooking.
4. New homes should have minimum standards for insulation and passive design.
5. Existing homes should be supported to make passive design retrofits and increase insulation.
6. Both environmental and economic benefits of improved energy performance should be clearly communicated when encouraging energy performance improvements.
7. Free home energy assessment and advice should be available to interested homes.
8. Independent advice comparing retail providers of energy performance products should be easily available.
9. Financial assistance for energy efficiency improvements should be more readily available.
10. Properties for rent or sale should have mandatory disclosure of their energy efficiency ratings.
11. Minimum energy efficiency standards for rental properties should be explored.

Opportunities for energy performance improvements

Energy performance improvement opportunities cover a range of different actions and behaviours, from aspects of building design, materials, choice of technologies, external features, and our daily habits and behaviours. Some opportunities must be pursued at the point of build, such as passive solar design and north-facing orientation, but many can be retrofitted to existing homes.

Survey respondents were asked which common energy performance features were in their homes and which energy efficiency behaviours they regularly undertook. These results (online only) can be seen in the graphs 1 and 2 on pages 8 and 9. Numbers listed below refer to the combine online and paper sample.

Home electrification

The biggest opportunities for improving home energy performance lie in electrifying homes – replacing fossil-fuel electricity and gas for power, heating, and cooking with renewable energy sources.

The most common home features of those surveyed were reverse cycle air conditioning (75%) and energy efficient LED lighting (73%). Of the features listed, just over half were present in 50% or more of homes. This means that even in such engaged households, there are still a range of significant energy performance opportunities that have not been utilised that can be added to existing homes. Household battery storage (5%), hot water heat pumps (11%), and electric stovetops (23%) all show large opportunities for increasing uptake. Implementing a suite of household electrification features (solar panels, battery, hot water heat pump, reverse cycle air conditioning and electric stovetops) will cut most household emissions close to zero, as well as making significant reductions in running costs. Rewiring Australia estimates savings of over \$3,400 in running costs for the average electrified home.²

Recommendations

1. Home electrification should be the primary focus of efforts to improve residential home energy performance.
2. New homes should have mandated requirements for home electrification.
3. Existing homes should be supported to electrify power, heating, and cooking.

Insulation and passive design

The next set of opportunities for improving home energy performance in both new and existing homes relates to insulation and passive design elements. Insulated surfaces – including walls, roofs, and windows – reduce the need to use heating and cooling by regulating building temperature and maintaining comfort.

Insulation in walls, floors, or ceilings was the third most common feature of houses surveyed, present in 65% of homes, still leaving room for increased installation. Several other features that similarly regulate building temperature were even less commonly present – external shading (58%), light coloured exterior walls and roofs (51%), insulating blinds or curtains (37%) and double-glazed windows (15%) all show significantly potential to increase uptake. These improvements can all be made to existing housing relatively easily and may have lower upfront costs than some home electrification features.

² Rewiring Australia (2023), [Rewiring Australia](#).

Passive design takes this further by also considering building orientation, thermal mass and glazing to take advantage of natural sources of heating, cooling, and lighting. Good passive design considerably reduces the need for artificial heating, cooling, and lighting without loss of comfort.

Only 16% of homes surveyed had passive solar design. Details of the design features and age of buildings were not provided, and it is likely that many homes in Curtin pre-date the common use of passive design. However, there is clearly considerable room to improve energy performance from the initial design and build. The Government's own YourHome website notes that 'many features of passive design can be added through renovations or simple home improvements'.³

Whilst new houses will soon be required to meet a seven-star energy efficiency rating, much of Australia's existing housing stock is believed to be around 1.8 stars.⁴ There is clear need for policy support to retrofit existing homes and improve their energy performance.

4. New homes should have minimum standards for insulation and passive design.
5. Existing homes should be supported to make passive design retrofits and increase insulation.

Behaviours and habits

Energy efficiency behaviours surveyed were undertaken by a majority of survey participants, with the highest at 94% (opening windows with a cool change for cross-ventilation), and the lowest still one third (switching off appliances at the power point). These participation rates are much higher than the prevalence of home features discussed above. This indicates that there may be greater dividends from policy efforts to improve physical housing stock and building features rather than changing energy use habits.

Barriers to energy performance improvements

Motivation for improving energy performance

Survey respondents mostly expressed high motivation to make energy performance improvements, indicating that a lack of concern or understanding is not a key barrier. It is worth noting that as a self-selecting sample of Curtin residents, this may not be representative. When asked whether the environment or electricity costs were a greater motivation for energy efficiency improvements, 63% said both, 24% named only environmental concerns, 10% only reduced costs. Several participants named increased comfort unprompted. This high level of appreciation of both environmental and economic benefits is particularly interesting given that 78% of respondents also indicated that their electricity bill was not a cause of financial distress, with 17% saying sometimes and only 4% saying yes. This shows that concern for the environment is a very significant motivator, and that even amongst those financially secure, the cost-savings of improved energy performance are still appreciated.

6. Both environmental and economic benefits of improved energy performance should be clearly communicated when encouraging energy performance improvements.

³ YourHome (2023) Passive Design, [Passive design | YourHome](#).

⁴ Oldfield, P (2022) Freezing Indoors? That's because Australian homes are closer to tents than insulated eco-buildings, The Guardian, [Freezing indoors? That's because Australian homes are closer to tents than insulated eco-buildings | Philip Oldfield | The Guardian](#).

Knowledge about energy performance improvements

Responses about energy performance knowledge indicate a high level of basic understanding in the sample, and a strong interest in more tailored information to help decision-making. When asked if they knew how to make their home more energy efficient, 84% said they agreed, indicating a very high level of basic knowledge. 54% of this same group also indicated that free home energy assessments and advice would be helpful to them. Free home energy assessment and advice was selected by 59% of the whole sample. This suggests that even those with basic knowledge are still open to learning more about energy performance. Several respondents also explicitly asked for independent advice comparing different providers of energy performance features such as solar panels, hot water, and insulation.

7. Free home energy assessment and advice should be available to interested homes.
8. Independent advice comparing retail providers of energy performance products should be easily available.

Financial capacity to make energy performance improvements

Survey respondents indicated a moderately high level of financial capacity to make energy performance improvements (65% agree). 46% of those who agreed also indicated that financial assistance (e.g. rebates, No Interest Loans) for energy efficiency improvements would be helpful. This compares to 59% of the overall sample. Given the relative financial security of our survey sample, there is clearly room to make energy performance improvements more financially accessible to the Australian public generally.

9. Financial assistance for energy efficiency improvements should be more readily available.

Renters

Renters face additional challenges in improving the energy performance of their homes. Many renters will not be able to make significant improvements to their homes without the permissions of their landlords. They may also not be in the financial position to do so, even if permitted. 74% of renters surveyed said that they knew how to make their homes more energy efficient, compared to 84% overall. 47% of renters said that they could afford to make improvements, compared to 67% overall. These figures suggest that finances and knowledge are both barriers to improving energy performance for renters.

Renters want to live in more energy efficient properties but struggle to make these changes themselves. 74% of renters surveyed supported the introduction of mandatory minimum energy efficiency standards for rental properties, compared to 20% overall. Policy to encourage landlords to improve energy performance of rental housing stock, or permit renters to make more improvements themselves, is needed. Mandatory disclosure of energy efficiency ratings when buying or renting properties would be a starting point. The introduction of minimum energy efficiency standards in rental properties may be worth considering, as this also helps protect our most vulnerable people from the health risks of homes with poor energy performance.

10. Properties for rent or sale should have mandatory disclosure of their energy efficiency ratings.
11. Minimum energy efficiency standards for rental properties should be explored.

In summary, there is significant potential to increase energy performance in Curtin, particularly in relation to incentivising home electrification for existing homes, the availability of energy assessments and financial assistance, and supporting energy efficiency improvements for renters.

Survey results – (online results only)

Figure 1. Energy performance home features

Does your home have any of the following?

326 out of 330 people answered this question (with multiple choice)

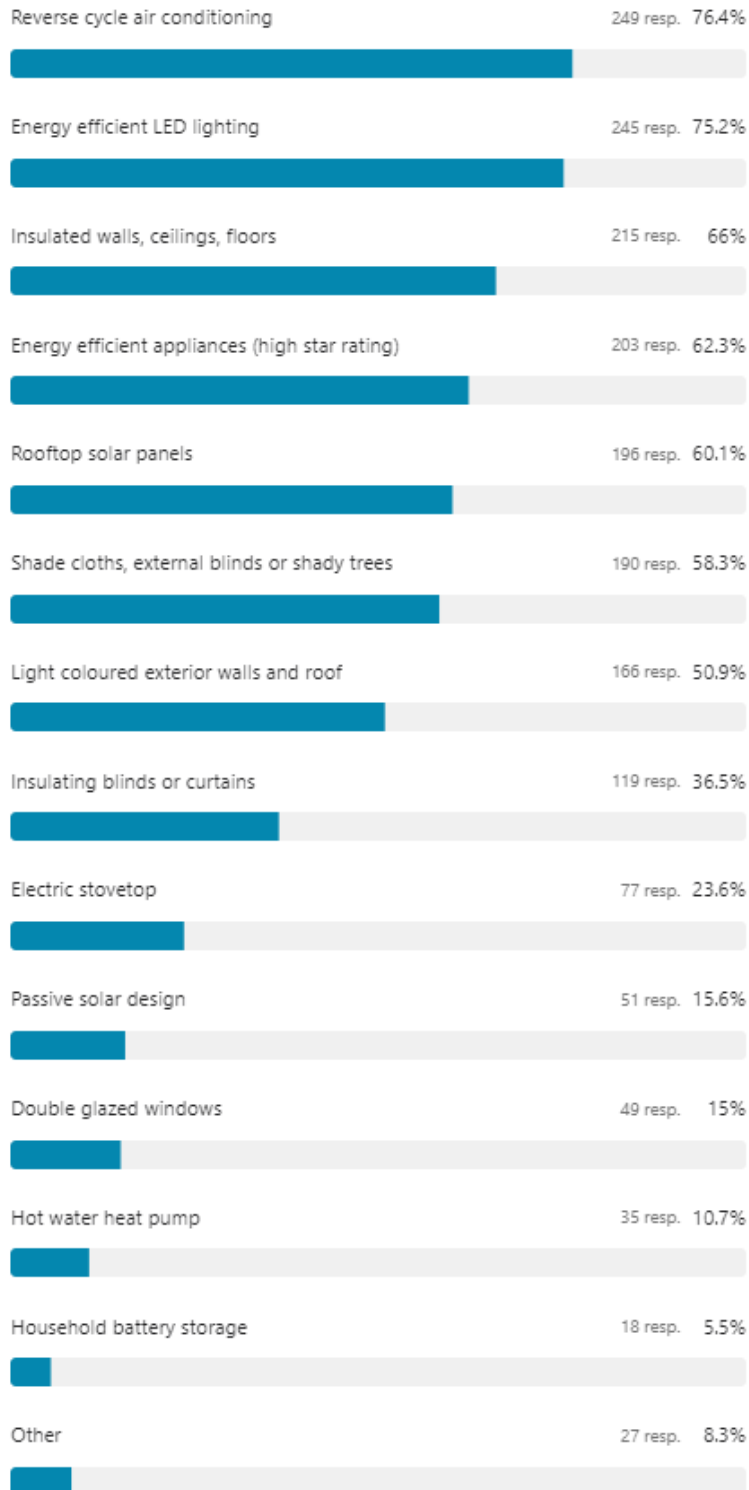


Figure 2. Energy performance behaviours

Do you do any of the following?

328 out of 330 people answered this question (with multiple choice)

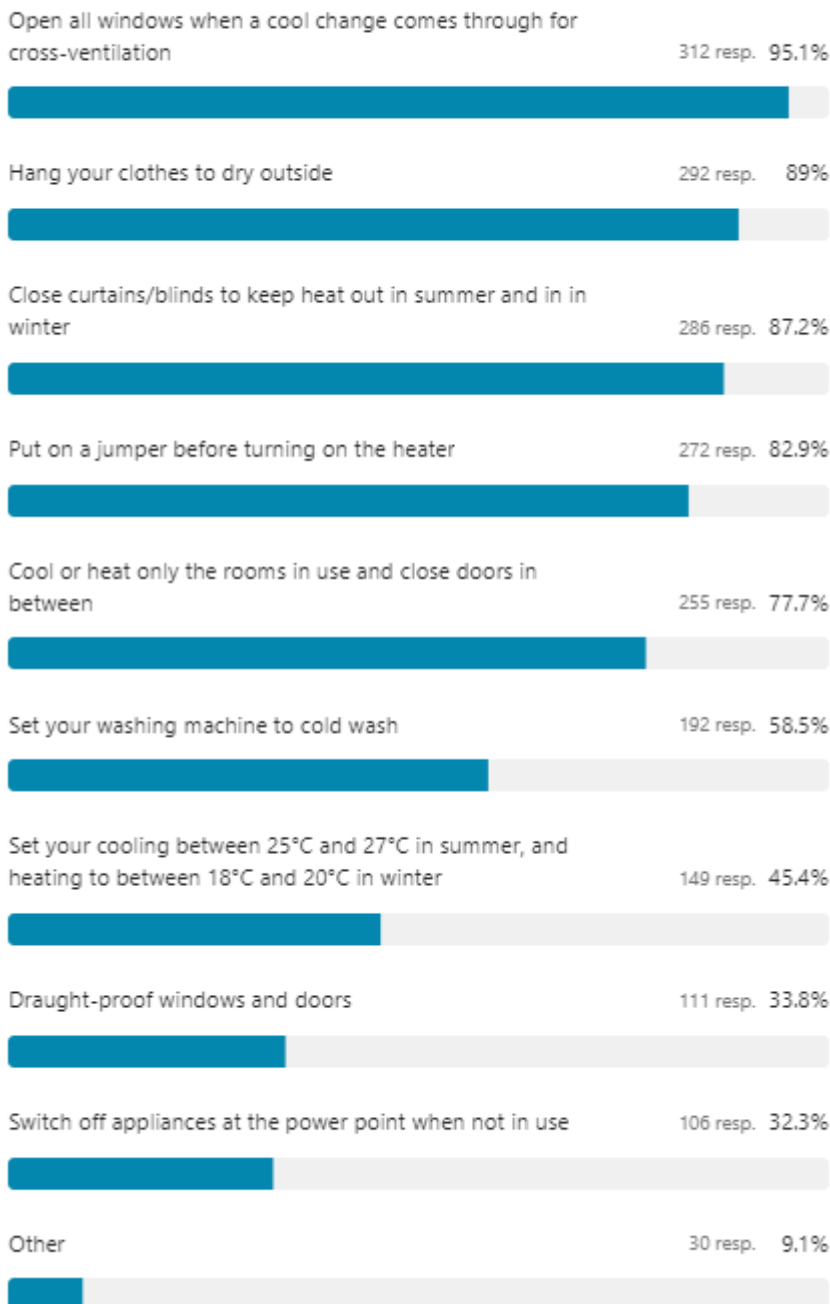


Figure 3. Energy performance knowledge

I know how to make my home more energy efficient.

325 out of 330 people answered this question

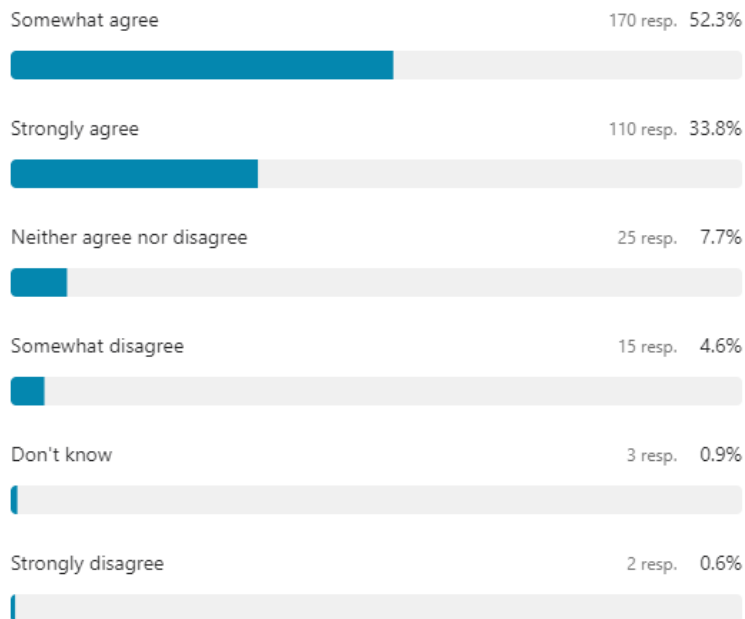


Figure 4. Energy performance affordability

I can afford to make my home more energy efficient.

327 out of 330 people answered this question

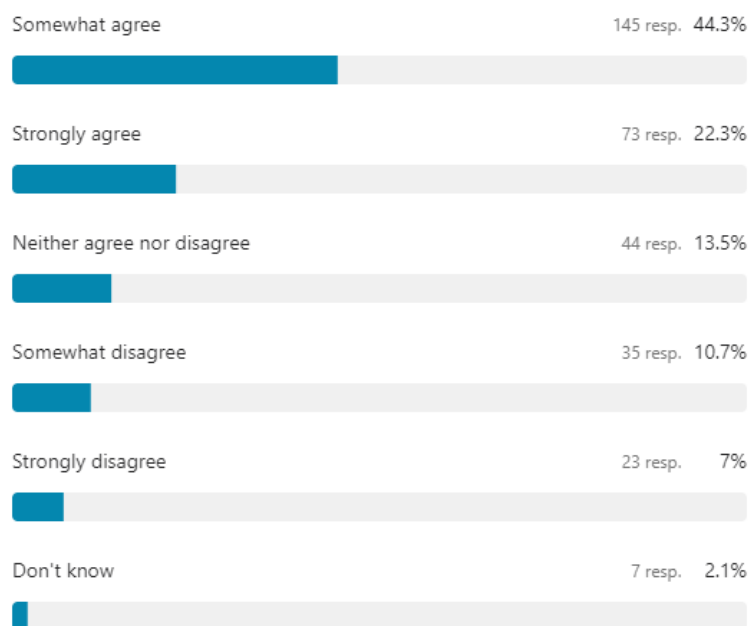


Figure 5. Energy performance policy support

Which of the following would help you make your home more energy efficient?

312 out of 330 people answered this question (with multiple choice)

