

# FAIR ENERGY FUTURES

A study into combatting  
energy hardship and climate  
vulnerability in Melbourne  
apartment communities

Summary Report

July 2025





ACKNOWLEDGEMENT OF TRADITIONAL OWNERS

The City of Melbourne respectfully acknowledges the Traditional Owners of the land we govern, the Wurundjeri Woi-wurrung and Bunurong / Boon Wurrung peoples of the Kulin and pays respect to their Elders past and present. We acknowledge and honour the unbroken spiritual, cultural and political connection they have maintained to this unique place for more than 2000 generations.

We accept the invitation in the Uluru Statement from the Heart and are committed to walking together to build a better future.

This report was prepared by the City of Melbourne with funding from the Carbon Neutral Cities Alliance and in partnership with the Brotherhood of St. Laurence and Capire Consulting Group.

The Carbon Neutral Cities Alliance (CNCA) is a collaboration of global cities working to achieve carbon neutrality in the next 10-20 years while demonstrating innovative solutions and policy approaches to inspire other cities to reach carbon neutrality as quickly as possible. The City of Melbourne is an active member.

The Brotherhood of St. Laurence (BSL) is a social justice organisation working towards an Australia free of poverty. It's purpose is to advance a fair Australia through leadership o policy report, our partnerships with community and the quality of its services. BSL's approach is informed directly by people experiencing disadvantage and uses evidence drawn from its research, together with insight from its programs and services, to develop practical solutions that work. For more information visit [www.bsl.org.au](http://www.bsl.org.au).

Capire Consulting Group is Australia's largest specialist community engagement consultancy. Capire design and deliver tailored engagement strategies for policies, projects, and places across Australia and beyond.

The City of Melbourne thanks Carbon Neutral Cities Alliance, Brotherhood of St. Laurence, and Capire Consulting Group for their support and collaboration on this project.

Finally, the City of Melbourne gratefully acknowledges the time and contributions of our research participants, without whom this project would not have been possible.



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## DISCLAIMER

This report is provided for information and does not purport to be complete. While care has been taken to ensure the content in the report is accurate, we cannot guarantee it is not without flaw of any kind. There may be errors and omissions or it may not be wholly appropriate for your particular purposes. In addition, the publication is a snapshot in time based on historic information which is liable to change. The City of Melbourne and the Brotherhood of St. Laurence accepts no responsibility and disclaims all liability for any error, loss or other consequence which may arise from you relying on any information contained in this report.



## PURPOSE OF THIS DOCUMENT

The *Fair Energy Futures* project seeks to improve understanding of energy hardship and climate vulnerability in high rise communities and identify potential strategies to address these complex and interrelated sets of issues..

Developed through engagement and co-design with community members and informed by literature analysis and City of Melbourne datasets, it provides insights into the drivers of energy hardship, its intersection with climate-related vulnerability, and the lived experiences of people confronting these challenges. In response to the issues identified, this report presents a range of potential policy and programmatic responses for consideration and implementation

Using City of Melbourne as a case study, this document provides insights that are relevant and applicable across Victoria and Australia in jurisdictions with a high proportion of people living in apartments. It is intended as a guide for governments, community services organisations, researchers, practitioners, and community members working to deliver policy, programs, and initiatives for apartment residents to address energy affordability; within the broader context of enabling inclusive climate action, community resilience and a just transition.

# 1. INTRODUCTION

Access to affordable energy is a fundamental pre-determinate of health and wellbeing. In 2024, a significant proportion of City of Melbourne’s residents reported that they were having trouble paying their energy bills (27.5%), and even more (43.3%) were reducing their energy consumption to inadequate levels to afford them<sup>1</sup>.

Energy hardship adversely affects health and wellbeing outcomes for vulnerable groups and is often intertwined with other social and economic factors such as poverty, employment, housing insecurity and climate change, which can amplify existing inequalities.

In response to these issues, the City of Melbourne – with funding support from the Carbon Neutral Cities Alliance, and in collaboration with the Brotherhood of St. Laurence and Capire – undertook to investigate the systemic causes of energy hardship, and to better understand its intersection with climate-related vulnerability such as heat health risk, through in-depth engagement with affected communities.

The purpose of this investigation was to generate insights to inform development of potential policies, programs, strategies and supports to address the issue of energy hardship, which may additionally also help to build community resilience and adaptive capacity to climate-related impacts. Given the high proportion of residents living in medium and high density dwellings in the City of Melbourne, this investigation centred on apartment residents and the particular interventions best able to support them.

The findings from this research, engagement and co-design process are produced here to support policy and system change; and assist local, state and federal governments, regulators, community organisations and the broader energy industry to develop policy and program interventions to address energy hardship, energy equity, and community resilience.

## CITY OF MELBOURNE CONTEXT

The City of Melbourne municipality comprises 11 unique neighbourhoods – Carlton, Parkville, East Melbourne, West Melbourne, North Melbourne, Kensington, Docklands, South Yarra, Southbank, Fishermans Bend, and the CBD Hoddle Grid – that people from many cultures call home. The municipality also includes major sporting venues, parks and gardens, cultural and educational institutions and plays a crucial role in shaping the state’s economy, identity and social life. The resident population of City of Melbourne in 2024 was 189,381 - a rapid 26.6% increase since 2021<sup>2</sup>.



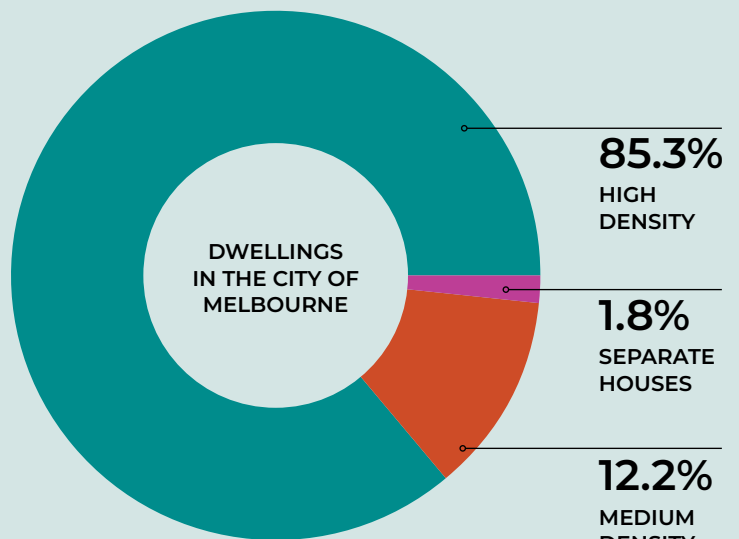
<sup>1</sup> City of Melbourne (2025a), Open Data Platform, [www.data.melbourne.vic.gov.au/pages/home](http://www.data.melbourne.vic.gov.au/pages/home)

<sup>2</sup> City of Melbourne (2025b), Estimated Residential Population, [www.profile.id.com.au/melbourne/population-estimate](http://www.profile.id.com.au/melbourne/population-estimate)



### WHY FOCUS ON APARTMENTS?

The overwhelming majority of City of Melbourne residents live in medium or high density apartment buildings, with apartments accounting for 97% of residential dwellings in the municipality.<sup>3</sup> This number will significantly increase as the city's population expands over the coming decades.<sup>4</sup> Apartments disproportionately house populations that are vulnerable to energy hardship, including low income households, renters, younger people and multicultural communities. Further, many existing apartment buildings are ill-equipped to withstand current and growing climate-related pressures, making a substantial proportion of the City's population vulnerable to heat and other climate-related risks. To date, government interventions that address energy hardship have been primarily targeted at standalone buildings. A robust evidence base is required to inform fit-for-purpose policy and programmatic interventions that are targeted at the apartment sector.



<sup>3</sup> City of Melbourne (2025c), Dwelling Types, [www.profile.id.com.au/melbourne/dwellings](http://www.profile.id.com.au/melbourne/dwellings)

<sup>4</sup> City of Melbourne (2025d), Forecast 2023-2043, [www.melbourne.vic.gov.au/population-estimates-and-forecasts](http://www.melbourne.vic.gov.au/population-estimates-and-forecasts)

Figure 1: Dwellings in City of Melbourne by type. Medium density' includes all semi-detached, row, terrace, townhouses and villa units, plus flats and apartments in blocks of 1 or 2 storeys, and flats attached to houses. 'High density' includes flats and apartments.



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# 2. METHODOLOGY

The *Fair Energy Futures* project was delivered via two workstreams.

## WORKSTREAM 1: RESEARCH, DATA ANALYSIS AND POLICY

A review of relevant literature was undertaken to understand the root causes of energy hardship, including the intersection of building typology, climate vulnerability and socio-economic factors; and identify potential policy responses. This was combined with analysis of City of Melbourne datasets to identify key areas of energy vulnerability within the City of Melbourne, including relevant communities and building typologies.

## WORKSTREAM 2: ENGAGEMENT, CO-DESIGN AND EVALUATION

A multifaceted community engagement, co-design, and evaluation process designed to:

- Gain insights into the lived experiences of energy hardship and climate vulnerability, including the relationships between personal circumstances, structural and socio-economic factors.
- Increase understanding of the barriers and enablers of change within cohorts most vulnerable to energy hardship and climate vulnerability.
- Engage representatives from target cohorts in co-designing interventions that are fit-for-purpose in addressing energy hardship and climate vulnerability.
- Evaluate the impacts of the engagement program and trial interventions for participants.

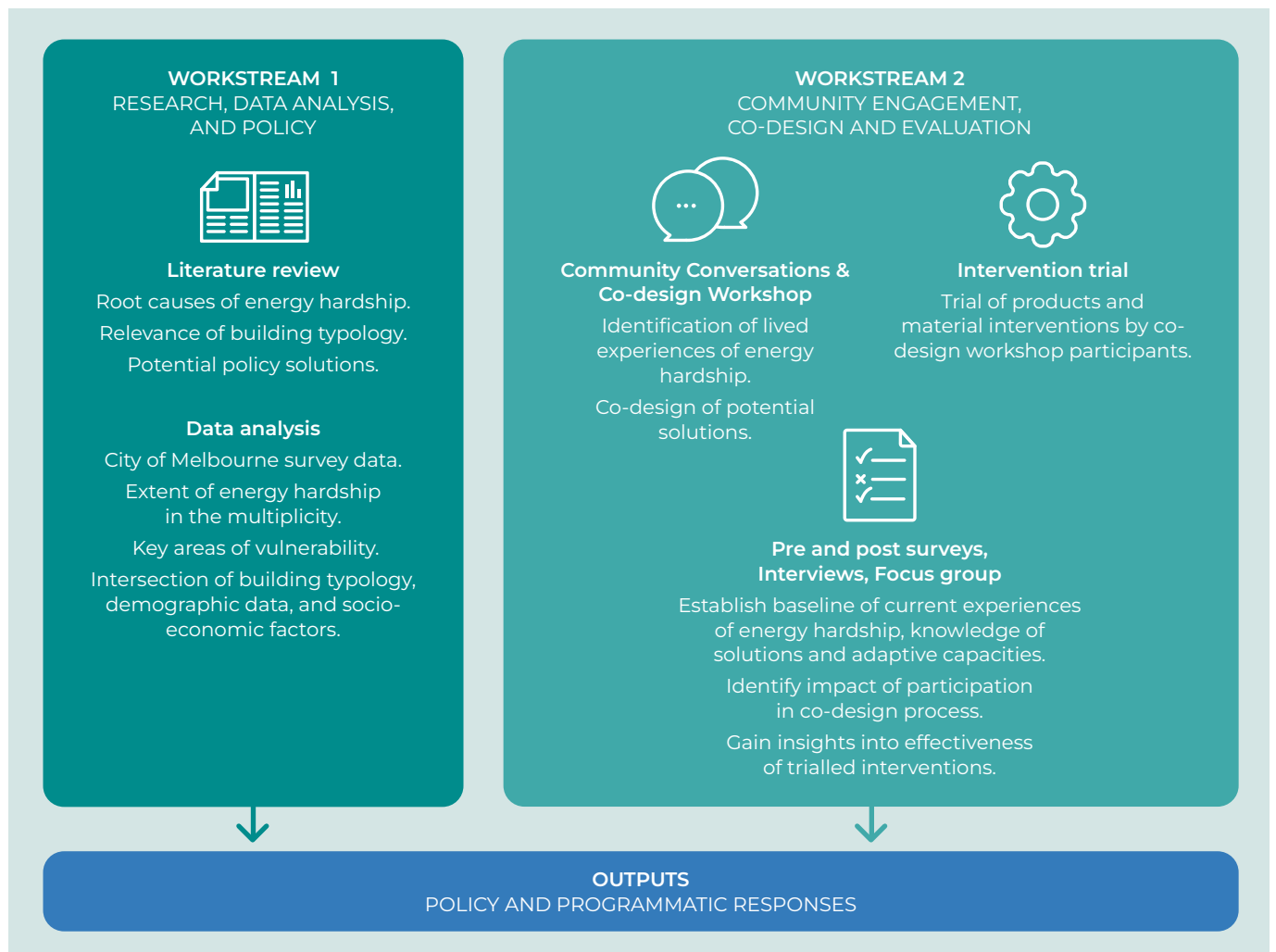


Figure 2: Project methodology

# 3. DEFINITION AND DRIVERS OF ENERGY HARDSHIP

Energy-related hardship has been labelled and measured in different ways in Australia and internationally – including energy poverty, energy stress, energy hardship and energy insecurity<sup>5</sup>. In this project, City of Melbourne has opted to use the term ‘energy hardship’ over other terms such as ‘energy poverty’ as for the everyday person, the term ‘poverty’ can feel stigmatising and imply blame.

In this study the term ‘energy hardship’ is defined broadly to refer to *a general situation where people struggle financially to achieve an adequate level of energy services in their home - or where achieving this level leads to financial stress and/or deprivation of other essential goods and services.*<sup>6</sup>

Energy hardship is the outcome of multiple inter-related factors that impact each household differently. There are a number of key drivers that are relevant to the City of Melbourne context, as identified below.

## Structural and systemic root causes

### HOUSEHOLD INCOME

Household income is a key determinant of energy hardship, with those on the lowest incomes most vulnerable to shifts in energy prices. The lowest 20% of households by income have experienced the greatest increase in hardship in recent years, with the rate growing by 8% amongst this cohort from 2008-2017. This contrasts to those in the top 60% of income, whose rates of energy hardship rose by just 3% over the same period.<sup>7</sup>

Closely linked to this is access to paid work, which is highly correlated to rates of energy hardship.<sup>8</sup> Similarly, those reliant on government income support experience energy hardship at high rates and are highly sensitive to changes in energy prices due to fixed incomes, which have not increased in line with the cost of living in recent years.<sup>9</sup>

### RISING ENERGY PRICES AND A COMPLEX ENERGY MARKET

Gas and electricity prices have increased significantly over recent years, outpacing steep growth in the cost of other household essentials.<sup>10</sup> This has resulted in more customers experiencing financial stress, failing to make payments and taking on debt to keep up with energy bills.<sup>11</sup>

Victoria has a privatised energy retail market with dozens of retailers offering hundreds of retail electricity plans on any given day.<sup>12</sup> Changing retail plans can be an effective way for households to reduce their energy costs, with households on older retail plans more likely to pay significantly higher prices than those who have recently switched. However, many households face barriers to switching, such as the market's complexity; lack of time; or limited numeracy, literacy or technology access.<sup>13</sup>

Some households cannot practically switch energy offers, including residents of embedded networks (present in some apartment buildings) and many people in debt to their energy retailer. Further, consumer research has identified the complexity and inconsistency of energy bill structures as a key barrier to household's understanding their energy consumption, ability to compare retail offers and switch to a better value plan.<sup>14</sup> Inability to switch may exacerbate energy hardship by exposing households to high prices.

<sup>5</sup> Bryant D, Porter, E, Rama, I & Sullivan, D (2022), Power pain: an investigation of energy stress in Australia, Brotherhood of St Laurence, Fitzroy, Vic.

<sup>6</sup> 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, Melbourne.

<sup>7</sup> Bryant et al (2022)

<sup>8</sup> ibid

<sup>9</sup> ACOSS (2023), “It’s Hell”: How Inadequate Income Support Is Causing Harm, Australian Council of Social Services, NSW

<sup>10</sup> Kitchen, C & Wang, B (2022), ‘International electricity prices: How does Australia compare?’, Australian Energy Council, Melbourne

<sup>11</sup> Essential Services Commission (2023), Victorian Energy Market Report 2022-23, Melbourne, Victoria

<sup>12</sup> Essential Services Commission (2025a), Energy Market Dashboard, [www.esc.vic.gov.au](http://www.esc.vic.gov.au)

<sup>13</sup> Department of Prime Minister and Cabinet (2021), Energy bill contents and bill requirements: Literature review, Australian Government, Canberra

<sup>14</sup> ibid

## HOUSEHOLD INCOME AND ENERGY HARDSHIP

THE LOWEST

20%

OF HOUSEHOLDS BY INCOME HAVE EXPERIENCED THE GREATEST INCREASE IN HARDSHIP IN RECENT YEARS.

Source: Bryant et al (2022)

From June 2025, Victorian rental properties will be required to meet minimum energy efficiency and safety standards.

## POOR BUILDING QUALITY AND ENERGY EFFICIENCY

40%

OF VICTORIAN HOMES HAVE BEEN IDENTIFIED AS ACHIEVING A 'POOR' OR WORSE THERMAL STANDARD<sup>21</sup>



Source: Sustainability Victoria (2024)

### LACK OF AWARENESS AND ACCESS TO FINANCIAL SUPPORT

Support is available to vulnerable households to assist them with the cost of energy such as the Victorian Energy Assistance Program; however, access is constrained and vulnerable households are falling through the cracks. For example, concession card holders in Victoria can receive a ~17.5% discount on their energy bills by notifying their retailer of their concession status.<sup>15</sup> However, a 2022 study found that 7% of concession card households did not receive a concession on their electricity bill, while 12% miss out on concessions on their gas bill.<sup>16</sup> This has been attributed primarily to consumers' lack of awareness regarding their eligibility and how to access this benefit.<sup>17</sup>

### POOR BUILDING QUALITY AND ENERGY EFFICIENCY

Victorian homes perform poorly when it comes to thermal quality and energy efficiency. This exposes households to high energy costs and difficulties in maintaining thermal comfort. The Victorian Government has identified 40% of homes in the State as achieving a 'poor' or worse thermal standard, meaning that they have a maximum of two thermal features such as insulation, draught proofing, thick curtains or double glazing. Only 13% of Victorian homes are identified as achieving a 'good' standard.<sup>18</sup>

Victoria first regulated energy efficiency for new homes in 1991, while minimum energy efficiency standards were introduced into the national standards for new or significantly renovated buildings in 2003. These buildings are now required to meet a minimum 7 stars under the Nationwide House Energy Rating System (NatHERS). However, this standard remains well below international best practice. Further, with most existing homes built before 2003 the overwhelming majority do not perform to the current standards.<sup>19</sup>

In June 2025, the Victorian Government announced that it would introduce minimum energy efficiency and safety standards for rental properties, which include installing ceiling insulation and efficient cooling where none exists, a moderate level of draught proofing; and at the end of the appliance life, replacement of gas heating with efficient electric heating and replacement of gas hot water with efficient electric hot-water. Some exemptions apply for apartment buildings.

<sup>15</sup> Department of Families, Fairness and Housing (2025), Concessions and benefits, Victorian Government, Melbourne, Australia

<sup>16</sup> Hobbs, B.M (2022), Mind the gap: identifying the gap between concession eligibility and concessions received, Consumer Protection Resource Centre, Australia

<sup>17</sup> Bother, F, Prakash, K (2024), Insights into energy concession awareness and energy related behaviours among concession card holders in Australia, University of Melbourne, Melbourne, Australia

<sup>18</sup> Sustainability Victoria (2024), State of Sustainability Report, Victorian Government, Melbourne

<sup>19</sup> Daniel, L, Lang, M, Barlow, C, Phipps, P, Baker, E and Hamilton, I (2024), A national roadmap for improving the building quality of Australian housing stock, AHURI, Melbourne

## GAS USAGE

VICTORIAN HOUSEHOLDS HAVE THE HIGHEST GAS USAGE IN THE COUNTRY, WITH ALMOST

# 90%

RELIANT ON GAS APPLIANCES

Source: Sustainability Victoria (2024)

The capacity of renters to improve their thermal comfort and reduce their energy costs is limited by their lack of agency over interventions within their home.



## SOLAR PANELS

CONVERTING AN EXISTING HOME WITH SOLAR PANELS FROM GAS TO ELECTRICITY CAN REDUCE ENERGY BILLS BY AROUND

# \$2,000 a year

Source: Victorian Government (2024)

## RELIANCE ON GAS

Victorian homes remain highly reliant on gas, exposing them to rising energy costs and excluding them from the benefits of electrification. Victorian households have the highest gas usage in the country, with almost 90 per cent reliant on gas appliances. Gas is mostly used in Victorian homes for cooking (68%), heating (51%) and hot water (61%).<sup>20</sup> This dependence makes Victorian households vulnerable to gas prices, which increased by 22% between 2022-23.<sup>21</sup> The Victorian Government's Gas Substitution Roadmap identifies that converting an existing home with solar panels from gas to electricity can reduce energy bills by around \$2,000 a year.<sup>22</sup>

## HIGH RISK EXPOSURE AND LIMITED AGENCY AMONG RENTERS

Renters face the twin challenges of being more exposed to energy hardship and having less ability to respond to it than owner-occupiers. Both private renters and those renting in public housing are more likely to experience energy hardship than people living in other housing tenures. Many population groups that are most vulnerable to energy hardship are also more likely to live in rented accommodation, such as single people, young families, people on low incomes, the working poor, multicultural communities and people living with a chronic illness or disability.<sup>23</sup>

Rental properties are typically less efficient than owner occupied properties. Recent studies have found that energy costs for Australian rental properties were 8% higher than non-rental households<sup>24</sup> and the majority (64%) of renters live in homes with poor thermal quality, compared to 30% of homeowners.<sup>25</sup>

The capacity of renters to improve their thermal comfort and reduce their energy costs is limited by their lack of agency over interventions within their home. For example, these households' energy choices can be substantially constrained by rental restrictions, power imbalances between landlords and tenants, and a lack of trusted information on their rights and opportunities to reduce energy costs. Those living in apartments face particular limitations due to building rules, shared utilities and embedded network conditions.

<sup>20</sup> Sustainability Victoria (2024)

<sup>21</sup> Duffy, G, & Mauseth, V.M (2023), The NEM – Where prices are high and innovation low: Observations from the Vinnies' Tariff-Tracking Project, St Vincent de Paul Society, Victoria, Australia

<sup>22</sup> Victorian Government (2024), Gas Substitution Roadmap Update 2024, Melbourne, Victoria

<sup>23</sup> Moore, D, Baker, E, Beer, A, Willand, N, Horne R, and Hamilton (2020), Warm, cool and energy affordable housing policy solutions for low-income renters, AHURI, Melbourne

<sup>24</sup> Ibid

<sup>25</sup> Sustainability Victoria (2024)

## Drivers of energy hardship in apartments

Apartment communities are subject to particular drivers of energy hardship and face complex barriers to improving energy performance, affordability and thermal comfort.

### ENERGY AND CLIMATE VULNERABLE POPULATIONS

Apartment buildings are home to a high proportion of communities that are vulnerable to energy hardship. For example, 65% of all apartments in Australia are rented. They are also more likely to house migrants (57%), people who speak a language other than English at home (50%) and single-person households (35%).<sup>26</sup>

### POOR BUILDING ENERGY PERFORMANCE

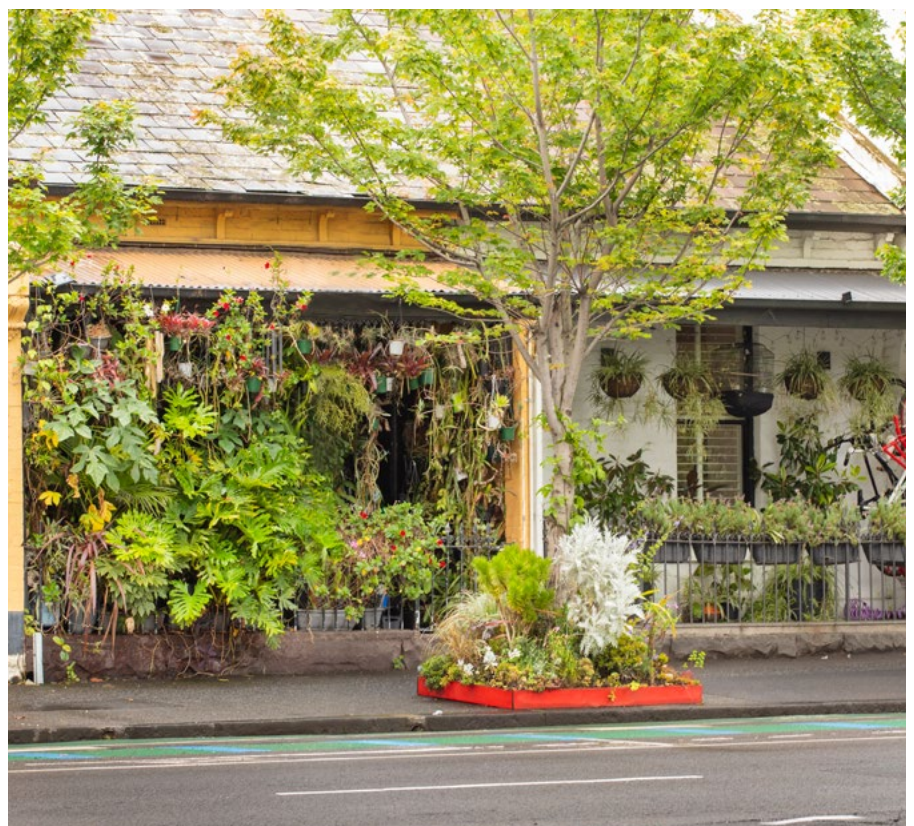
Like other residential building types, many apartments in Australia perform poorly when it comes to energy efficiency and comfort. The majority of Australia's apartment buildings perform well below international best practice when it comes to energy efficiency and are heavily reliant on energy consumption to deal with climate-related pressures such as extreme heat.<sup>27</sup> Energy is consumed in both individual apartments and common areas of apartment buildings. Common areas can account for up to 60 percent of energy use, with heating and ventilation, air conditioning and pumps being the biggest energy users.<sup>28</sup>

The Victorian State Government has a number of programs that provide support for energy efficiency and rooftop solar upgrades, such as the Victorian Energy Upgrades program, an obligation on energy retailers that provides households and businesses with discounts on energy efficiency measures; and Solar Victoria which includes rebates for rooftop solar and heat pump hot water systems. Both programs have components available to apartment owners and tenants, and there are some provisions in Solar Victoria program to specifically enable apartments to participate.

<sup>26</sup> Easthope, H., Palmer, J., Sharam, A., Nethercote, M., Pignatta, G. and Crommelin, L. (2023) Delivering sustainable apartment housing: new build and retrofit, AHURI Final Report No. 400, Australian Housing and Urban Research Institute Limited, Melbourne

<sup>27</sup> Solomonsz, J. & Armstrong, G (2023) Raising Australian building standards can deliver climate-ready homes sooner, Climateworks Centre, Melbourne, Victoria

<sup>28</sup> City of Sydney (2015), Energy Efficiency Master Plan – Foundation Report: Technical Appendix, Sydney, Australia



## GOVERNANCE AND REGULATORY BARRIERS TO UPGRADES

Significant improvements can be achieved by upgrading apartment buildings, however energy upgrades can be more challenging for apartment communities than for standalone homes due to a number of hurdles including physical constraints, governance, decision-making and financing.

Governance and decision-making related to building upgrades are governed by the *Victorian Owners Corporations Act (2006)*. The Act establishes that the Owners Corporation (OCs), made up of all apartment owners in a residential apartment building, is responsible for the common property of the building. OCs and their nominated committee members are required to make important decisions regarding the management, maintenance and improvement of the building. OCs commonly lack the knowledge and capacity to deliver complex energy upgrades and are not compelled by the Act to plan for electrification or sustainability energy upgrades in building maintenance plans and budgets. Such interventions rarely succeed without strong support, capacity and commitment within the OC.<sup>29</sup>

Many upgrades need to meet a high threshold of agreement from the OC, commonly needing 75% of owners to vote in their favour. This is the case for common area upgrades and many upgrades relevant to individual apartments. For example, the installation of solar panels, heat pump water heaters and air conditioners, double glazed windows and even window shades and curtains may require approval from the OC.<sup>30</sup>

The *Victorian Owners Corporations Act* does little to actively support energy and sustainability upgrades. While it does prohibit OCs from unreasonably preventing the installation of 'sustainability items' such as solar panels and hot water systems, it does not require OCs to consider sustainability in their planning and reporting processes, which is the case in some other jurisdictions.<sup>31</sup>

Renters are not addressed in the current Victorian Owners Corporation legislation and are generally excluded from decision making processes within apartment buildings. Their access to energy improvements is further hindered by an exemption in Victoria's minimum rental standards, which enable a rental provider to avoid installing energy efficient heating if the cost of installation would be significantly higher than the average building; the owners corporation rules prohibit it; or compliance with any other Act or local law makes the installation cost prohibitive.<sup>32</sup>

## A LACK OF RELEVANT INFORMATION AND POLICY SUPPORT

Policies and programs related to energy efficiency and electrification have historically focussed on standalone homes, rather than apartment buildings. Many of the supports that are offered under such programs are not suitable to apartment communities.<sup>33</sup> Targeted support is therefore needed to facilitate the improvement of apartment buildings. This includes case studies of successful projects, financial support, guidance and connection to suitably qualified service providers that have experience working with apartment buildings.



<sup>29</sup> Brand, A, Corcoran, J, McLean, J, Nicolazzo, K (2025), Working with apartment and strata communities – a handbook for local governments, Let Me Be Frank, Melbourne.

<sup>30</sup> *ibid*

<sup>31</sup> *ibid*

<sup>32</sup> *ibid*

<sup>33</sup> *ibid*

## GOVERNANCE & DECISION-MAKING BARRIERS

MANY APARTMENT ENERGY UPGRADES NEED

# 75%

OF OWNERS TO VOTE IN FAVOUR — A HIGH THRESHOLD THAT OFTEN STALLS PROGRESS

The Victorian Owners Corporations Act does little to actively support sustainability — and renters are excluded from most upgrade decisions

## EMBEDDED NETWORKS



WITHIN THE CITY OF MELBOURNE THERE ARE APPROXIMATELY

# 168

RESIDENTIAL APARTMENT BUILDINGS WITH EMBEDDED NETWORKS, COVERING AROUND

# 65,000

DWELLINGS<sup>32</sup>

Source: City of Melbourne (2024)

## EMBEDDED NETWORKS IMPEDE ACCESS TO AFFORDABLE ENERGY OPTIONS

The prevalence of embedded networks in apartment buildings presents significant barriers to accessing affordable and sustainable energy and serves to exacerbate and entrench energy hardship.

Embedded networks are privately owned and managed electricity networks that supply all the premises within a building or area. They can also be used in apartments to distribute other services like gas for hot water and heating. Embedded networks owners and/or operators buy energy from an energy retailer and then on-sell it to customers inside their network.

In theory, embedded networks ought to enable lower energy costs by allowing energy to be purchased at wholesale rates for the building to be passed through to residents. In practice however, they tend to produce the opposite; with evidence suggesting embedded network customers generally pay higher electricity prices than non-embedded network customers.<sup>34</sup>

Embedded networks customers are effectively locked in and cannot readily switch to a different retailer, meaning they are unable to access competitive retail energy offers from the market in the same way as other customers.<sup>35</sup>

A Victorian Government review of the embedded network regime acknowledged a range of negative issues experienced by many people living within embedded networks regarding fairness, consumer protections, and inability to access competitive retail energy offers.<sup>36</sup> The Victorian Government Response to the Embedded Network Review<sup>37</sup> was to introduce a new licensing regime requiring new embedded networks to meet higher consumer protections and provide customers easier access to on-market retail offers, as well as to meet a 100% renewable electricity requirement (5% onsite) from 2023.

Legacy embedded networks however, will not be transitioned to this new regime until 2027 at the earliest. While the changes are a positive development, the slow phase-in of these reforms and potential for the renewable energy requirement to lead to increased costs for residents, suggests embedded networks may continue to be a driver of energy hardship in apartment communities for some time to come.

Within the City of Melbourne there are approximately 168 residential apartment buildings with embedded networks, covering around 65,000 dwellings.<sup>38</sup>

<sup>34</sup> Victorian Government (2022a), Embedded Networks Review Issues Paper, Victorian Government, Melbourne

<sup>35</sup> ibid

<sup>36</sup> ibid

<sup>37</sup> Victorian Government (2022b), Response to the Embedded Networks Review, Victorian Government, Melbourne

<sup>38</sup> City of Melbourne (2024), Building Energy Use and Emissions Study, Melbourne, Victoria



# 4. WHO IS EXPERIENCING ENERGY HARDSHIP IN THE CITY OF MELBOURNE?

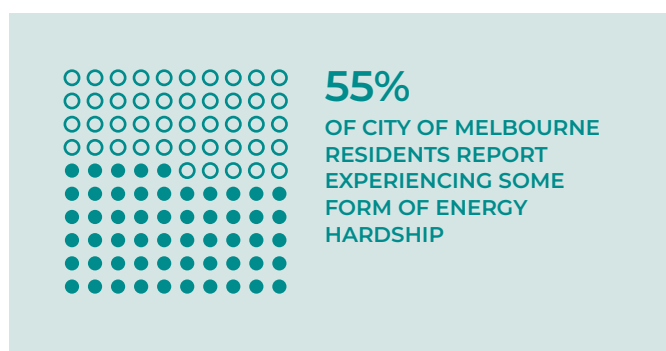
The City of Melbourne collects data annually about the state of health, well-being, participation and connection of communities in the Local Government Area - including on energy hardship - via its annual Social Indicator Survey (CoMSIS).

The 2024 survey asked respondents to rate their level of agreement with the following statements, based on their experience in the past 12 months:

- I have had trouble paying energy bills
- I have intentionally reduced my energy consumption to inadequate levels due to costs
- My energy bills have taken up a disproportionate amount of my household budget reducing my ability to cover other essential expenses.

These three questions asked in the survey provide insights into different aspects of energy hardship – payment difficulty, energy rationing, and reduced spending on other essentials. Combined, these aspects have significant implications for an individual or household’s health and wellbeing outcomes, their capacity to withstand climate-related impacts such as extreme heat, or their ability to respond to persistent coldness exacerbated by buildings that are poorly designed buildings and thermally inefficient.

CoMSIS data from 2024 reveals that 55% of City of Melbourne residents surveyed reported experiencing some form of energy hardship in the past 12 months.<sup>39</sup>

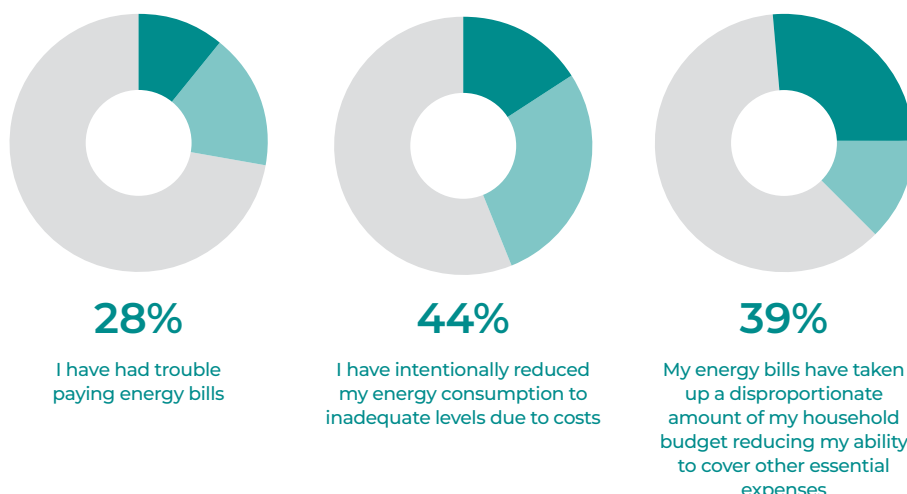


## INCIDENCE OF ENERGY HARDSHIP REPORTED IN 2024 ACROSS ALL RESPONDENTS

Of the three questions asked of the more than 1,200 respondents, 27% reported having payment difficulties, 44% reported energy rationing, and 39% reported reduced spending on other essentials.

Figure 3: Incidence of energy hardship reported in 2024 across all respondents

- Strongly agree
- Agree



<sup>39</sup> City of Melbourne (2025a), Open Data Platform, [www.data.melbourne.vic.gov.au/pages/home](http://www.data.melbourne.vic.gov.au/pages/home)

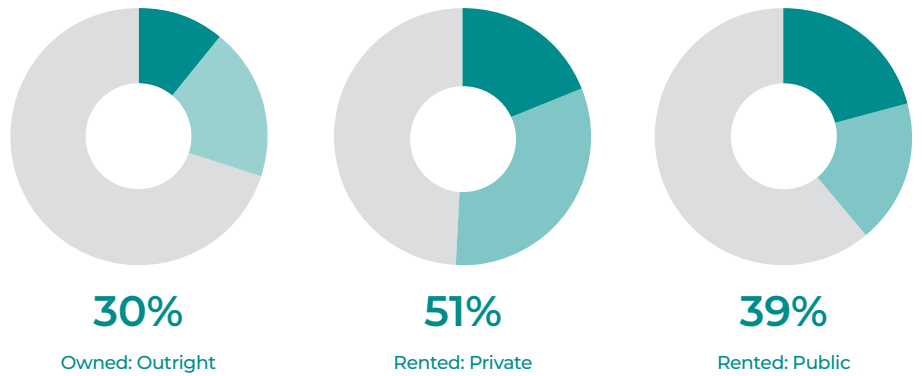
## ENERGY RATIONING

**RENTERS ARE DISPROPORTIONATELY EXPERIENCING ENERGY HARDSHIP HOWEVER MANY OWNERS WITH MORTGAGES ARE ALSO STRUGGLING**

A high proportion of both private renters (51%) and owners with mortgages (45%) are rationing energy use to inadequate levels.

Figure 4: Incidence energy rationing by housing tenure

- Strongly agree
- Agree



## INCIDENCE OF PAYMENT DIFFICULTY



## LOW INCOMES EXACERBATE HARDSHIP BUT MIDDLE-INCOME HOUSEHOLDS STILL REPORT FEELING THE PINCH

Income is generally inversely correlated to reported experiences of energy hardship. However, a significant proportion of middle-income households still report significant levels of energy hardship.

Figure 5: Incidence of payment difficulty by household income

- Strongly agree
- Agree

### **YOUNGER PEOPLE ARE MORE LIKELY TO EXPERIENCE ENERGY HARDSHIP**

People aged 18-44 reported the highest levels of energy payment difficulty, followed by people aged 55-64 years. When it comes to energy rationing, the younger the person, the more likely they were to report energy hardship, with 48% of people aged between 18-24 years of age reporting energy rationing compared to 23% of those over 65. Similarly, those aged 18-44 years were more likely to report reduced spending on non-energy essentials.

### **STUDENTS ARE MORE LIKELY TO REPORT HARDSHIP THAN NON-STUDENTS**

Over a third (33%) of students reported having trouble paying their energy bills compared to 24% of non-students. Almost half (48%) of students reported reducing their energy consumption to inadequate levels compared to 40% of non-students. Local students reported higher rates of energy hardship compared to international students with 40% reporting having trouble paying their energy bills compared to 26% of international students. Further research is required to investigate the factors contributing to this result. Potential areas for investigation are housing type, housing density, and financial background.

### **WOMEN EXPERIENCE HIGHER LEVELS OF ENERGY HARDSHIP THAN MEN**

Men and women report trouble paying energy bills equally. However, around 50% of women reported reducing their energy consumption to inadequate levels due to concerns about cost, compared to 40% for men.

### **MULTICULTURAL COMMUNITIES ARE MORE LIKELY TO EXPERIENCE HARDSHIP**

Culturally and Linguistically Diverse (CALD) residents are more likely to report energy hardship than English speaking households. For example 46% of CALD residents reported energy rationing compared to 41% of English speaking households.

### **PEOPLE IN APARTMENTS ARE LESS LIKELY TO BE IN HARDSHIP THAN PEOPLE LIVING IN STANDALONE OR SEMI-DETACHED HOUSES**

Energy hardship is experienced at significant rates by households living in apartments, albeit lower than other dwelling types. In the case of payment difficulty, 23% of apartment residents are struggling compared to 30% of semi-detached and 37% of standalone houses. Rates of energy rationing are high among all housing types - apartments (41%), semi-detached (49%), standalone (47%).



# 5. APARTMENTS, ENERGY HARDSHIP AND CLIMATE VULNERABILITY

A complex inter-relationship exists between living in apartment buildings, climate vulnerability, and energy hardship. Living in an apartment building can increase vulnerability to climate risk<sup>40</sup>, and those experiencing energy hardship, underlying disadvantage and health vulnerabilities face even higher exposure to climate hazards<sup>41</sup>.

## POOR APARTMENT ENERGY PERFORMANCE INCREASES CLIMATE VULNERABILITY AND ENERGY DEMAND

Many existing apartment buildings are ill-equipped to withstand current and growing climate-related pressures. Australian building standards lag behind international best practice for sustainability and climate resilience.<sup>42</sup> Further, less than 5 per cent of new apartment buildings exceed the minimum standards, with many older buildings falling well short.<sup>43</sup>

Poor design means that many apartment buildings rely on mechanical air conditioning to keep apartments cool during hot weather. Research by the University of Melbourne has found that many apartments in Melbourne would fail to meet international standards for maintaining safe indoor temperatures if power blackouts were to occur during extreme heat events.<sup>44</sup> These conditions expose residents to the risk of heat stress, which can worsen pre-existing health conditions including asthma, cardiovascular disease, diabetes and mental health conditions.<sup>45</sup> This highlights the risk for apartment residents who are not able to afford the use of air conditioning. In this way, energy hardship can be understood as an amplifier of climate vulnerability.<sup>46</sup>

Energy consumption required for heating and cooling is heavily influenced by the thermal quality of the building envelope<sup>47</sup> as well as the orientation of dwellings on a site and the location of apartments within the building.<sup>48</sup> Poorly positioned thermal mass and glazing orientation are the main

As Melbourne's climate changes the increase in weather extremes, especially heat is expected to exacerbate energy hardship and health outcomes for people living in apartments

elements that determine peak temperature during a heat wave, although thermal mass can be effective in reducing peak internal temperatures and provide benefits for the retention of heat in colder weather.<sup>49</sup> While standards for new apartment buildings have strengthened since 2017, they are still not robust enough to adequately address these issues,<sup>50</sup> and more can be done to support the retrofitting of existing apartment buildings.<sup>51</sup>

<sup>40</sup> Chatterton, M (2024), Strata Disaster: How prepared are our apartment communities for emergencies and disaster?, Owners Corporation Network, NSW, Australia

<sup>41</sup> Jessel, S, Sawyer, S, Hernandez, D (2019) Energy, poverty, and health in climate change: a comprehensive review of an emerging literature, *Frontiers in Public Health*, Vol. 7

<sup>42</sup> Solomonsz et al (2023)

<sup>43</sup> Easthope et al (2023)

<sup>44</sup> University of Melbourne (2017), Living Well: Apartments, Comfort and Resilience in Climate Change, Melbourne School of Design & Thrive Research, Melbourne

<sup>45</sup> World Health Organisation (2025), Heat and Health, United Nations, Geneva

<sup>46</sup> Jessel et al (2019)

<sup>47</sup> Daniel et al. (2024)

<sup>48</sup> Barnett, G, Beaty, R, Chen, D, McFallan, S, Meyers, J, Nguyen, M, Ren, Z, Spinks, A & Wang, X (2013) Pathways to climate adapted and healthy low-income housing, National Climate Adaptation Research Facility, Gold Coast, Australia

<sup>49</sup> Hernandez, C (2019), Heat waves, heat stress and underperforming apartments, University of Melbourne, Melbourne, Australia

<sup>50</sup> Pears, A (2023) The nightmare apartments – we need to do much better before we rush to more rental housing, *The Fifth Estate*.

<sup>51</sup> City of Melbourne (2024), Building Energy Use and Emissions Study, Melbourne, Victoria



# 6. COMMUNITY ENGAGEMENT, CO-DESIGN AND EVALUATION

A engagement program was undertaken to understand the lived experience of people facing energy hardship and to co-design effective strategies, policies and programmatic supports.

The Community Engagement, Co-design and Evaluation workstream involved the following activities.

## CO-DESIGN WORKSHOP

A co-design process shares decision-making power between communities and stakeholders, providing the people impacted by those decisions with a voice in the process. Held in May 2025, the Co-Design Workshop brought together a diverse group of 17 City of Melbourne residents with lived experience of energy hardship, along with council officers and Brotherhood of St. Laurence researchers. Together, participants built on the insights from the Community Conversations to define the problem of energy hardship in Melbourne. Through divergent thinking, the group explored a wide range of potential solutions and collaboratively prioritised ideas, combining lived insights with professional expertise. A select number of ideas were identified for further development and user journey mapping for each of these selected ideas.

## COMMUNITY CONVERSATIONS

City of Melbourne and Capire hosted Community Conversations at two existing community events to learn more about the experience and causes of energy hardship, what people are doing to combat energy hardship and some of the barriers and enablers to adaptation and improvement. Approximately 40 individual structured conversations were held at the events.

## PRE AND POST SURVEY

Participants completed a survey prior to attending the Co-Design Workshop and again two weeks after the workshop, following their trial of the products and advice. They answered the same questions in the pre and post survey, which asked participants to self-report their adaptive capacity (access to resources, community connection) to withstand extreme weather events like heat waves and cold snaps. The purpose of the survey was to assess changes in participants' self-perceived energy hardship and climate adaptive capacity, and to evaluate the impact of the products and advice provided. A total of 16 participants completed the baseline survey and 12 completed the post-workshop survey.



“The [heated throw] blanket is very good, and I can use it when I’m sitting and reading. Before I had the blanket I would go to sleep early because I was cold. Now I can stay warm with the blanket so I can stay up and I don’t have to go to sleep early”

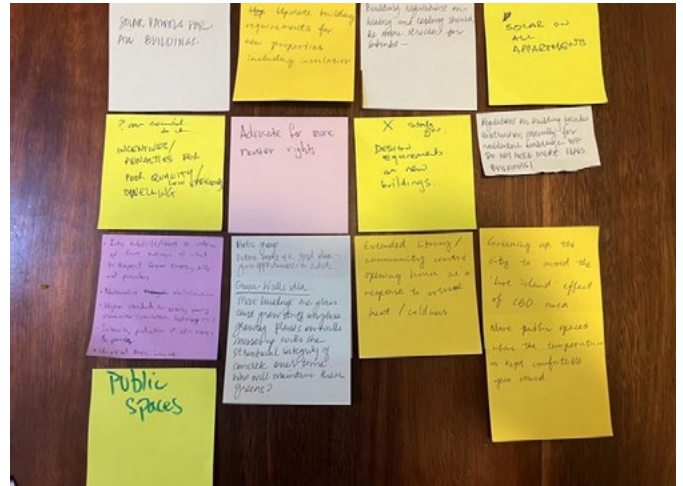
FOCUS GROUP PARTICIPANT, CARLTON

### INTERVENTION TRIAL

A collection of energy saving heating, cooling and cooking products and information resources were provided to each of the participants that attended the Co-Design workshop. The Energy Efficiency and Comfort Kit included:

- Energy efficiency thermometer
- Heated throw rug
- Door/window perimeter seal
- Door snake
- Removable window shade
- Induction cooktop
- Cool kit

An energy bill tariff review service was also offered to participants. Accompanying the Energy Efficiency and Comfort Kits was a booklet with simple information to help participants get the most for the items in the kit, cut energy costs and stay comfortable.



### INTERVIEWS

Participants were invited to participate in 30-minute one-on-one interviews to gain deeper insights into their experience and behaviour change post receiving the products and advice. The purpose was to gain more qualitative insights and to explain and validate the quantitative survey data. A total of 9 participants took part in the interviews.

### FOCUS GROUP

Interview participants were invited to participate in the 90-minute 'stories of change' focus group. Each participant was invited to share a story about the most significant change they experienced since participating in the trial. The purpose of the stories of change focus group was to capture rich, qualitative narratives that illustrate the personal and practical impact on participants' climate adaptive behaviours and attitudes.



# 7. FINDINGS FROM THE ENGAGEMENT AND CO-DESIGN

Findings from the Community Conversations, Co-Design Workshop, interviews and focus group shed light on the lived experience of people experiencing energy hardship and provide insights for the development of energy-related support programs with potential to alleviate cost of living pressures, accelerate electrification, improve energy efficiency, comfort, health and wellbeing, and build adaptive capacity of residents living in apartments.

## Challenges communities are facing

### **Significant and rising energy costs:**

Communities are facing significant energy costs, including rising energy bills and the high expense of energy-efficient upgrades and appliances.

**Limited control:** Some community members have limited control over their energy use or provider due to factors like embedded networks, rental restrictions, and building constraints.

**Confusing information:** Information about energy bills and energy efficiency is often confusing and inaccurate. This makes it hard for people to understand their energy use, leading to confusion, and some to disengage from managing their bills or energy choices.

**Distrust:** There is a lack of trusted sources of information (energy providers, landlords, and real estate agents are not trusted), leaving people unsure where to turn for reliable, helpful information about their energy use and rights.

**One of many challenges:** Energy hardship is just one of the many issues that community members are dealing with. Housing and wellbeing challenges affect comfort, social connection, and overall quality of life for many people.

**Building challenges:** Heritage and older buildings often limit what modifications residents can make, leaving homes cold, drafty, and energy inefficient.

## How people are adapting to energy hardship

**Limiting energy use:** Many people avoid using appliances like air conditioning and heating, and make a habit of turning off all devices, to avoid energy costs.

**Spending extensive periods outside the home:** To manage unaffordable heating and cooling costs, some people go to public spaces like libraries, shopping centres, or friends' homes to stay warm or to keep cool.

**Behavioural changes:** To stay comfortable while managing energy costs, some people adjust their behaviour, such as using fans instead of air conditioning, putting on more clothes during winter, exercising to stay warm, and using electric blankets or staying in just one area of the house like a bedroom. In the summer, some sleep in cooler areas of their homes, such as the living room.

**Home modifications:** To reduce energy use, many people make small modifications to their homes, such as switching to energy-efficient light bulbs, using timers, adding draught stoppers, and closing blinds.

**Lifestyle changes:** To cope with rising energy bills, people are adjusting their lifestyles (including taking on extra work and cutting back on socialising to afford bills).

## Supports needed to assist with energy hardship

**Trusted advisors:** Community members want trusted advisors who can offer personalised advice on understanding energy bills, reducing consumption, understanding rebates, and making informed choices about energy providers.

**Trusted information:** Community members want clear, trusted information on how to save energy and money.

**Home modification assistance:** Community members want assistance with home modifications including solar, retrofitting old homes, trials of affordable and energy-efficient appliances.

“We learnt at the workshop that some appliances have energy ratings, we learnt that we need to read our energy bills.”

FOCUS GROUP PARTICIPANT,  
NORTH MELBOURNE

## Key lessons for program design



The following key lessons have been drawn from the engagement, co-design and evaluation findings. It is expected that these insights will be coupled with research evidence and local authority expertise to enable an evidence-informed service and policy responses for combatting energy hardship.



### CREATE OPPORTUNITIES FOR BUILDING A SENSE OF CONNECTION AND COMMUNITY

There is a strong need for community connection and a desire to learn from others within the Melbourne community. While the reception to the products and energy saving was positive and broadly in line with expectations, the extent to which participants valued the engagement component, including building a connection between participants and to council, was unanticipated. Such connection builds social capital – an important factor for increasing climate adaptive capacity and decreasing energy hardship.<sup>52</sup>

Both the ideas developed by participants during the Co-Design Workshop and the evaluation data highlight a call to action for local governments to further investigate community building and connection as both a means to deliver energy-saving and resilience building initiatives - beyond what council can do alone - and as means to continuously learn and improve through connecting to a community of lived experience experts.

Council has opportunities to leverage existing networks and communities (e.g. libraries, maternal child health centres, community events) to deliver information and services in ways that are trusted, culturally relevant, and community-led.

<sup>52</sup> Drennan, L & Rasheed, A., 2020, Determinants of adaptive capacity for climate change adaptation: Considerations for regional Victoria. Griffith University, Brisbane.



### TRUSTED MESSENGERS, THROUGH THE RIGHT CHANNELS AT THE RIGHT TIME

Trust plays a foundational role in how community members respond to energy-related advice and support. Community members are more likely to accept and act on energy-related advice when it comes from sources they perceive as understanding, consistent, and genuinely invested in their wellbeing.

Participants reported that they want products and information that suit their immediate needs. A clear lesson from the evaluation is that different cohorts also have unique priorities and pain points. Information about energy-saving practices, and the promotion and access to energy saving products needs to be considered and targeted to different audiences.

While all participants highlighted the value of human connection and a trusted messenger, we also heard varying preferences for how information is received. For example, time-poor international students preferred receiving digital information via social media platforms, such as TikTok and Instagram Reels would also be effective. For older communities, trusted relationships and in-person communications are most helpful. Messaging through a trusted messenger was identified as important for multicultural communities, with established channels like community WhatsApp groups seen as effective means of communication.



### LIVED EXPERIENCE INSIGHTS ARE HIGH VALUE AND UNDERSCORE THE NEED FOR FURTHER AND ONGOING ENGAGEMENT

Lived experience and storytelling are invaluable for understanding how people think, prefer to receive, and use energy-saving products and advice.

Participant feedback showed that community members are interested in contributing to this issue and the work of local governments around it. Further and ongoing engagement will provide an opportunity to have greater representation from other cohorts experiencing energy hardship in engagement activities, and allow council to explore different experiences, perspectives and ideas on how to combat it.

“I want to thank the Council for being helpful. I have been able to share the information I learnt with my international student friends. Some have only been here three months. They were really thankful. The experience was really amazing”

FOCUS GROUP PARTICIPANT, CBD

# 8. PROGRAMMATIC RESPONSES FOR LOCAL GOVERNMENT

Insights from the community engagement and co-design process reveal the critical role for local government in addressing the root causes of energy hardship and building adaptive capacity. Priority responses identified through these insights are provided below for further development as part of future program design.



## EMPOWER RESIDENTS TO GET THE BEST ENERGY DEAL

**Provide an independent energy bill review service** to help residents understand their energy bills, identify and switch to alternative retail plans and access energy concessions; starting with low-income households and other vulnerable cohorts.



## FACILITATE COMMUNITY CONNECTION AND CAPACITY BUILDING

**Provide events and workshops** aimed at educating and upskilling community members on energy issues, ensuring that they are accessible, culturally appropriate and tailored to a diversity of target communities. Design events and associated activities to facilitate connection between people experiencing energy hardship and support the two-way sharing of information between residents and with council.



## PROVIDE TARGETED SUPPORT TO RENTERS AND VULNERABLE HOUSEHOLDS

**Provide tailored advice for renters** on their rights and the actions they can take to improve thermal comfort and reduce energy consumption, including in both apartments and standalone buildings.

**Provide targeted advice** to key cohorts such as multicultural communities, and international students. Ensure information is provided in suitable languages and communicated in culturally appropriate and accessible ways through trusted channels.

**Engage with housing providers** and other relevant institutions such as universities and student accommodation providers to provide better information to community about the energy system, tenant rights and opportunities to reduce energy costs.

**Provide free or discounted** products to help renters improve thermal comfort and energy efficiency.



## SUPPORT OWNERS TO UNDERTAKE HOME AND BUILDING UPGRADES

**Provide targeted information** on how to electrify and improve thermal efficiency, including the most cost-effective approaches. This information should be tailored for different building types, including low, medium, and high-rise apartment buildings. It may include free or low-cost energy efficiency assessments.

**Provide financial support for building upgrades** through grants, ensuring that apartment communities, including Owners Corporations, are eligible. Prioritise buildings that house vulnerable populations.

**Connect local consumers with trusted products and suppliers** to facilitate upgrades such as solar, hot water and heating upgrades, and thermal efficiency improvements.

**Provide advice and assistance** on accessing financial support provided by State and Federal governments.



### **BUILD THE CAPACITY OF APARTMENT COMMUNITIES**

**Establish a consistent point of contact** within council for apartment communities, based on the existing Business Concierge model currently offered by the City of Melbourne.

**Provide tailored information** for owners and residents on the opportunities for electrification, thermal performance and energy efficiency upgrades.

**Provide accessible training** for Owners Corporation Committee members to improve awareness and upskill them in delivering energy efficiency and electrification projects.

**Connect Owners Corporations with trusted advisors and suppliers** with expertise in delivering whole of building energy upgrades.

**Facilitate mutual capacity building by delivering regular events** designed to bring apartment building communities together to learn from each other, experts, and council staff, and to feed relevant information and ideas back to council.

**Develop guidance for Owners Corporations and apartment residents on navigating embedded networks**, including negotiation of better terms and pricing structures, upcoming legislative changes, and how to access more competitive on-market energy offers.



### **LEAD INNOVATION AND DEMONSTRATE WHAT WORKS**

**Catalyse whole of building electrification and energy efficiency projects** by working with apartment building Owners Corporations to promote energy retrofits.

**Develop and promote case studies** demonstrating how whole of building upgrades can be delivered in the apartment sector, including the benefits to owners and residents.

**Develop and pilot models to share the benefits of renewable energy technologies** like solar and batteries with apartment communities, including renters.

# 9. PRIORITY POLICY RESPONSES

Many of the policy levers required to address the systemic causes of energy hardship lie outside the control of any Australian local government. However, there is a clear need for local governments to advocate on behalf of their community for legislative change, policy intervention and market reform at the state and federal level.



## REGULATE TO IMPROVE BUILDING QUALITY AND EFFICIENCY

**Advocate to continue strengthening the Victorian Government's proposed minimum energy efficiency standards for rental properties**, requiring rental properties to have higher levels of insulation and efficient electric appliances including heating and cooling.

**Advocate for nationwide mandatory disclosure of building energy efficiency** for all residential buildings at the point of sale to improve transparency, inform consumer decisions and provide a market signal for investment in building improvements and energy efficiency appliances.

**Advocate for measures to strengthen the next National Construction Code** to bring existing standards into line with international best practice for new homes and significant renovations.



## DELIVER EQUITABLE SUPPORT FOR ENERGY UPGRADES

**Advocate together with councils and community organisations** to support a national energy upgrades program, with a focus on ensuring low-income households are prioritised. The program would provide households with financial assistance and trustworthy advice, and could be delivered by state or local governments or nonprofits.



## CATALYSE HOUSEHOLD ELECTRIFICATION

**Advocate in support of the phase-out of gas appliances**, including at the time of replacement in existing homes, new homes and commercial buildings, including individual units and apartment building central services. This should include specific program pathways such as technical and financial support to assist apartment communities, renters and low-income households in transitioning to electric appliances.



### EMPOWER APARTMENT COMMUNITIES TO ACT

**Advocate to the Victorian Government to reform the Owners Corporation Act** to ensure that it drives more sustainable outcomes, including lowering of approval thresholds for building upgrades, better definition of 'sustainability items' and requirements for all OCs to plan for electrification via their maintenance plans and funds.

**Advocate to the Victorian Government to establish a Strata Commissioner** dedicated to supporting strata governance and compliance, consumer protection, policy development and regulatory reform.

**Partner with other councils and allied groups to advocate** to the Commonwealth and Victorian governments for appropriately targeted support for apartment owners, particularly those with lower income tenants.



### IMPROVE ENERGY AFFORDABILITY THROUGH MARKET REFORMS

**Advocate to increase access to energy concessions,** for example to international students.

**Investigate and advocate for retail market reforms** to better support low-income households, such as through a mandatory social tariff or default offer for low-income households.

**Advocate to improve conditions for residents in embedded networks,** including better access to on-market energy offers, improvements to concession access, lowering regulated maximum prices, more transparent disclosure of pricing structures and better enforcement of regulations.

**Advocate for supports to transition embedded networks to renewable energy** to meet the Victorian Government's renewable energy obligations in 2027, pathways for offsite renewable energy for legacy networks, and a clear timeframe for removing gas embedded networks.

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