



Legislative Assembly
Environment and
Planning Committee

Renewable and affordable energy for apartments

Inquiry

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Terms of reference

Inquiry into renewable and affordable energy for apartments

On 3 December 2025, the Legislative Assembly agreed to the following motion—

That this House refers:

An inquiry into how best to expand access to renewable and affordable electricity for Victorians in apartments and other multi-unit dwellings, including consideration of:

- (a) recent developments in energy supply and technology options for these dwellings over the last four years;
- (b) barriers and inequities experienced by Victorians in such dwellings, including renters and social housing tenants, when accessing renewable and affordable electricity compared with other households;
- (c) options to increase access to renewable and affordable electricity for these dwellings, including shared rooftop solar, balcony or façade solar, community batteries and virtual power plants;
- (d) the likely impacts of those options on different groups of Victorians, including by tenure type, income, housing type and location, on the type, affordability and reliability of energy they receive; and
- (e) any legislative, regulatory, planning or market reforms that could support the implementation of options, consistent with Victoria's legislated emissions reduction and renewable energy targets

to the Environment and Planning Standing Committee for consideration and report no later than 30 September 2026.

Chair's foreword

Victorian households have embraced rooftop solar in record numbers, reducing energy costs and contributing to a cleaner energy future. Yet the benefits of this transition have not been shared equally. While solar has become commonplace on freestanding, owner-occupied homes, many Victorians living in apartment buildings and other multi-unit dwellings continue to face significant barriers to accessing renewable and affordable energy.

This Inquiry was established to examine how those barriers can be overcome. The Committee heard compelling evidence from across the renewable energy, strata, housing, legal, academic and community sectors. We found that Victoria is at an important crossroads. As apartment living becomes more common, ensuring these residents can participate in the renewable energy transition is a matter of equity and fairness.

Apartment communities are diverse, but many include households that are particularly vulnerable to energy hardship, including renters, people on low incomes, older Victorians and social housing tenants. Too often these households are excluded from the financial and environmental benefits that renewable energy technologies can deliver. If Victoria is to achieve its renewable energy and emissions reduction goals, apartment residents cannot be left behind.

The Committee found that the barriers facing apartment buildings are distinct and complex. Shared ownership arrangements, technical limitations and financial constraints can all prevent sustainability projects from progressing. Owners corporation committees are made up of volunteers who must navigate complicated legal, technical and financial decisions often without specialist expertise. At the same time, existing legislative settings often make it difficult for apartment owners to authorise sustainability upgrades, even where there is broad support for change.

Our Inquiry identified significant opportunities to address these challenges. Stronger support for owners corporations, and legislative reforms that lower restrictive voting thresholds and require owners corporations to regularly consider sustainability, could help unlock renewable energy generation and apartment electrification. The Committee also believes there is merit in Victoria considering the establishment of a dedicated strata commissioner to provide leadership and oversight of the apartment sector.

The evidence also demonstrated the importance of targeted action to support vulnerable groups. Renters will benefit from better information about their apartment's energy performance, and proposed reforms will help residents in embedded networks receive protections and access to affordable energy that match those available to other consumers. In social housing, continued government support will be essential to expanding access to solar energy.

Technological innovation provides further reasons for optimism. New energy solutions, including shared batteries, building integrated photovoltaics, plug-in solar systems, and virtual energy networks and power plants, are expanding the options available to apartment residents. While some apartment buildings will continue to face substantial barriers to rooftop solar due to technical constraints, these emerging technologies offer practical pathways to improve energy affordability, increase renewable energy uptake and strengthen grid resilience.

The Committee also heard that clearer and more proactive management of the electricity network will be crucial. Network capacity constraints continue to impede progress. Greater transparency and better planning from energy distributors can help create the conditions necessary for apartment buildings to participate fully in Victoria's energy transition.

The recommendations in this report are intended to create a more inclusive, equitable and sustainable energy future. Together, they seek to support apartment residents to access the benefits of renewable energy and strengthen the governance systems that underpin decision-making in strata communities.

I thank all those who contributed to this Inquiry, including individuals, community organisations, industry representatives, government agencies and academics who shared their expertise and lived experience. Their evidence has informed a comprehensive set of recommendations that, if implemented, will help ensure that all Victorians can participate in and benefit from the state's renewable energy transition.

I also thank the Deputy Chair and my fellow Committee Members for their collaborative and dedicated approach to the Inquiry and acknowledge the diligence and assistance of the Committee Secretariat in delivering this report.

A handwritten signature in black ink, reading 'Juliana Addison' in a cursive script.

Juliana Addison MP
Chair

Executive summary

Victoria is experiencing strong growth in residential solar, but uptake remains concentrated in freestanding, owner-occupied homes, leaving many apartment residents behind. Expanding access to renewable energy in apartment buildings is critical to advancing energy equity across the state.

On 3 December 2025, the Legislative Assembly referred an inquiry to the Environment and Planning Committee (the Committee) into expanding renewable and affordable energy for apartments and other multi-unit dwellings. The Committee examined how innovation is increasing the range of energy solutions available to apartment buildings and what regulatory and market reforms are needed to increase uptake. The interconnected issues of energy efficiency and electrification were also explored.

The Committee gathered evidence from the renewable energy, strata, legal, academic, government and social housing sectors, which exposed an uneven uptake of residential solar across different housing types and tenures. The evidence showed how best-practice building governance can make it easier to improve the sustainability of buildings. It also highlighted why targeted measures are required so that apartment households who are renting, part of an embedded network (EN) or living in social housing can access more affordable and renewable energy.

The Committee found that technological innovation and more transparent and proactive management of the electricity grid will enhance energy upgrade options for more challenging taller and older apartment buildings. It identified the important role that complementary technologies (such as portable solar) and virtual energy market models can play in improving apartment residents' access to more affordable and renewable energy.

Solar inequity in Victoria

Victorian households have embraced renewable energy technologies, especially rooftop solar, to reduce costs and environmental impact, but uptake has been much lower in apartments and other multi-unit dwellings (including social housing). This is mainly due to higher costs, technical challenges and the complexity of navigating the shared ownership arrangements in apartment buildings.

For several years, Victorian and Australian government policies and programs have been supporting solar and improving the sustainability of homes, including apartments. Programs specifically targeting apartment buildings have transformed the solar industry's capacity to service this sector. However, other broader residential policies and programs are not well suited to the unique legal, technical and governance requirements of higher density housing.

More Victorians than ever before are living in apartment buildings and while apartment communities are diverse, they often include households vulnerable to energy hardship, such as those on low incomes, lone occupants, renters and social housing tenants. Increasing residential solar in apartment buildings and social housing is important to ensure equitable access to affordable clean energy, and it is also essential for helping Victoria transition to renewable energy and achieve net zero emissions.

Legislative reform to boost sustainability

Strata properties are governed by owners corporations (OCs) and larger complexes, such as apartment buildings, have OC committees to deal with operational matters. These committees consist of volunteer owners with varying levels of expertise, and their capacity to plan, finance and secure approval for sustainability upgrades is strongly influenced by their governance capabilities and knowledge of renewable energy systems.

Moreover, major works to improve the sustainability of apartment buildings must be approved by at least 75% of apartment owners. This high approval threshold, combined with the limited governance experience and technical expertise of OC committees, often prevents sustainability initiatives from proceeding.

Strengthening governance in apartment buildings can create a stronger foundation for delivering successful sustainability initiatives. The Committee recommends improving the capability of OC committees through mandatory training and an information hub to enhance their ability to plan, secure approval for and implement upgrades such as energy efficiency measures, electrification or residential solar.

Victoria can also draw lessons from other Australian states that have established a strata commissioner to provide sector leadership, oversight and dispute resolution. This role can help improve governance standards and increase transparency—key factors that support collective decision-making for sustainability upgrades.

Establishing a clear legislative imperative for OCs to prioritise sustainability would further encourage upgrades. The Committee recommends defining ‘sustainability item’ in OC legislation to include measures such as solar installations and electrification, and requiring OCs to consider sustainability at their annual general meetings. Lowering the voting threshold required to approve such upgrades would also make it easier for OCs to act. These changes would reduce the ability of a minority of apartment owners to block proposals that have broad support, enabling more apartment buildings to proceed with energy efficiency upgrades.

Safeguarding energy equity

Some apartment residents face extra challenges in accessing renewable and affordable energy, especially renters, households in buildings with an EN, and social housing tenants. These residents have little control over their building’s energy

systems, while those who do (landlords and the EN operators) often have limited incentive to pursue upgrades, such as residential solar or apartment electrification. Although community housing organisations are committed to tenant wellbeing, their not-for-profit operating model can constrain their capacity to fund sustainability improvements.

Targeted measures are needed to safeguard vulnerable Victorians' access to more affordable and renewable energy. For rental households living in apartment buildings, the Committee recommends the introduction of an energy performance disclosure scheme to improve outcomes. Making the energy performance of rental apartments visible to prospective tenants will incentivise landlords to invest in upgrades, with a view to increasing both property appeal and value.

For residents in ENs, continued reform is essential to ensure they have equivalent protections, access to affordable energy and the ability to choose retailers, consistent with other households. Outcomes must be monitored to ensure reform is effective.

In the social housing sector, sustained government assistance is critical to support electrification, improve thermal performance and expand access to residential solar for apartments. Support should extend to feasibility, design work and infrastructure cost gaps.

Overcoming technical challenges

Apartment buildings vary widely in height, age, design and construction; all these factors shape residents' ability to access renewable and affordable energy. Many residents are motivated to electrify and adopt solar, but face technical barriers such as outdated electrical infrastructure, limited roof space and constrained network capacity. Addressing these challenges requires more transparent and proactive management of the electricity grid, subsidies tailored to building classifications and support for complementary technologies.

Electricity network constraints remain a major barrier to apartment building electrification and solar installation, compounded by limited access to transparent and timely data and inequitable cost burdens for upgrades. The Committee recommends that distribution network service providers provide standardised, accessible network information and proactively plan upgrades. At the same time, funding models for network augmentation should be reformed to address the inequitable financial burden on first mover apartment buildings.

Financial support and regulatory reform are also needed to boost complementary measures such as shared batteries and building integrated photovoltaics like façade solar. Battery systems increase energy self-consumption and support grid stability. Coupling rooftop solar systems with building integrated photovoltaics increases the energy-generation capacity of tall apartment buildings, both in terms of daily generating period and total energy generated.

The Committee recommends the development of tools, templates and case studies to assist the strata sector to deliver renewable energy and electrification upgrades. Initiatives to strengthen Victoria's electrical workforce are also important. The state needs more electricians with up-to-date renewable energy expertise and familiarity with the complexities of apartment building installations.

Embracing complementary measures

The significant barriers to retrofitting residential solar in apartment buildings mean that, for many properties, it remains a long-term or impractical option. For this reason, it is important that Victoria supports alternative approaches that can complement onsite solar generation. These include apartment electrification (replacing fossil gas appliances with more efficient electric alternatives), plug-in solar systems and virtual energy market models.

Apartment electrification can deliver significant benefits to households and society. It can lower energy consumption and costs, improve health and comfort, and help Victoria achieve its emissions reduction targets. The Committee recommends a dedicated apartment electrification strategy to help accelerate this transition by providing pathways suited to different building classifications and accounting for shared gas infrastructure.

Plug-in solar and battery systems are small, portable units that can be installed on apartment balconies to provide a modest source of renewable electricity, helping residents reduce energy costs. Their lower upfront cost compared with rooftop systems makes them more accessible to renters, though their limited energy-generation capacity means they are best suited as a supplementary solution.

Likewise, virtual power plants and virtual energy networks can increase renters' access to renewable energy by allowing energy to be redistributed across households and communities without the need to install solar. They also improve grid resilience by balancing supply and demand, reducing disruptions and lowering the need for additional large-scale generation.

The Committee recommends the Victorian Government explore the development of technical standards, safety regulations, energy market settings and consumer protections to support greater adoption of these complementary measures.

Findings and recommendations

1 Solar inequity in Victoria

FINDING 1: About 33% of Australian households and 20% of Victorian households now have residential solar. These systems generate a significant proportion of the energy used at the state and national levels.

4

FINDING 2: Residential solar uptake is heavily skewed towards owner-occupied, freestanding homes in Victoria. Installation in apartment buildings and other multi-unit dwellings is typically more complicated and therefore less common.

7

FINDING 3: Technological innovation is increasing options for apartment households to access solar energy. Products and market solutions such as shared solar systems, building integrated photovoltaics, plug-in solar and batteries, community batteries, virtual power plants and virtual energy networks are now available, although some barriers exist to their widespread deployment.

16

FINDING 4: The number of Victorians living in apartments is increasing due to population growth, planning policies and reforms, and the relative affordability of apartments over freestanding homes.

18

FINDING 5: Low-income households, lone occupants, renters and social housing tenants are over-represented in apartment buildings. Scaling up solar for apartments will improve energy affordability for apartment residents and help ease the cost of living for some of Victoria's most vulnerable households.

21

FINDING 6: Increasing solar in apartment buildings is foundational to Victoria's transition to a renewable energy and net zero carbon emissions future.

23

FINDING 7: The Victorian Government's Solar for Apartments Program is demonstrating the feasibility and benefits to individual households and solar retailers of installing shared rooftop solar on apartment buildings.

27

FINDING 8: Federal and state government investment in the sustainability of social housing is improving the thermal and energy efficiency of homes and supporting their electrification. It is also increasing residential solar in community housing.

29

2 Legislative reform to boost sustainability

FINDING 9: Apartment governance involves diverse stakeholders with varied capabilities and competing interests. This complicates decision-making and can inhibit sustainability upgrades in apartment buildings as the incentives and impacts are not uniform.

41

FINDING 10: The introduction of strata commissioners in other jurisdictions has improved governance practices in the strata sector, increased accountability of strata services and created a proactive culture around sustainability upgrades in apartment buildings.

45

RECOMMENDATION 1: That the Victorian Government appoint a strata commissioner based on the New South Wales and Queensland models and guided by an advisory committee of industry stakeholders.

46

FINDING 11: An online information and communication hub for the apartment sector could improve governance and empower owners corporations and apartment residents with the knowledge and resources to participate in Victoria's energy transition.

48

RECOMMENDATION 2: That the Victorian Government develop an online strata hub encompassing:

- a registry of building and owners corporation records
- guidance materials and practical tools to improve apartment governance and pursue sustainability upgrades
- a central platform for communication and resource sharing within the sector.

48

FINDING 12: Improving the governance practices and financial management of owners corporation committees by mandating introductory training for new members could help expedite sustainability upgrades in apartment buildings.

50

RECOMMENDATION 3: That the Victorian Government implement mandatory online training for owners corporation committee members focused on best practice governance, financial management and sustainability. This training should be brief, straightforward and available to all apartment residents on a voluntary basis. 50

FINDING 13: The current definition of ‘sustainability item’ in the *Owners Corporation Act 2006* (Vic) is too narrow to encompass all types of sustainability initiatives. 54

FINDING 14: Incorporating sustainability into their annual maintenance plan and budget will help owners corporations understand their building’s energy consumption and prioritise sustainability upgrades. It may also assist in gaining owners’ support for improvements. 57

RECOMMENDATION 4: That the Victorian Government seek to amend the *Owners Corporation Act 2006* (Vic) to expand and clarify the definition of ‘sustainability item’ so that it encompasses all current and potential future means to minimise environmental harm and conserve natural resources, and require owners corporations to consider sustainability (including electrification) regularly through a standing agenda item at annual general meetings and through maintenance planning and budgeting. 57

FINDING 15: A lower decision-making threshold for sustainability upgrades will empower owners corporations to improve the energy efficiency of their buildings and/or install residential solar. It will prevent a minority of lot owners from preventing upgrades that have majority support. 59

RECOMMENDATION 5: That the Victorian Government seek to amend the *Owners Corporation Act 2006* (Vic) to reduce the approval threshold for sustainability upgrades to 50% so it aligns with the sustainability infrastructure resolution provided for by the *Strata Schemes Management Act 2015* (NSW). 59

3 Safeguarding energy equity

FINDING 16: Rental households are focused on maintaining their tenancy and may be reluctant to request sustainability upgrades or repairs due to fear of eviction or rental rate increases. 67

FINDING 17: A mandatory disclosure scheme for the energy efficiency of apartments at the point of sale or lease would incentivise owner-investors and short-term owners to support energy upgrades in apartment buildings. This will be particularly effective in a property market that favours buyers and/or tenants by delivering a tangible return on investment.

72

RECOMMENDATION 6: That the Victorian Government implement a voluntary disclosure scheme for the energy efficiency of homes, including apartments, at the point of sale or lease to prepare for a future mandatory scheme.

72

FINDING 18: Long term rental households in Victorian apartment buildings have limited say over the management of their apartment and investment into its sustainability.

77

FINDING 19: Embedded electricity networks established by property developers can lock owners corporations into long contracts, prevent the installation of solar on apartment buildings and fail to pass on the benefit of more affordable energy to apartment owners and residents.

82

FINDING 20: Apartment residents living in embedded electricity networks can find it challenging to switch energy retailers or access market rates for electricity.

82

FINDING 21: Embedded electricity networks negotiated in the best interest of apartment residents can deliver more affordable and renewable energy, such as those established by community housing organisations for social housing tenants.

82

FINDING 22: New embedded network operators can avoid the 5% onsite renewable energy requirement by becoming licenced energy retailers with the Essential Services Commission.

85

RECOMMENDATION 7: That the Victorian Government monitor the efficacy of the Embedded Networks Review reforms to ensure all apartment residents living in embedded networks have equitable access to renewable and affordable energy.

87

FINDING 23: The sustainability of Victoria's social housing stock is highly varied. New social housing apartments are typically built to high energy efficiency standards and sometimes incorporate residential solar. Older freestanding homes and apartments tend to have poor thermal and energy performance.

89

FINDING 24: Community housing organisations can find it challenging to raise capital to improve the sustainability of the apartments and other multi-unit dwellings they manage.

90

FINDING 25: Ongoing, tailored government investment is needed to electrify, improve thermal and energy efficiency, and increase residential solar in both community and public housing apartments and other multi-unit dwellings.

93

RECOMMENDATION 8: That the Victorian Government assist the social housing sector to improve the sustainability of its apartments and other multi-unit dwellings through thermal and energy efficiency improvements, electrification and particularly residential solar and batteries. Support should extend to feasibility, design work and infrastructure cost gaps.

94

FINDING 26: A small but significant percentage of low-income households experience persistent energy hardship despite access to energy retailer support, such as concession tariffs and payment plans.

96

4 Overcoming technical challenges

FINDING 27: It is technically difficult and expensive for older buildings to electrify and install solar due to building design, outdated electrical wiring and switchboards, and safety requirements that involve costly and complex retrofitting. In some cases, these barriers are financially prohibitive.

103

FINDING 28: Owners corporations have limited budgets and are risk averse, meaning they typically prioritise urgent maintenance repairs over renewable energy projects, especially if the building is older and when the economic benefits of solar are uncertain.

104

FINDING 29: Electrification pathways are unclear for owners corporations, making it difficult for them to determine whether their building is suitable for electrification without paying for costly and time-consuming feasibility assessments.

104

RECOMMENDATION 9: That the Victorian Government consider establishing means-tested financial assistance to support critical front-of-meter electrical infrastructure upgrades (such as switchboards and wiring, excluding infrastructure behind the meter) that enable rooftop solar, batteries and electrification in apartments. This should include feasibility assessments and technical advice for owners corporations.

104

FINDING 30: Limited roof space, poor roof conditions and space trade-offs for shared amenities significantly restrict the capacity of apartment buildings to install conventional rooftop solar systems.

107

FINDING 31: Residents in high-rise buildings cannot access the same benefits or bill savings from rooftop solar due to limited energy-generation capacity per household compared with stand-alone dwellings or smaller buildings.

107

FINDING 32: The design and eligibility criteria of the Solar for Apartments Program are excluding residents in older, larger and more complex apartment buildings from accessing support to install residential solar.

110

RECOMMENDATION 10: That the Victorian Government extend the Solar for Apartments Program beyond April 2027 with expanded eligibility criteria and program settings that target larger and more complex apartment buildings.

110

FINDING 33: Shared battery storage systems are more effective in apartment settings than individual batteries and can maximise self-consumption, support grid stability and equitably reduce household bills when deployed at a building and precinct level.

113

RECOMMENDATION 11: That the Victorian Government incorporate battery storage systems into the Solar for Apartments Program to maximise the effectiveness of rooftop solar.

114

RECOMMENDATION 12: That the Victorian Government develop future programs that are explicitly designed to encourage building-level and precinct-scale renewable energy storage and shared energy management solutions for apartment buildings.

114

FINDING 34: Rooftop solar systems coupled with building integrated photovoltaics increase the energy-generation capacity of apartment buildings both in terms of daily generating period and total energy generated. This enables them to meet the energy demands of mid- and high-rise apartment buildings where roof space is constrained and the number of lots requiring energy is higher.

120

RECOMMENDATION 13: That the Victorian Government work with the Australian Government and industry to develop clear product standards and energy performance accreditation for building integrated photovoltaics, which recognise their dual construction and renewable energy purpose. Furthermore, the Victorian Government should revise building and planning regulations to encourage the use of building integrated photovoltaics in residential buildings.

120

FINDING 35: Apartment residents can find it difficult to navigate technically complex renewable energy projects because they lack access to tailored education, technical advice and planning support.

126

RECOMMENDATION 14: That the Victorian Government work closely with the strata sector to develop standardised tools, templates and case studies to support owners corporations to plan and deliver renewable energy and electrification projects.

126

FINDING 36: Areas of the electricity grid that were not designed to support modern electricity loads are a significant barrier to electrification.

128

FINDING 37: Limited access to affordable, timely and transparent network capacity information is preventing effective electrification planning, increasing costs and delaying renewable energy projects in apartment buildings.

131

FINDING 38: The current approach to funding electricity network upgrades places a disproportionate cost burden on individual apartment buildings, particularly first movers, creating inequitable outcomes and discouraging electrification.

134

RECOMMENDATION 15: That the Victorian Government require distribution network service providers to implement a standardised approach for providing network information to owners corporations, including free preliminary capacity assessments for electrification within 20 business days.

134

RECOMMENDATION 16: That the Victorian Government encourage the Australian Energy Market Commission and the energy sector to develop transparent pricing models for grid augmentation that address the inequitable financial burden on first mover apartment buildings.

134

FINDING 39: Distribution network service providers are failing to provide sufficient data to customers about low-voltage networks while engaging in largely reactive planning practices that are inhibiting electrification.

137

RECOMMENDATION 17: That the Victorian Government require distribution network service providers to publish granular low-voltage electricity network data and undertake proactive network planning that is publicly accessible to enable apartment electrification.

137

FINDING 40: Under the Plan for Victoria, apartments will become more common in regional hubs, therefore regional Victorians stand to benefit from proactive grid planning and increased access to renewable energy and battery storage, particularly during power outages and extreme weather events. However, smaller populations make it harder for distribution network service providers to justify investment to improve electricity grid capacity.

137

RECOMMENDATION 18: That the Victorian Government advocate to the Australian Energy Regulator to support distribution network service providers to systematically augment grid capacity in areas with a high density of apartments and in regional areas with existing network constraints, to ensure these cohorts are not left behind in the energy transition.

137

FINDING 41: Through the recent expansion of the Electrification Skills Program, the Victorian Government recognises the need to continue increasing the number of qualified electricians and energy workers equipped with specialised skills, training and experience to meet future electrification demands. However, it is unclear if the program offerings will cover electrification in strata environments.

141

FINDING 42: Installers can face cashflow challenges with strata electrification and solar projects due to long timelines and late-stage feasibility issues leading many to pursue easier renewable energy projects in detached housing.

144

RECOMMENDATION 19: That the Victorian Government continue to work closely with industry to overcome cashflow challenges and workforce shortages to improve the capability of installers and retailers working on apartment solar and electrification projects, particularly in regional areas.

144

5 Embracing complementary measures

FINDING 43: It is more complicated and expensive to electrify apartment buildings than freestanding homes due to technical and governance challenges arising from building density, age and resident diversity. **148**

FINDING 44: The varied age and typology of apartment buildings combined with the broad range of technical and governance challenges inhibiting their electrification merits a specific policy focus on electrification in this sector. **151**

RECOMMENDATION 20: That the Victorian Government establish an apartment electrification strategy with gas substitution pathways tailored to each building typology (size and age) and owners corporation tier. It should also account for the various shared-gas appliances in use across apartment buildings. **151**

FINDING 45: The Victorian Energy Upgrades program offers important support for the electrification of freestanding homes and businesses; however, it provides limited offerings specifically tailored to apartment buildings. **154**

RECOMMENDATION 21: That the Victorian Government work with the apartment sector and local governments to develop means-tested financial support tailored to enable the electrification of apartment buildings of all ages and typologies. **155**

FINDING 46: Apartment electrification that incorporates electric vehicle charging can support households to access more affordable and renewable transport. It may also supplant the need for residential batteries as bi-directional charging becomes more common. **158**

FINDING 47: Incorporating high environmentally sustainable development standards in planning schemes has helped to ensure that future apartment buildings incorporate access to renewable energy generation. **160**

FINDING 48: Plug-in solar and battery systems installed on well-situated balconies can provide apartment residents with a modest source of renewable electricity and power storage, reducing their reliance on the grid and their energy costs. However, Australia currently lacks the technical and safety standards, and regulation to enable their deployment. **168**

FINDING 49: Plug-in solar and battery systems are more affordable than larger, permanent rooftop systems on apartment buildings. While this makes them more accessible to rental households than a permanent system, their limited energy-generation capacity means they are more suitable as a supplementary solution.

168

RECOMMENDATION 22: That the Victorian Government investigate the development of technical standards, safety regulations and a registration scheme to enable plug-in solar and batteries in Victorian apartments and multi-unit dwellings.

169

FINDING 50: Virtual power plants and virtual energy networks can empower households with solar and a battery to sell their excess energy. They also enable households without solar to access more affordable and renewable energy generated by others.

176

FINDING 51: Virtual power plants and virtual energy networks improve the resilience of the electricity grid by balancing energy supply and demand, minimising disruptions and reducing the need for new solar and wind farms.

176

RECOMMENDATION 23: That the Victorian Government investigate options to refine energy market settings to incentivise strata households to participate in virtual power plants and virtual energy networks.

176

RECOMMENDATION 24: That the Victorian Government strengthen consumer protections for virtual power plant and virtual energy network participants and develop easy-to-understand educational material and resources for consumers about these energy models.

176

FINDING 52: Coupling residential solar and batteries on social housing with a virtual power plant can expand access to renewable energy, improve the resilience of the electricity grid and support Victoria's transition to renewable energy.

178

RECOMMENDATION 25: That the State Electricity Commission of Victoria provide apartment and social housing residents with expanded avenues, such as virtual power plants, to access renewable and affordable energy.

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Acronyms and terms

Acronyms

AC	alternating current
ACT	Australian Capital Territory
ACSL	Australian College of Strata Lawyers
AER	Australian Energy Regulator
AGM	annual general meeting
AI	artificial intelligence
ANU	Australian National University
ASBEC	Australian Sustainable Built Environment Council
AATSE	Australian Academy of Technological Sciences and Engineering
BIPV	building integrated photovoltaics
BTM	behind the meter
CASBE	Council Alliance for a Sustainable Built Environment
CAV	Consumer Affairs Victoria
CBD	central business district
CEEM	Collaboration on Energy and Environmental Markets
CHIA Vic	Community Housing Industry Association Victoria
CHO	community housing organisation
DC	direct current
DEECA	Department of Energy, Environment and Climate Action
DNSP	distribution network service provider
ECA	Energy Consumers Australia
EESHV	Energy Efficiency in Social Housing Program
EN	embedded network
EPC	Energy Performance Certificate
ESD	environmentally sustainable development
EV	electric vehicle
FCV	Financial Counselling Victoria
FTM	front of the meter
GBCA	Green Building Council of Australia

GW	gigawatt
HAAG	Housing for the Aged Action Group
HCA	Housing Choices Australia
HVAC	heating, ventilation and air conditioning
kW	kilowatt
kWh	kilowatt hours
kWp	kilowatt peak
LGA	local government area
LMBF	Let Me Be Frank
Mt	megatonne
MW	megawatt
MWh	megawatt hours
NABERS	National Australian Built Environment Rating System
NatHERS	Nationwide House Energy Rating Scheme
NCC	National Construction Code
NECA	National Electrical and Communications Association
NSW	New South Wales
OC	owners corporation
OC Act	<i>Owners Corporations Act 2006 (Vic)</i>
OCN	Owners Corporation Network of Australia Limited
PFP	passive fire protection
PV	photovoltaic
RDRV	Rental Dispute Resolution Victoria
SA	South Australia
SCA Vic	Strata Community Association Victoria
SEC	State Electricity Commission of Victoria
SHEPI	Social Housing Energy Performance Initiative
SPCHG	South Port Community Housing Group
sqm	square metre
STC	small-scale technology certificates
UK	United Kingdom
UNSW	University of New South Wales
VCAT	Victorian Civil and Administrative Tribunal
VCOSS	Victorian Council of Social Service

VGA	Victorian Greenhouse Alliance
VEEC	Victorian Energy Efficiency Certificate
VEN	virtual energy network
VEU	Victorian Energy Upgrades program
VPP	virtual power plant
VPTA	Victorian Public Tenants Association
VTHC	Victorian Trades Hall Council

Terms

alternating current (AC)

electric current where the flow of electrons periodically reverses direction, and which is the form of electricity that powers household lighting and appliances.

back-feeding

the unintended and irregular reverse flow of electricity from solar back into the grid or internal circuits.

behind the meter (BTM)

technology located on the consumer's side of the electricity meter when referring to renewable energy systems installed in a home or business.

bi-directional charging

a two-way energy technology that allows an electric vehicle to both draw electricity from the grid to charge its battery and discharge that stored energy outward to power external devices, a home or the electricity grid.

building integrated photovoltaics (BIPV)

solar photovoltaic cells incorporated into construction materials.

common areas

areas of a multi-unit complex shared between residents such as the rooftop, foyers, lifts, driveways and car parks. Also known as **common property**.

community batteries

mid-scale energy storage systems installed centrally within a community (such as at a local sports facility or council offices) and connected to nearby rooftop solar systems. Also known as **neighbourhood batteries**.

community housing

social housing that is managed (and often owned) by a not-for-profit community housing organisation.

direct current (DC)

electric current that flows directly, and which is the form of electricity generated by photovoltaic panels.

distribution network service provider (DNSP)

organisation that owns, operates and maintains the physical infrastructure of the electricity grid, such as power poles, wires, transformers and substations, and supplies and installs electricity meters. Also known as an **energy distributor**.

draughtproofing

the process of sealing unintended gaps and cracks in a building to stop uncontrolled outside air from entering and conditioned inside air from escaping.

electricity grid

the transmission and distribution network that carries electricity from power plants to homes and businesses. Also known as the **grid**.

electrification

the process of replacing appliances, vehicles or buildings powered by fossil fuels (such as petrol and gas) with those powered by electricity.

embedded network(EN)

a privately owned and operated energy distribution system specific to a property. It involves a single metered connection to the grid and submeters for individual apartments or units.

embedded network operator

entity that manages an embedded network and buys energy in bulk from a retailer and on-sells it to individual households.

energy equity

occurs when all consumers can fairly benefit from the energy system and can access and use energy services to live a comfortable, dignified and healthy life.

façade solar

one type of building integrated photovoltaics where external wall cladding or windows are made of solar photovoltaic panels.

feed-in tariff

the rate an electricity retailer pays households for any excess renewable energy a residential solar system sends back to the grid.

front of the meter (FTM)

located on the utility (energy distributor) side of the electricity meter when referring to renewable energy systems installed in a home or business.

gigawatt (GW)

unit of power equal to one billion watts.

inverter

electronic device that converts direct current into alternating current.

kilowatt (kW)

unit of power equal to one thousand watts.

kilowatt hours (kWh)

measure of the amount of electricity used over time.

kilowatt peak (kWp)

measure of the maximum amount of electricity a solar PV system can produce under standard laboratory test conditions.

lot

an individually owned apartment, unit or townhouse within a strata scheme.

megawatt (MW)

unit of power equal to one million watts.

megawatt hours (MWh)

measure of the amount of electricity used over time, equal to one thousand kilowatt hours.

multi-unit dwelling

a building consisting of multiple residential units, such as an apartment complex or horizontally attached townhouses.

National Construction Code (NCC)

Australia's primary set of technical requirements for building design and construction, which outlines the minimum standards for safety, health, amenity, accessibility and sustainability of certain buildings.

owners corporation (OC)

legal entity consisting of all lot owners within a multi-unit complex and responsible for the administration, upkeep and insurance of the common areas shared by all owners. Formerly a **body corporate**.

owners corporation committee

a group of volunteers representing owners within a multi-unit complex that helps manage finances, upkeep, and compliance with relevant laws. Mandatory for complexes of ten or more lots, with members elected by the owners corporation.

owners corporation manager

an external professional company hired by an owners corporation to handle administrative work such as collecting fees, organising meetings and maintenance, and keeping records. Also known as a **strata manager**.

owners corporation tier

a categorisation of owners corporations based on the number of lots and which establishes different requirements for financial reporting, committees and maintenance plans. The tiers range from 1 (more than 100 occupiable lots) to 5 (a two-lot subdivision).

photovoltaic (PV)

technology that converts sunlight into electricity, which occurs when a semiconductor material absorbs light particles that excite and dislodge electrons generating an electric current.

plug-in solar and batteries

portable solar panels and batteries that can be plugged in to a household wall socket and do not require permanent modifications to the property.

public housing

social housing that is owned and managed directly by the government.

renewable energy

electricity derived from natural sources that replenish faster than they are consumed, providing a clean, sustainable alternative to fossil fuels.

residential solar

solar photovoltaic system installed on homes allowing households to generate their own electricity.

rooftop solar

solar photovoltaic system mounted on a rooftop.

social housing

long-term, affordable rental housing managed by the government or a community housing organisation.

solar access

the ability of a property, building or specific area to receive direct sunlight without being obstructed.

solar photovoltaic cell

device made of semiconductor material such as silicon that converts sunlight directly into electricity and is the building block of a solar panel.

solar photovoltaic panel

device consisting of photovoltaic cells that is often arranged in arrays or systems. Also known as a **solar panel**.

solar photovoltaic system

electric power system made up of solar panels and an inverter that uses sunlight to generate and supply electricity. Also known as a **solar PV system**.

SolShare system

technology developed by Melbourne-based company Allume Energy that takes the electricity generated through a residential solar system after it has passed through an inverter and uses a combination of hardware and an algorithm to split this electricity and distribute it fairly to individual households and common areas within a multi-unit dwelling.

split incentive

a barrier to implementing energy efficiency measures in buildings that occurs when the person paying the energy bills (for example, a tenant) is different to the person or entity making the capital investment (for example, the landlord or building owner).

strata plan

the legal document defining the boundaries of property ownership, including individual lots and common property, in a multi-unit complex. Known as a **plan of subdivision** in Victoria.

strata scheme

a system of property ownership in apartments, townhouses and units where individuals own a specific, private lot while jointly owning and managing common property.

tariff

the pricing structure that determines how much households pay for their electricity usage.

Victorian Default Offer (VDO)

a government-regulated electricity price set annually by the Essential Services Commission that acts as a safety-net price to protect households and businesses from high or unfair energy bills.

virtual energy network (VEN)

a digital platform that virtually connects energy consumers and solar system owners, enabling them to buy, sell and share solar energy through the existing electricity grid.

virtual power plant (VPP)

a system that uses smart software to aggregate and centrally control a group of solar panels and batteries to function like a single power plant.

Chapter 1

Solar inequity in Victoria

In recent decades, Victorian households have enthusiastically embraced renewable energy technologies to reduce their environmental impact and electricity costs.¹ Rooftop solar is popular but uptake is unevenly distributed across dwelling and tenure types.² Installations on apartment buildings and other multi-unit dwellings lag significantly behind installations on freestanding homes.³ This is due to a range of factors, including the additional costs and complexities arising from installing the technology on taller, more densely occupied buildings and from navigating joint ownership arrangements, such as owners corporations (OCs).⁴

Increasing the uptake of residential solar systems by Victorians living in apartments, townhouses and units is important to ensure equitable access to renewable and affordable electricity. It is also critical to Victoria's transition to renewable energy generation and net zero carbon emissions. Apartment buildings are a significant component of the built environment and can make a major contribution to this transition with greater uptake of residential solar.

In December 2025, the Legislative Assembly's Environment and Planning Committee received terms of reference tasking it with identifying how access to renewable and affordable electricity can be expanded for Victorians living in apartments and other 'multi-unit dwellings' (which the Committee defined as horizontally attached townhouses and rows of units).

The terms of reference focused on examining the barriers and inequities to more renewable and affordable energy for Victorians living in these types of housing. It called for the Committee to identify options to increase uptake of renewable technologies, including shared rooftop solar, balcony or façade solar, community batteries and virtual power plants. It also asked the Committee to carefully consider the differing experiences of owner-occupiers, renters and social housing tenants in accessing affordable and renewable energy.

The Committee has interpreted this to include consideration of the energy efficiency and electrification of apartments as these are key factors in reducing household energy costs, demand on the grid and preparing Victoria for a clean energy future.

1 Environment Victoria, *Renewable energy*, <<https://environmentvictoria.org.au/our-campaigns/safe-climate/renewable-energy>> accessed 4 December 2025.

2 Mohammad Dehghanimadvar, et al., *Rooftop solar potential of Australian housing stock by tenure and dwelling type*, report for Solar Citizens and Australian PV Institute, 2024, p. 8.

3 Smart Energy Lab, *Submission 26*, p. 1; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 2.

4 Solar Victoria, 'Early insights from Victoria's Solar for Apartments Program', paper presented at Asia Pacific Solar Research Conference, Sydney, 3–5 December 2024, p. 5; Hon Jacinta Allan MP, *Solar savings on the way for apartment residents*, media release, 13 February 2024; Metropolitan Community Power Hub, *Guide to Solar for Apartments*, Yarra Energy Foundation, 2022, pp. 10–11; Owners Corporation Network of Australia Limited, *Submission 61*, p. 6.

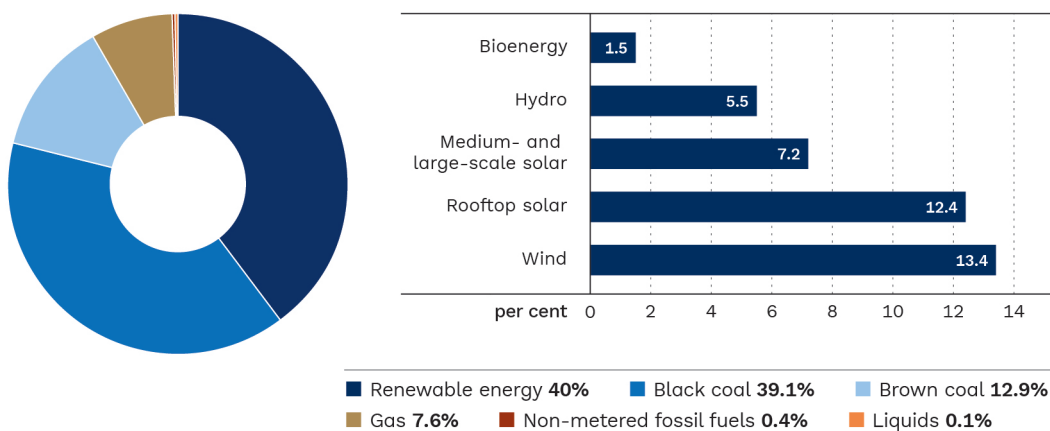
Throughout the Inquiry, the Committee has sought input from the renewable energy sector, social housing providers, government agencies and academia. It also collected important evidence from Victorians living in apartments and grappling with these issues firsthand.

It recommends a range of reforms to empower apartment residents to participate in Victoria’s energy transition, including legislative reform to simplify apartment governance, home energy efficiency ratings to increase support for solar and ongoing support to improve affordability of upgrades. The evidence supporting these transformative recommendations is detailed throughout the report.

1.1 Home solar systems are popular nationwide

Australia’s electricity system is transitioning from large-scale, coal-fired electricity generation to a mix of utility- and residential-scale renewable energy generation such as wind, hydro and solar.⁵ As of 2024, approximately 40% of the nation’s electricity was renewably generated, largely by utility-scale wind turbines and residential solar systems (typically rooftop solar). Figure 1.1 breaks down Australia’s electricity generation by source in 2024 and shows the proportions generated by different renewable energy sources.⁶

Figure 1.1 Australian electricity generation, by source, 2024



Source: Clean Energy Council, *Clean Energy Australia: 2025*, 2025, p. 7.

Australian households, including some living in apartments and other multi-unit dwellings, have enthusiastically embraced residential solar systems. More than 4 million Australian households (approximately one in three) are now equipped with residential solar, with uptake supported by federal, state and territory government incentives and technological innovation.⁷ Box 1.1 describes how residential solar systems generate renewable energy to power households.

5 Australian Bureau of Statistics, *Household solar electricity generation in the Australian national accounts, 2025*, <<https://www.abs.gov.au/articles/household-solar-electricity-generation-australian-national-accounts>> accessed 7 April 2026.

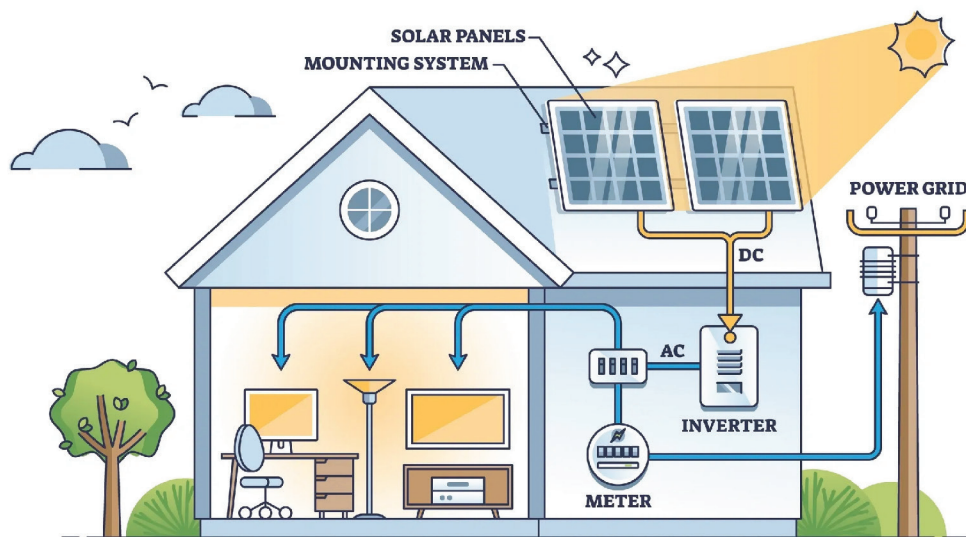
6 Clean Energy Council, *Clean Energy Australia: 2025*, 2025, p. 5.

7 Australian Bureau of Statistics, *Household solar electricity generation in the Australian national accounts*.

Box 1.1 How do residential solar systems power houses?

Modern residential solar systems typically combine rooftop solar panels (comprised of photovoltaic (PV) cells that convert sunlight into electricity) with an electrical inverter. Rooftop panels absorb sunlight which excites electrons in the photovoltaic cells causing them to move. This movement generates direct electrical current (DC electricity) flowing in a single direction. An inverter then converts this electricity to alternating current (AC electricity), which flows in both directions and is suitable for household appliances. This electricity is then distributed for use throughout the household or, if excess to demand, distributed to the electricity grid through a meter box as shown in Figure 1.2.

Figure 1.2 Diagram of how a single dwelling solar system works



Source: Noosa Solar, *Solar panels for your home or business*, <<https://noosasolar.au/solar-panel-installation>> accessed 22 May 2026.

Sources: Solar Calculator, *How solar panels work*, <<https://solarcalculator.com.au/how-do-solar-panels-work>> accessed 4 December 2025; Jeff Sykes, Solar Choice, *How do solar panels work: a complete guide*, 2026, <<https://www.solarchoice.net.au/learn/solar-energy>> accessed 22 May 2026.

The number of Australian households installing rooftop solar and the size of residential solar systems is continuing to grow year on year.⁸ The Clean Energy Council reported that 2024 ‘was the fifteenth straight year that the average size of solar systems increased, and the fifth year in a row that installation figures surpassed 300,000 units’ in Australia.⁹

As of 2024, rooftop solar generated 31% of all renewable electricity generated in Australia and 12.4% of electricity generated overall. It is now the second largest source

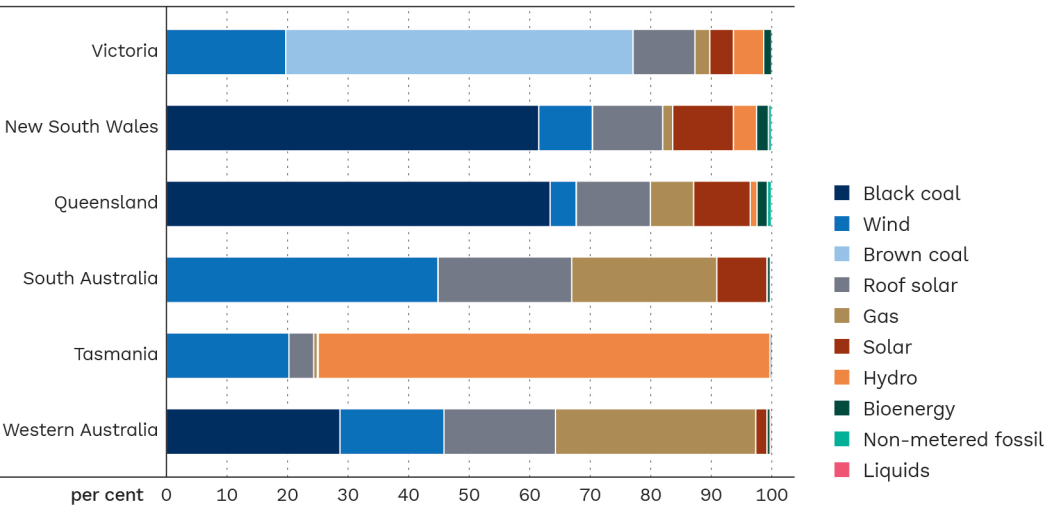
⁸ Clean Energy Council, *Clean Energy Australia*, p. 6.

⁹ Ibid., p. 13.

of renewable energy in Australia after wind, with the gap between these two sources of renewable energy continuing to narrow.¹⁰

Victoria makes a significant contribution to this (see Figure 1.3). Of all Australian states, it has the third highest solar generation capacity (5.73 gigawatts (GW)) which equates to a third of the state's demand for residential electricity.¹¹ One in five Victorian households now has a residential solar system.¹²

Figure 1.3 Energy generation distribution by state, 2024



Source: Clean Energy Council, *Clean Energy Australia: 2025*, 2025, p. 28.

FINDING 1: About 33% of Australian households and 20% of Victorian households now have residential solar. These systems generate a significant proportion of the energy used at the state and national levels.

1.2 Residential solar is skewed to owner-occupied, freestanding housing

While Victorians are continuing to embrace residential solar in ever-growing numbers, uptake is uneven across different housing types and tenures. To date, residential solar has primarily been confined to rooftop installations on freestanding homes, typically inhabited by older owner-occupiers with higher incomes.¹³

¹⁰ Ibid.

¹¹ Clean Energy Council, *Rooftop solar and storage report: July–December 2025*, 2026, p. 7; Environment Victoria, *Renewable energy*.

¹² Environment Victoria, *Renewable energy*.

¹³ Dehghanimadvar, et al., *Rooftop solar potential of Australian housing stock by tenure and dwelling type*, p. 8.

Installing a residential solar system on a freestanding home typically involves a single owner with ample roof space to meet household needs.¹⁴ This is a much simpler prospect than installing residential solar on apartment buildings, in social housing or even in a freestanding home occupied by renters.

As a result, households living in apartment buildings, rental properties or social housing are ‘significantly underrepresented’ in residential solar installation figures.¹⁵ A recent survey of 4,500 people by Energy Consumers Australia, the national body representing residential and small business energy consumers, found that 33% of respondents living in freestanding homes have rooftop solar compared with just 7.5% of respondents living in apartments and units.¹⁶ Likewise, the City of Melbourne observed that despite having the highest population density of all Victorian municipalities, its solar capacity is 25% of the average municipality. It suggested that this is due to the high concentration of apartment and commercial buildings within its jurisdiction.¹⁷ Solar Victoria estimates that around 1% of households living in apartments have access to residential solar.¹⁸

Victoria is not the only jurisdiction with lower residential solar uptake among apartment buildings; it is also a national and international issue.¹⁹ This is due to a range of factors explored in this report, including the additional cost and complexity of installing rooftop solar panels on taller, more densely occupied buildings and the challenges associated with navigating joint ownership arrangements, such as OCs.²⁰ Some common challenges with installing residential solar in apartment buildings are summarised in Table 1.1.

¹⁴ Professor Cathy Sherry, *Submission 1, Attachment 1*, p. 2; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 2.

¹⁵ Smart Energy Lab, *Submission 26*, p. 1; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 2.

¹⁶ Energy Consumers Australia, *Submission 87*, p. 2.

¹⁷ City of Melbourne, *Submission 84*, p. 5.

¹⁸ Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006: final report*, report for The Hon Nick Staikos, Minister for Consumer Affairs, December 2025, p. 54.

¹⁹ Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 2.

²⁰ Solar Victoria, ‘Early insights from Victoria’s Solar for Apartments Program’, p. 5; Hon Jacinta Allan MP, *Solar savings on the way for apartment residents*, media release; Metropolitan Community Power Hub, *Guide to Solar for Apartments*, pp. 10–11; Owners Corporation Network of Australia Limited, *Submission 61*, p. 6.

Table 1.1 Common barriers to solar in apartment buildings

Barrier	Why this is a challenge
Identifying an appropriate solar power system	Apartment buildings vary greatly in design, height, roof space, number of dwellings, electrical infrastructure and network arrangements, and ownership arrangements. There is a range of solar power systems available for purchase in Victoria to cater for this diversity but identifying the most suitable product can be challenging for owners.
Seeking approval from the OC	Apartment roof space is typically classified as common property and is managed by an OC on behalf of all apartment owners. The role of OCs is set out in legislation. Alterations to common property (like installing a solar power system) require a special resolution passed by at least 75% of all OC members.
Diverse incentives and perspectives	Apartment residents are typically a mix of owner-occupiers and renters. They may hold varied views on the benefits and costs of solar power systems. Owners who lease their apartment may be less motivated to install a solar power system as they must cover the installation cost while their tenant benefits from the cheaper power generated. This is called a 'split incentive'.
Technical issues	Apartment buildings come in many shapes, sizes and ages. Roof access, space and orientation, and a building's existing electrical infrastructure, location and height inform how complex it is to install a residential solar system. Tall buildings may require a crane and traffic management, and flat and concrete roofs necessitate additional structures to tilt the panels towards the sun. Older buildings may have limited electricity loads, roof weights and space for cables, batteries and so on.
Cost and finance	Unique technical challenges and limited financial support options can make it more costly to install a solar power system in an apartment building. There can be significant upfront cost, uncertainty around the return on investment and long pay-back periods.
Time and effort	Identifying an appropriate solar power system, seeking OC approval, acquiring quotes and installing a system take time and effort. It is reasonable to expect this process to take at least 12 months.

Sources: Adapted from Metropolitan Community Power Hub, *Guide to Solar for Apartments*, Yarra Energy Foundation, 2022, pp. 10–11; Australian Government Treasury and the Department of Climate Change, Energy, the Environment and Water, *Built environment sector plan*, 2025, p. 9; Professor Cathy Sherry, *Submission 1, Attachment 1*, p. 8.

State and federal government policy and subsidies have also focused on increasing uptake in freestanding homes, rather than apartment buildings. The City of Melbourne asserted that government solar programs have been historically skewed to freestanding homes and are ‘not fit-for-purpose’ for apartments as they often fail to address the legal, technical and governance requirements of higher density housing.²¹

Anecdotal evidence indicates that residential solar is also less common in Victoria’s social housing, which is typically older and less energy efficient.²² Social housing is long-term, affordable rental housing managed by the government or a community housing organisation (CHO). It provides stable accommodation to low-income households at below market rental rates, capped as a proportion of household income.

21 City of Melbourne, *Submission 84*, p. 15.

22 Enzo Lara-Hamilton, et al., *Life cycle impacts of public housing renewal in Victoria*, report prepared by Melbourne Centre for Cities, The University of Melbourne, 2024, pp. 7–8; Daniel Miles, ‘Victorian public housing advocates push for solar panel pledge before state election’, *ABC News*, 11 September 2022, <<https://www.abc.net.au/news/2022-09-11/solar-push-for-public-housing-residents/101410560>> accessed 28 April 2026; Australian Council of Social Services and Brotherhood of St Laurence, *Energy stressed in Australia*, 2018, pp. 8, 22, 25.

There are two types—public housing, which is owned and managed directly by the state government, and community housing, which is managed (and often owned) by a not-for-profit CHO.²³ Community housing in Victoria is dominated by apartments and other multi-unit dwellings. As of June 2025, 65% of community housing dwellings were apartments, units or flats, another 11% were townhouses or semi-detached houses, and only 17% were freestanding homes. Public housing is similarly skewed to apartments and other multi-unit dwellings. As of June 2025, 33% of public housing dwellings were apartments, units or flats, 26% were townhouses or semi-detached homes, and 39% were freestanding homes.²⁴

Matt Torney, Director of Strategy, Performance and Sustainability at Housing Choices Australia (a CHO) said that public housing tenants do not typically have access to more affordable renewable energy. He asserted that ‘the cost-of-living relief that should flow from investments in renewables is not arriving’.²⁵ His organisation also noted that CHOs have limited financial capacity to fund sustainability upgrades with high upfront costs (like rooftop solar) at scale in community housing. This is because community housing is delivered on a not-for-profit basis.²⁶ The Victorian Government is subsidising the installation of residential solar in community housing (see Section 1.7.2). However, Raoul Wainwright, Acting Chief Executive Officer of the Victorian Public Tenants Association, the peak body for public housing tenants, suggested that public housing is missing similar investment.²⁷ Manningham Council also observed that energy retailer incentives for residential solar can be exclusive of social housing tenants and renters.²⁸

Friends of the Earth Melbourne, a social and environmental justice advocacy group, suggested that across Australia, social housing tenants are more likely to have rooftop solar or batteries on their home than private renters, although the proportion of social housing tenants with access overall remains small.²⁹

FINDING 2: Residential solar uptake is heavily skewed towards owner-occupied, freestanding homes in Victoria. Installation in apartment buildings and other multi-unit dwellings is typically more complicated and therefore less common.

²³ Australian Housing and Urban Research Institute, *What is the difference between social housing and affordable housing—and why do they matter?*, 2023, <<https://www.ahuri.edu.au/analysis/brief/what-difference-between-social-housing-and-affordable-housing-and-why-do-they-matter>> accessed 8 April 2026.

²⁴ Australian Institute of Health and Welfare, *Housing assistance in Australia*, 2026, <<https://www.aihw.gov.au/reports/housing-assistance/housing-assistance-in-australia-2026/contents/social-housing-dwellings>> accessed 20 July 2026.

²⁵ Matt Torney, Director, Strategy, Performance and Sustainability, Housing Choices Australia, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 46.

²⁶ Housing Choices Australia, *Submission 55*, p. 8.

²⁷ Raoul Wainwright, Acting Chief Executive Officer, Victorian Public Tenants Association, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, pp. 46–47.

²⁸ Manningham Council, *Submission 49*, p. 2.

²⁹ Friends of the Earth Melbourne, *Submission 67*, p. 3.

1.3 Innovation is increasing options for solar in apartment buildings

The solar technology and market offerings for apartment buildings are relatively immature compared with those for freestanding homes.³⁰ However, technological innovation is slowly increasing the options for apartment residents.³¹ Inquiry stakeholders suggested that the renewable energy industry is actively adapting solutions to suit different types of apartment buildings and the significant customer base they represent.³² As explored further in Chapter 4, apartment buildings are very diverse in size, age and design, and the most suitable residential solar solution is often very specific to each building.³³

Nonetheless, David McElrea, Chief Advocacy Officer of the Smart Energy Council (an energy industry peak body), suggested that '[i]t would be extremely rare that you could not find a technological solution' to suit the unique characteristics of different buildings.³⁴ Industry peak body the National Electrical and Communications Association submitted that there is now 'a diversified suite of participation pathways ... [and] a practical foundation for scaling renewable integration' across Victorian apartment buildings.³⁵

Indeed, evidence suggested that technical feasibility is no longer the primary barrier to installing residential solar in existing apartment buildings; rather governance, cost and regulatory hurdles are the more significant challenges to increasing uptake.³⁶ This is despite the cost of technology falling over time, particularly rooftop solar panels and batteries.³⁷ Other stakeholders observed that uptake is also constrained by a shortage of installers and tradespeople with expertise and experience working with apartment buildings and OCs.³⁸

Some new, emerging and potentially transformative renewable energy generation and storage options available to apartments and other multi-unit dwellings are described below, including:

- shared solar for apartment buildings
- building integrated photovoltaics

³⁰ Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 2.

³¹ Strata Community Association Victoria, *Submission 78*, p. 6; Paul Richards, *Submission 17*, p. 1; Owners Corporation Network of Australia Limited, *Submission 61*, p. 4.

³² Jeremy Sung, Head of Policy, Energy Efficiency Council, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 7; David McElrea, Chief Advocacy Officer, Smart Energy Council, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 7.

³³ Dr Mike Roberts, Senior Research Fellow, Collaboration on Energy and Environmental Markets, University of New South Wales, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 20.

³⁴ David McElrea, *Transcript of evidence*, p. 4.

³⁵ National Electrical and Communications Association, *Submission 45*, p. 6.

³⁶ HIP V. HYPE and Get Off Gas, *Submission 46*, p. 2; Strata Community Association Victoria, *Submission 78*, p. 6; Paul Richards, *Submission 17*, p. 1; Deakin University, *Submission 16*, p. 1; Smart Energy Council, *Submission 32*, p. 3.

³⁷ Green Building Council of Australia, *Submission 77*, p. 2; Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 5.

³⁸ Owners Corporation Network of Australia Limited, *Submission 61*, p. 9.

- plug-in solar and batteries
- community batteries
- virtual power plants and virtual energy networks.

1.3.1 Shared solar for apartment buildings

A shared residential solar system typically involves rooftop solar panels generating electricity for use in the common areas of an apartment building (such as the elevator, lobby or basement), by individual households, or for both purposes. They require approval from the OC and may involve some or all households in a building.³⁹

In recent years, shared solar systems have become a mainstream option for incorporating renewables into apartment buildings.⁴⁰ Strata Community Association Victoria, the state's peak body for strata service providers, said, '[s]hared rooftop solar and power-sharing technology are now technically proven in apartment settings'.⁴¹ The National Electrical and Communications Association described shared solar for apartments as, 'the most impactful' and adaptable option for apartment buildings.⁴²

Shared solar systems distributing electricity to individual households typically rely on hardware and algorithms to ensure that residents have equitable access to any renewable energy generated.⁴³ Smart Energy Council said that shared solar technology has 'improved significantly' in recent years and now enables 'precise and equitable distribution of rooftop generation across individual meters within a single building'.⁴⁴

Several submitters highlighted Allume Energy's SolShare system as a solution that enables solar energy to be shared across a building's common areas and households.⁴⁵ Box 1.2 describes this technology. SolShare has been installed in several buildings with the aid of government subsidies through the Solar for Apartments Program (discussed in Section 1.7.1).⁴⁶

Shared residential solar systems that exclusively power common areas do not give individual households access to renewable energy but can reduce household strata fees by lowering the shared energy costs of an apartment building.⁴⁷ This arrangement is suited to high-rise apartment buildings where the demand for power in common

39 Solar Market, *Can I have solar if I live in an apartment?*, 2022, <<https://www.solarmarket.com.au/solar-blog/can-i-have-solar-if-i-live-in-an-apartment>> accessed 2 December 2025; Metropolitan Community Power Hub, *Guide to Solar for Apartments*, pp. 13, 15.

40 Smart Energy Lab, *Submission 26*, p. 4; Smart Energy Council, *Submission 32*, p. 3.

41 Strata Community Association Victoria, *Submission 78*, p. 6.

42 National Electrical and Communications Association, *Submission 45*, pp. 4, 6.

43 Solar Victoria, *Solar systems for apartment buildings*, 2026, <<https://www.solar.vic.gov.au/solar-systems-apartment-buildings>> accessed 3 December 2025.

44 Smart Energy Council, *Submission 32*, p. 3.

45 City of Boroondara, *Submission 71*, p. 8; Property Council of Australia, *Submission 75*, p. 3; Owners Corporation Network of Australia Limited, *Submission 61*, p. 3; Nishchal Baniya, *Submission 24*, p. 1; Yarra Energy Foundation, *Submission 48*, p. 2.

46 Collaboration on Energy and Environmental Markets, University of New South Wales, *Submission 80*, p. 3.

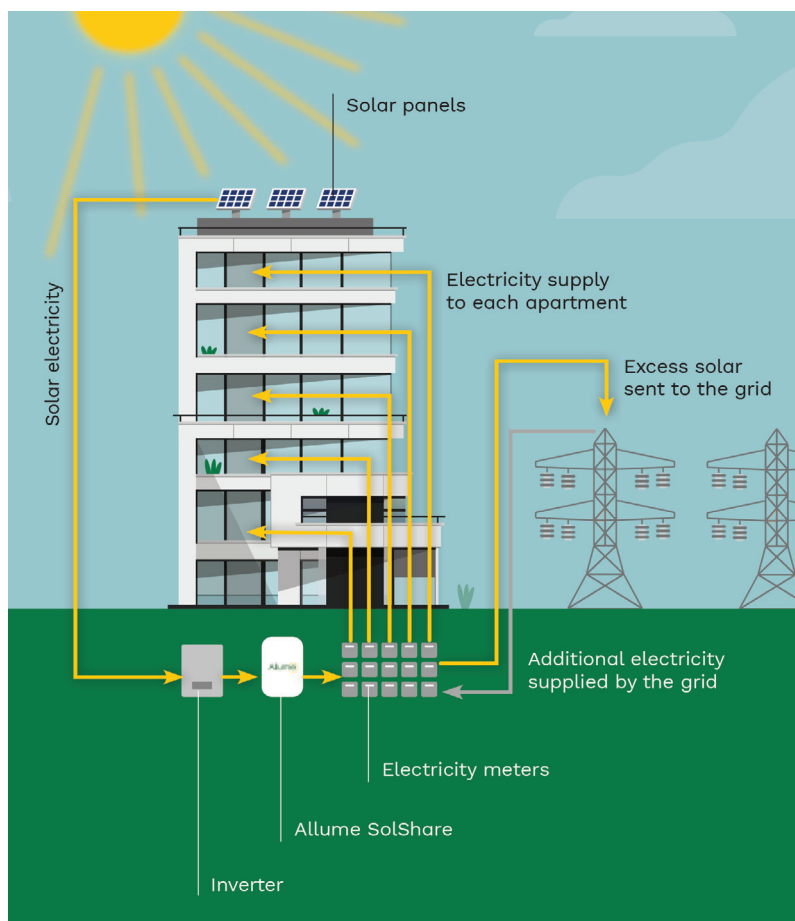
47 Solar Market, *Can I have solar if I live in an apartment?*; Metropolitan Community Power Hub, *Guide to Solar for Apartments*, pp. 13, 15.

areas is high and the roof space available for solar panels is limited. In these cases, the energy generated by a shared system is likely to be fully utilised by common areas.⁴⁸

Box 1.2 Allume Energy's SolShare for apartments

Allume Energy is a Melbourne-based company developing residential solar products for use in apartments and other high-density residential buildings. It has developed SolShare, a unique product enabling a single residential solar system on an apartment building to distribute power equitably to multiple households. SolShare takes the electricity generated through a residential solar system after it has passed through an inverter and uses a combination of hardware and an algorithm to split this electricity and distribute it to individual households and common areas.

Figure 1.4 How does SolShare work?



Source: Adapted from Quality Solar Systems, *SolShare by Allume*, <<https://qualitysolarsystems.com.au/solshare-installation>> accessed 15 April 2026.

(Continued)

⁴⁸ Mike Roberts, et al., *Photovoltaics on apartment buildings: project report*, Centre for Energy and Environmental Markets, UNSW Sydney, 2019, p. 12.

Box 1.2 Continued

SolShare monitors the amount of power being generated and the demand for power in each household or common area every 200 milliseconds. It uses this data to optimise the distribution of solar energy to match demand equitably and maximise the onsite usage of electricity generated by the residential solar system.

SolShare is modular and scalable to buildings of different sizes. Each SolShare unit can connect up to 15 apartments, and each building can have multiple SolShare units installed. It is more efficient than individual residential solar systems for each household and can deliver 40–50% higher onsite electricity usage.

Sources: Allume Energy, *How SolShare works*, <<https://allumeenergy.com/en-au/solshare>> accessed 3 June 2026; Quality Solar Systems, *SolShare by Allume*, <<https://qualitysolarsystems.com.au/solshare-installation>> accessed 15 April 2026; Allume Energy, *Frequently asked questions*, <<https://allumeenergy.com/en-au/faqs>> accessed 30 June 2026.

Some shared residential solar systems can also export excess electricity to the grid (depending on how they are metered) and can earn feed-in tariffs from energy retailers.⁴⁹ However, the cost of electricity is much greater than feed-in tariffs earned for exporting excess electricity to the grid, so it is in households' interests to maximise usage of the renewable electricity they generate.⁵⁰

1.3.2 Building integrated photovoltaics

Building integrated photovoltaics (BIPV) are construction products that incorporate solar technology, so they serve a dual structural and renewable energy purpose. Examples include solar windows, skylights, roof tiles and external cladding.⁵¹ BIPV have advantages over traditional rooftop solar. They can be incorporated on several surfaces across a building, increasing its capacity to generate renewable energy. They have the potential to lower the cost of construction by negating the need to buy separate building materials and solar technology, and they can serve an architectural or aesthetic function in a building.⁵²

Several submitters noted that BIPV can also be highly complementary to rooftop solar by increasing the surface area of buildings that can produce renewable energy.⁵³ Incorporating both into a building not only increases the amount of energy generated

⁴⁹ Solar Choice, *Solar for strata apartment buildings: everything you need to know (almost)*, 2025, <<https://www.solarchoice.net.au/commercial-solar/strata-apartments>> accessed 3 December 2025.

⁵⁰ Mike Roberts, et al., *Photovoltaics on apartment buildings*, p. 14.

⁵¹ Associate Professor Nicola Willand, et al., *Submission 27*, pp. 3, 15; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 4.

⁵² Associate Professor Nicola Willand, et al., *Submission 27*, p. 15; George Fethers & Co., *Submission 79*, pp. 9–10, 13.

⁵³ City of Boroondara, *Submission 71*, p. 9; ClearVue Technologies Ltd, *Submission 68*, p. 6; Property Council of Australia, *Submission 75*, p. 4; Visionary Design Development, *Submission 54*, p. 3; Professor Rebecca Yang, *Submission 38*, pp. 2–3, 5.

in the middle of the day but extends the generating period to earlier in the morning and later in the evening when the angle of the sun means that rooftop solar is less effective.⁵⁴

Integrated façade solar is especially effective in mid- to high-rise buildings that have limited roof space, are tall and incorporate more households.⁵⁵ Rooftop solar is typically incapable of meeting the energy demands of both common areas and households in these types of buildings without BIPV.⁵⁶ However, a submission by Adelaide University researchers led by Professor Jian Zuo explained that, as building height expands, the total surface area of the building increases proportionally, expanding the ‘vertical sun-exposed surfaces available for BIPV’.⁵⁷ It highlighted a study of existing BIPV across 120 cities that demonstrated BIPV’s significant potential for increasing renewable energy generation:

façade PV potential is, on average, equivalent to 68.2% of rooftop PV potential, and in 17.5% of the sampled cities, façade potential even exceeded rooftop potential. This suggests that in high-density settings, particularly in high-rise buildings, the expansion of exterior wall area with increasing height constitutes an important source of additional electricity-generation potential.⁵⁸

BIPV retailer ClearVue Technologies said that the ‘commercial readiness’ of BIPV has ‘accelerated’ and ‘deployment ready products’ are available to enable ‘large scale adoption’.⁵⁹ However, it was not alone in acknowledging that BIPV market offerings in Australia are currently tailored more to commercial buildings than residential apartment buildings.⁶⁰

Submitters also highlighted that BIPV products remain comparatively expensive compared with rooftop solar systems and are most effective when incorporated into a building during the design and construction phase.⁶¹ It was also suggested that maintaining BIPV may also be more challenging than rooftop solar due to the embedded nature of this technology.⁶² Initiatives to scale up the adoption of BIPV in Victorian apartment buildings are explored in Chapter 4.

⁵⁴ Professor Rebecca Yang, *Submission 38*, pp. 2–3.

⁵⁵ Ibid.; ClearVue Technologies Ltd, *Submission 68*, p. 6.

⁵⁶ Professor Rebecca Yang, *Submission 38*, pp. 2–3; Property Council of Australia, *Submission 75*, p. 4.

⁵⁷ Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, pp. 4–5.

⁵⁸ Ibid.

⁵⁹ ClearVue Technologies Ltd, *Submission 68*, p. 6.

⁶⁰ Owners Corporation Network of Australia Limited, *Submission 61*, p. 3; ClearVue Technologies Ltd, *Submission 68*, p. 6; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 4.

⁶¹ City of Boroondara, *Submission 71*, p. 9; Property Council of Australia, *Submission 75*, p. 4.

⁶² Property Council of Australia, *Submission 75*, p. 4.

1.3.3 Plug-in solar and batteries

Portable energy generation and storage systems, or ‘plug-in’ solar and batteries, are smaller systems that can be set up on apartment balconies and feed electricity into households via a standard power point.⁶³ They do not require professional installation or access to roof space, are more affordable than rooftop solar, and can be packed up and moved to another location if required.⁶⁴

Many stakeholders highlighted the development and proliferation of portable plug-in solar and batteries internationally and suggested that these technologies should be deployed in Victoria.⁶⁵ Several noted their potential to increase renters’ access to renewable and more affordable energy.⁶⁶ A group of interdisciplinary researchers at RMIT University suggested that ‘a 1kW [kilowatt] vertical, unshaded plug-in [solar] system in Melbourne could save around \$248 annually, or approximately 15% of a typical household’s bill under the Victorian Default Offer’.⁶⁷ The Victorian Default Offer is defined in Box 1.3.

Other key advantages of plug-in solar and batteries are the lower upfront cost (compared with other forms of residential solar), ease of installation and their portable nature allowing them to move homes as renters move between tenancies.⁶⁸ However, the City of Melbourne noted that the modest energy-generation capacity of portable solar devices limits their usefulness to power household appliances without the addition of portable batteries to augment their impact.⁶⁹

Portable plug-in energy generation and storage is not currently permitted in Australia.⁷⁰ The technical and safety regulatory reform needed to introduce this technology in Victoria is explored in Chapter 5.

⁶³ Commissioner for Residential Tenancies, *Submission 82*, p. 2; Associate Professor Nicola Willand, et al., *Submission 27*, p. 12.

⁶⁴ Associate Professor Nicola Willand, et al., *Submission 27*, pp. 3, 13.

⁶⁵ Property Council of Australia, *Submission 75*, p. 5; Owners Corporation Network of Australia Limited, *Submission 61*, p. 3; Associate Professor Nicola Willand, et al., *Submission 27*, p. 13; Smart Energy Lab, *Submission 26*, pp. 4–5, 11–13.

⁶⁶ Property Council of Australia, *Submission 75*, pp. 4–5; Owners Corporation Network of Australia Limited, *Submission 61*, p. 3; National Electrical and Communications Association, *Submission 45*, p. 6.

⁶⁷ Associate Professor Nicola Willand, et al., *Submission 27*, p. 13.

⁶⁸ Ibid., pp. 3, 14, 20; Associate Professor Nicola Willand, School of Property, Construction and Project Management, RMIT University, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 22; Neil McFarlane, Head, Business Development and Government, Smartizer, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 34; Collaboration on Energy and Environmental Markets, *Submission 80*, p. 3.

⁶⁹ City of Melbourne, *Submission 84*, p. 11.

⁷⁰ Associate Professor Nicola Willand, et al., *Submission 27*, p. 13.

Box 1.3 Victorian Default Offer

The Victorian Default Offer (VDO) is a ‘safety-net’ electricity price set annually by the Essential Services Commission. It provides households with access to a simple and fair electricity price without having to compare the market rates of different providers.

The VDO sets the maximum daily supply charge (\$ per day) and usage charges (\$ per kilowatt hour) that energy retailers can charge households under a standard offer or under an embedded network. Energy retailers must provide households with access to the standard offer if they request it. The VDO also provides a benchmark for households comparing energy costs under ‘market offers’, which are often cheaper than the standard offer due to discounts or tailored energy plans.

The VDO is slightly different in each distribution zone across the state as there are unique costs associated with providing electricity in each area.

Source: Essential Services Commission, *Victorian Default Offer*, 2025, <<https://www.esc.vic.gov.au/electricity-and-gas/prices-tariffs-and-benchmarks/victorian-default-offer>> accessed 20 February 2026.

1.3.4 Community batteries

Community batteries (also known as ‘neighbourhood batteries’) are mid-scale energy storage systems installed centrally within a community (such as at a local sports facility or council offices) and connected to nearby rooftop solar systems. They are typically owned by energy retailers or community groups and store excess renewable electricity generated during the day for use by surrounding households, businesses or communal facilities. In this way they redistribute renewable energy within communities, enable households without rooftop solar to access more affordable electricity and reduce reliance on the grid during periods of high demand. Community batteries also remove the need for each household with solar to install a battery.⁷¹

Community batteries may be paired with solar in apartment buildings to enhance onsite consumption of renewable energy and reduce reliance on the grid during periods of high demand.⁷² Several submitters noted that building or community batteries are superior to individual household batteries as they aggregate supply. Moreover, common areas and individual households in apartment buildings do not typically have space to install energy storage systems.⁷³

⁷¹ Department of Energy, Environment and Climate Action (DEECA), *Neighbourhood batteries*, 2026, <<https://www.energy.vic.gov.au/grants/neighbourhood-batteries>> accessed 21 April 2026; Origin Energy, *What are community batteries and how do they work?*, 2025, <<https://www.originenergy.com.au/blog/what-are-community-batteries-and-how-do-they-work>> accessed 21 April 2026.

⁷² Dr Asma Aziz and Nishadi Weerasinghe, Electric Energy Society of Australia, Western Australia Chapter, *Submission 9*, p. 4; Professor Rebecca Yang, *Submission 38*, p. 6.

⁷³ Nishchal Baniya, *Submission 24*, p. 2; Dr Asma Aziz and Nishadi Weerasinghe, *Submission 9*, p. 2; Clean Energy Council, *Submission 66*, p. 5.

Submitters noted that high upfront purchase and installation costs are a barrier to the broader uptake of community batteries.⁷⁴ The Committee also heard that the tariff settings of energy retailers may be discouraging uptake of community batteries.⁷⁵ However, government subsidies are enabling some Victorian communities to access this technology.⁷⁶ Measures to promote community batteries are explored in Chapter 4.

1.3.5 Virtual power plants and virtual energy networks

In recent years, new energy market models have developed that allow surplus energy generated by residential solar systems to be shared more broadly within a community. Two models growing in popularity are virtual power plants (VPPs), which enable centralised energy redistribution, and virtual energy networks (VENs), which enable household-to-household energy sharing. These models can provide households without solar systems access to more renewable and affordable energy and can help balance supply and demand for electricity in the grid.⁷⁷

VPPs aggregate household solar and battery installations across a community into a larger system which can trade electricity with the grid. Energy retailers typically manage VPPs and offer joining incentives to households with solar (for example, discounted batteries).⁷⁸ Several submitters noted that a VPP has been successfully used in South Australia to increase social housing tenants' access to renewable and affordable energy.⁷⁹ This case study is described in Chapter 5. Enabling households in apartments to join VPPs could enhance their access to renewable and more affordable energy, particularly in instances where a building's roof space is too limited for solar.⁸⁰

A VEN is a digital platform allowing households to buy, sell or share locally generated renewable energy directly with other households via the grid. It enables households with solar to sell excess energy at rates higher than feed-in-tariffs, and it empowers households without solar to access more affordable and renewable energy.⁸¹ ClearVue Technologies noted that household-to-household energy trading reduces consumers' reliance on traditional energy retailers and can make investment in residential solar more economically viable.⁸² Advocacy group Community Housing Industry Association

⁷⁴ Smart Energy Lab, *Submission 26*, p. 5.

⁷⁵ Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 10.

⁷⁶ Smart Energy Lab, *Submission 26*, p. 5.

⁷⁷ Nishchal Baniya, *Submission 24*, pp. 3–4; DEECA, *Neighbourhood batteries*; Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 8; ReThink Sustainability, *Submission 5*, p. 1.

⁷⁸ Professor Rebecca Yang, *Submission 38*, p. 6; Victorian Council of Social Service, *Submission 86*, p. 11; National Electrical and Communications Association, *Submission 45*, p. 6; Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 8.

⁷⁹ Friends of the Earth Melbourne, *Submission 67*, p. 4; Infrastructure Victoria, *Submission 20*, p. 2; Victorian Council of Social Service, *Submission 86*, p. 11.

⁸⁰ Infrastructure Victoria, *Submission 20*, p. 2; Smart Energy Lab, *Submission 26*, p. 14.

⁸¹ ReThink Sustainability, *Submission 5*, p. 1; ClearVue Technologies Ltd, *Submission 68*, p. 9; Dr Andrea La Nauze, et al., *Submission 63*, p. 2; Justin McFarlane, Executive Director, ReThink Sustainability, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, pp. 29–30.

⁸² ClearVue Technologies Ltd, *Submission 68*, p. 9.

Victoria highlighted the potential of VENs to enable households in apartments without solar to access renewable energy.⁸³

Options for increasing participation in VPPs and VENs are discussed further in Chapter 5.

FINDING 3: Technological innovation is increasing options for apartment households to access solar energy. Products and market solutions such as shared solar systems, building integrated photovoltaics, plug-in solar and batteries, community batteries, virtual power plants and virtual energy networks are now available, although some barriers exist to their widespread deployment.

1.4 Expanding solar in apartments is important as higher density living grows

As the technological barriers to solar in apartment buildings are overcome, it is important that Victoria seeks to rebalance the uptake of renewable energy generation and storage systems across freestanding homes, apartments and other multi-unit dwellings. Increasing the uptake of solar in apartments will provide wide-ranging benefits for Victorians living in apartment buildings and for the state’s energy system, as shown in Table 1.2.

Table 1.2 Potential benefits of increasing residential solar in apartment buildings

Domains	Potential benefits
Households	• lower electricity costs • improved access to cleaner energy • increased energy independence • reduced health risks • improved property values
Electricity grid	• reduced demand on the network • generation closer to end use • deferred requirement to invest in network augmentation
Society	• lower electricity costs • reduced reliance on fossil fuels • lower carbon emissions • greater energy equity • reduced health system costs

Sources: Mike Roberts et al., *Photovoltaics on apartment buildings: project report*, Centre for Energy and Environmental Markets, UNSW Sydney, 2019, p. 2; Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006: final report*, report for The Hon Nick Staikos, Minister for Consumer Affairs, December 2025, p. 53.

⁸³ Community Housing Industry Association Victoria, *Submission 69*, p. 7.

It is also urgent as Victoria's population grows and state government planning policies aim to increase the number of households living in apartments. According to the 2021 Census, nearly one in five Victorians, or 18% of the state's population, lived in homes subject to a strata scheme, such as an apartment or townhouse.⁸⁴ That equated to around 12% of Victoria's 2.5 million households.⁸⁵ By 2024, this figure had grown to 18% of Victorians living in homes subject to an owners corporation across 1,044,400 lots (apartments, units or townhouses).⁸⁶

Most Victorian strata schemes have five or fewer lots⁸⁷—in 2024, 73% of strata schemes had five homes or fewer.⁸⁸ However, around 33% of all Victorian lots are in strata schemes containing more than 50 homes and 24% are in schemes with more than 100 homes.⁸⁹

Activity Centres Program

The Activity Centres Program is expanding the areas within metropolitan Melbourne where apartment buildings can be delivered. Activity centres are transport hubs or shopping and employment centres with good amenity. New planning controls are being applied to 60 activity centres across Melbourne to permit taller apartment buildings at the centre's core and low-rise apartments and townhouses within walking distance of the core (see Figure 1.5).⁹⁰ Some activity centre cores will permit apartment buildings of up to six storeys, while others will allow up to 20 storeys.⁹¹

⁸⁴ Hazel Easthope, Yi Lu and Alejandra Rivera, *Australasian strata insights 2024: report and infographics*, City Futures Research Centre, UNSW Sydney, 2025, p. 9. A strata scheme is a system of property ownership, common in apartments, townhouses and units, where individuals own a specific, private lot, while jointly owning and managing shared common property.

⁸⁵ Easthope, Lu and Rivera, *Australasian strata insights 2024*, p. 10.

⁸⁶ Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006*, p. 15.

⁸⁷ A lot is the individually owned apartment, unit or townhouse within a strata scheme.

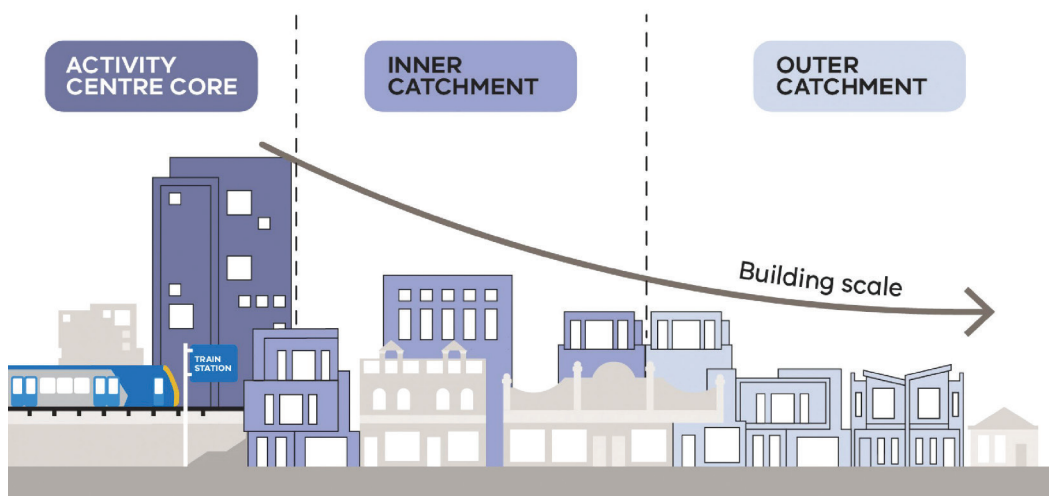
⁸⁸ Easthope, Lu and Rivera, *Australasian strata insights 2024*, p. 42.

⁸⁹ Ibid.

⁹⁰ Department of Transport and Planning, *About the program*, 2025, <<https://www.planning.vic.gov.au/guides-and-resources/strategies-and-initiatives/train-and-tram-zone-activity-centres/about-the-program>> accessed 21 April 2026; Victorian Government, *Plan for Victoria: a plan by Victorians, for Victorians*, 2025, p. 26; Tract, *Victorian planning reforms: the new Mid-Rise Code*, 2026, <<https://tract.com.au/the-new-mid-rise-code>> accessed 21 April 2026.

⁹¹ Hon Jacinta Allan MP, *Plans for more homes near public transport revealed*, media release, 11 February 2026.

Figure 1.5 Building scale at activity centres



Source: Mikaela Ortolan, 'High rise apartments at remaining activity centres mapped across Melbourne', *ABC News*, 11 February 2026, <<https://www.abc.net.au/news/2026-02-11/activity-centre-building-heights-map-melbourne-housing/106327152>> accessed 21 April 2026.

Mid-Rise Code and Townhouse and Low-Rise Code

To complement the Activity Centres Program, the Victorian Government introduced a Mid-Rise Code to provide a streamlined planning approval pathway for medium-density apartments (four to six storeys high). Building proposals that meet the code's design standards will be 'deemed to comply' and will not need to go through a full merit assessment by the responsible local government or be subject to an appeals process. This means they can be approved quicker.⁹² A Townhouse and Low-Rise Code introduced in 2025 establishes a similar planning pathway for townhouses and apartment buildings up to three storeys high.⁹³ It aims to facilitate 'gentle density' across all residential zones.⁹⁴

These reforms will support the construction of housing for the increasing number of Victorians choosing to live in apartment buildings.⁹⁵

FINDING 4: The number of Victorians living in apartments is increasing due to population growth, planning policies and reforms, and the relative affordability of apartments over freestanding homes.

⁹² Department of Transport and Planning, *Introducing the Mid-Rise Code*, 2026, <<https://www.planning.vic.gov.au/news/articles/introducing-the-mid-rise-code>> accessed 21 April 2026.

⁹³ Department of Transport and Planning, *Townhouse and Low-Rise Code*, 2025, <<https://www.planning.vic.gov.au/guides-and-resources/guides/all-guides/residential-development/townhouse-and-low-rise-code>> accessed 21 April 2026.

⁹⁴ Brendan Coates, *Australian housing: can we build it?*, Grattan Institute, 2026, p. 18.

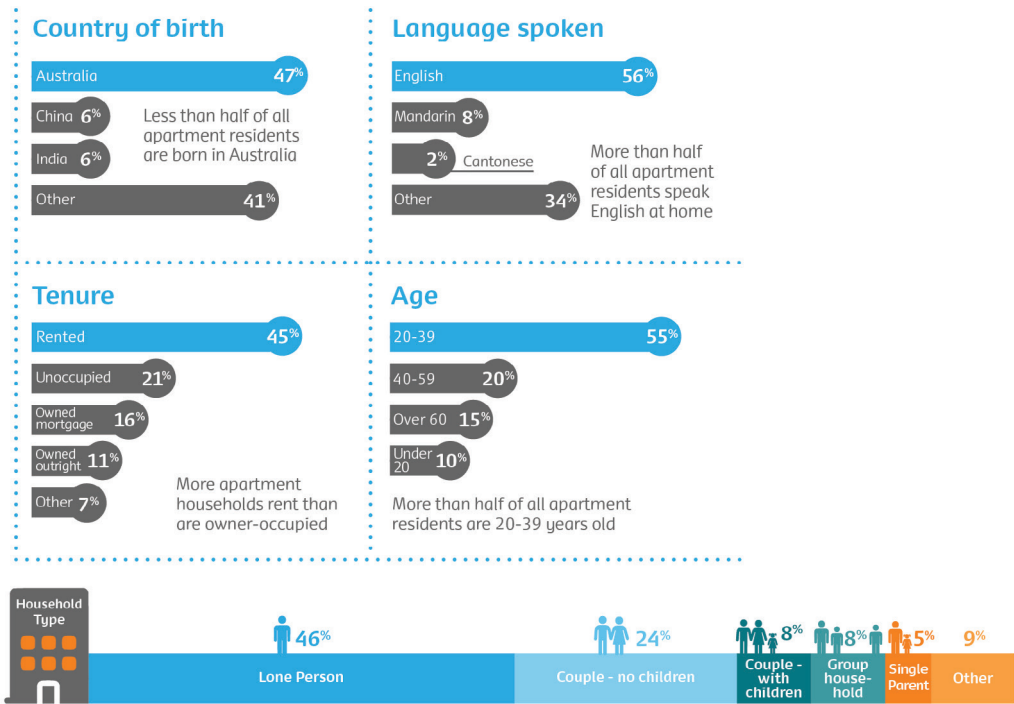
⁹⁵ Hon Jacinta Allan MP, *Labor is making it faster and easier to build more homes*, media release, 19 March 2026.

1.5 More solar in apartments is key to energy equity

Scaling-up residential solar could reduce the energy costs of Victoria’s more vulnerable households. Apartment living is characterised by smaller households and a higher proportion of renter and low-income households (including social housing tenants) than freestanding homes.⁹⁶ Almost half (45%) of apartments are rented.⁹⁷ Lone person households account for 46% of all apartment households and couples with no children account for another 24%.⁹⁸

Smaller households are typically more ‘cost sensitive’ as they have less capacity to absorb increased expenses.⁹⁹ In 2020, 39% of all Australian households living in high-density apartment buildings (four or more storeys high) were lower income households. In Melbourne, lower income households made up 46% of high-density apartment residents. Key vulnerable groups included international students, migrant families in public housing, lower income workers in private housing, retiree homeowners and social housing tenants.¹⁰⁰ Figure 1.6 provides an overview of who is living in Victorian apartments.

Figure 1.6 Who lives in apartments?



Source: Hazel Easthope, Yi Lu and Alejandra Rivera, *Australasian strata insights 2024: report and infographics*, City Futures Research Centre, UNSW Sydney, 2025, p. 10.

96 ANU Centre for Energy Systems, *Submission 73*, p. 1; Owners Corporation Network of Australia Limited, *Submission 61*, p. 14; Mike Roberts, et al., *Photovoltaics on apartment buildings*, p. 1; Victorian Council of Social Service, *Submission 86*, p. 1.

97 Easthope, Lu and Rivera, *Australasian strata insights 2024*, p. 10.

98 Owners Corporation Network of Australia Limited, *Submission 61*, p. 14.

99 Ibid.

100 Australian Housing and Urban Research Institute, *Meeting current and future needs of lower-income apartment residents in Australia*, 2020, pp. 1, 3.

Energy is essential to people's social and economic participation; it is also a significant household cost.¹⁰¹ In 2025, the average bill arrears for households seeking assistance from their energy retailer because they were unable to afford ongoing electricity usage was \$1,145. However, debts above \$10,000 were also reported by energy support services. The Consumer Action Law Centre, a consumer advocacy organisation based in Melbourne, reported that one customer called the National Debt Helpline in 2023 to seek assistance for a debt of \$34,102.¹⁰²

Rory Anderson is a Policy Adviser on energy and cost of living at the Victorian Council of Social Service, which represents the state's social and community sector. He told the Committee at a public hearing that social housing tenants are particularly vulnerable to high energy costs:

the tenants are some of the most vulnerable in the state, often getting by on very low and fixed incomes, experiencing intersecting hardships. Because of this, social housing residents are likely spending a lot more of their income on bills than most Victorians are.¹⁰³

Likewise, Matt Torney from Housing Choices Australia reported that most social housing tenants live alone, rely on set incomes and 'have very little capacity to absorb bill shock'.¹⁰⁴ The Victorian Public Tenants Association noted that energy costs have a big impact on public housing tenants.¹⁰⁵ Case Study 1.1 offers insight into public housing tenants' attitudes towards energy costs.

Case Study 1.1 Public housing tenants want more affordable energy

A 2021 survey found that public housing participants ranked the cost of heating and cooling their homes as one of the most important features of a property, and over 90% of them said their energy bills were one of their top three expenses.

In a follow-up 2023 survey, public housing participants were asked what they would do with energy bill savings if they had access to residential solar. Responses included:

"Heat my home in winter—have a test to find my biological family."

"Spend it on better quality food and take my children out occasionally."

(Continued)

¹⁰¹ Energy and Climate Change Ministerial Council, *National energy equity framework*, 2025, p. 5.

¹⁰² Victorian Council of Social Service, *Powering homes beyond fossil gas*, submission to Department of Transport and Planning, Building Electrification Regulatory Impact Statement, 2025, p. 10.

¹⁰³ Rory Anderson, Policy Adviser, Energy and Cost of Living, Victorian Council of Social Service, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 44.

¹⁰⁴ Matt Torney, *Transcript of evidence*, p. 46.

¹⁰⁵ Victorian Public Tenants Association, *Submission 34*, p. 5.

Case Study 1.1 Continued

“Have better quality food and buy other essentials like clothes. In winter my heater is on 24/7 due to my health and summer, the air conditioner is on most of the time during the day. Plus I have an air purifier that needs to be on 24/7 and am running an air compressor 24/7.”

“Buy replacements for items I really need.”

“I would love to have solar panels. The commission has built three units with them up the road. I would probably put it to food and utilities.”

Source: Victorian Public Tenants Association, *Submission 34*, p. 5.

Vulnerable households living in apartment buildings are at risk of being unable to afford or use energy services in their home to live a comfortable and healthy life.¹⁰⁶ Increasing access to renewable energy in apartment buildings could ease the burden of electricity prices on some of Victoria’s most vulnerable households.¹⁰⁷ As the Greater Dandenong City Council said, renewable energy can help make apartments more affordable to live in:

Having access to affordable housing doesn’t stop at the purchase or rental price, it must be affordable to live in. Residents experiencing socio-economic disadvantage, people from culturally and linguistically diverse backgrounds, and people with disabilities or health conditions are most at risk of energy hardship. These groups also stand to benefit the most from access to renewable and affordable energy.¹⁰⁸

Rory Anderson said ‘social housing tenants stand to benefit a great deal from access to renewable and more affordable electricity, perhaps the most of any cohort living in apartments’. He urged that ‘[i]t is therefore crucial that tenants in social housing apartments are not left behind’.¹⁰⁹

Increasing apartment residents’ access to renewable and affordable electricity is critical to energy equity. Energy equity exists ‘where all consumers can fairly benefit from the energy system and access and use energy services to live a comfortable, dignified and healthy life’.¹¹⁰

FINDING 5: Low-income households, lone occupants, renters and social housing tenants are over-represented in apartment buildings. Scaling up solar for apartments will improve energy affordability for apartment residents and help ease the cost of living for some of Victoria’s most vulnerable households.

¹⁰⁶ Greater Dandenong City Council, *Submission 22*, p. 5.

¹⁰⁷ Dehghanimadvar, et al., *Rooftop solar potential of Australian housing stock by tenure and dwelling type*, p. 8; Greater Dandenong City Council, *Submission 22*, p. 5; ANU Centre for Energy Systems, *Submission 73*, p. 1.

¹⁰⁸ Greater Dandenong City Council, *Submission 22*, p. 5.

¹⁰⁹ Rory Anderson, *Transcript of evidence*, p. 44.

¹¹⁰ Energy and Climate Change Ministerial Council, *National energy equity framework*, p. 7.

1

1.6 Solar for apartments is foundational to a net zero carbon future

Increasing renewable energy generation and use in apartment buildings is also critical to Victoria’s (and Australia’s) transition to a renewable and net zero carbon emissions future.¹¹¹ The Victorian Government has legislated renewable energy generation and storage targets to support the state’s transition from energy generation that uses fossil fuels (such as coal) to renewables (like solar and wind). It has also legislated interim carbon emission reduction targets (based on 2005 emissions levels) and established policies to achieve net zero carbon emissions by 2050 or sooner (see Table 1.3).¹¹²

Table 1.3 Victorian energy transition and decarbonisation laws

Legislation	Targets	Supporting policies
<i>Renewable Energy (Jobs and Investment) Act 2017</i> (Vic)	Renewable energy generation targets: • 25% by 2020 • 40% by 2025 • 65% by 2030 • 95% by 2035. Energy storage targets: • at least 2.6 GW by 2030 • at least 6.3 GW by 2035.	<i>Cleaner, Renewable: Our Plan for Victoria’s Electricity Future</i> (2024) sets a plan to transition away from fossil fuels and deliver a reliable electricity system.
<i>Climate Action Act 2017</i> (Vic)	Emissions targets: • 15–20% below 2005 levels by 2020 • 28–33% by 2025 • 45–50% by 2030 • 75–80% by 2035 • net zero emissions by 2045.	<i>Victoria’s climate change strategy 2026–2030</i> (2025) outlines roadmaps, strategies and programs to reduce emissions.

Sources: Climate Works Centre, *Leading climate policies from Australia’s states and territories: summary report*, 2022, pp. 10–11; Department of Energy, Environment and Climate Action, *Victoria’s Climate Change Strategy 2026–30*, 2025, p. 9; Department of Energy, Environment and Climate Action, *Victorian renewable energy and storage targets*, 2025, <<https://www.energy.vic.gov.au/renewable-energy/victorian-renewable-energy-and-storage-targets>> accessed 17 December 2025.

The proliferation of solar in apartment buildings will play an important role in achieving these goals.¹¹³ Apartments and other multi-unit dwellings are a significant component of the built environment and contribute 12% of greenhouse gases nationally.¹¹⁴ Professor Jian Zuo et al. submitted that apartment buildings are ‘often associated with higher emissions intensity’ than freestanding homes due to their greater population density.¹¹⁵ Apartment buildings also offer a significant opportunity to increase solar electricity generation. The School of Photovoltaic and Renewable

111 Climate Works Centre, *Leading climate policies from Australia’s states and territories: summary report*, report prepared by Lani Perlesz, Matt Lyon and Dr Tyra Horngren, 2024, pp. 10–11.

112 Ibid.

113 Environment Victoria, *Renewable energy*.

114 Metropolitan Community Power Hub, *Guide to Solar for Apartments*, pp. 6–7.

115 Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 2.

Energy Engineering at UNSW Sydney has calculated that Victoria could generate around 760 MW of electricity by installing solar systems on apartments and avoid 15 megatonnes (Mt) of carbon emissions.¹¹⁶

In addition, the same report estimates that across all of Victoria's social housing there is the potential to install between 246–416 MW of solar capacity.¹¹⁷ In June 2024, about 64,000 of the state's social housing properties were public housing and around 18,000 were community housing. About a further 2,000 homes were Indigenous community housing.¹¹⁸ The Victorian Public Tenants Association suggested that 23,461 of the state's 64,000 public housing properties are suitable for residential solar systems. It did not indicate how much of this potential has already been realised.¹¹⁹

FINDING 6: Increasing solar in apartment buildings is foundational to Victoria's transition to a renewable energy and net zero carbon emissions future.

1.7 Governments are seeking to increase rooftop solar uptake

For several years, the Victorian and Australian governments have been running programs to support the installation of rooftop solar and other sustainability upgrades in apartment buildings and community housing. These are described below.

1.7.1 Solar for Apartments Program

The Victorian Government is seeking to scale up the installation of rooftop solar in existing apartment buildings through its Solar for Apartments Program. Launched in 2024, the program provides financial support to low- and middle-income households living in apartments and other multi-unit dwellings to purchase and install a shared rooftop solar system.¹²⁰ It defines multi-unit dwellings as groups of at least five 'townhouses and units under the control of an [OC] and sharing a common property rooftop'.¹²¹ It is run by Solar Victoria (which sits under the Department of Energy, Environment and Climate Action) and jointly funded by the Australian and Victorian governments with each contributing \$16.1 million.¹²² Guy Pritchard, Director of Programs at Solar Victoria, said that industry development is also an objective of the program.¹²³

¹¹⁶ Dehghanimadvar, et al., *Rooftop solar potential of Australian housing stock by tenure and dwelling type*, p. 35.

¹¹⁷ Ibid., p. 18.

¹¹⁸ Australian Institute of Health and Welfare, *Housing assistance in Australia: web report*, 2025, <<https://www.aihw.gov.au/reports/housing-assistance/housing-assistance-in-australia/contents/social-housing-dwellings>> accessed 8 April 2026.

¹¹⁹ Victorian Public Tenants Association, *Submission 34*, p. 5; Department of Families, Fairness and Housing *Annual report 2024–25*, 2026, p. 13.

¹²⁰ Solar Victoria, 'Early insights from Victoria's Solar for Apartments Program', pp. 4, 6.

¹²¹ Solar Victoria, *Solar for Apartments*, 2026, <<https://www.solar.vic.gov.au/apartments>> accessed 7 April 2026.

¹²² Solar Victoria, *Solar for Apartments Program terms and conditions: round 2 and round 3*, 2025, <<https://www.solar.vic.gov.au/solar-apartments-round2-terms-conditions>> accessed 7 April 2026; Guy Pritchard, Director, Programs, Solar Victoria, Department of Energy, Environment and Climate Action, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 3.

¹²³ Guy Pritchard, *Transcript of evidence*, p. 3.

Under the program, OCs can apply for rebates of up to \$2,800 per household for rooftop solar, to a maximum of 50 apartments and \$140,000 per building.¹²⁴ Eligible buildings are those classified under the National Construction Code as a Class 1a Building (townhouses) or a Class 2 Domestic Building (an apartment complex). They must also be no more than eight storeys high and have a median apartment value of no more than \$950,000.¹²⁵ Guy Pritchard explained that the program is limited to eight-storey buildings to ensure enough solar is being generated to adequately supply individual apartments:

We think about 1 kilowatt per apartment is a good measure, and anything over eight storeys and more than 50 apartments you just do not get the volume or the quantity of solar being generated that will make it viable for those residents.¹²⁶

Eligible solar systems are those that equitably share the benefits of renewable energy among participating households, demonstrate a payback period of less than 10 years and are installed on common property.¹²⁷ They must supply power ‘behind the meter’ (meaning electricity is used within the home directly and is not managed by an energy retailer) and be installed by a solar retailer authorised by Solar Victoria.¹²⁸

Across Victoria, more than 583 apartment buildings (representing 5,593 households) are likely to be eligible for the program.¹²⁹

Community housing is not eligible for the program but can access government subsidies to support the installation of rooftop solar under the Solar for Community Housing Program (see Section 1.7.2).¹³⁰

Solar for Apartments Program achievements as of February 2026

As of February 2026, two rounds of the Solar for Apartments Program had been delivered and a third was underway (launched 19 September 2025 and closing 30 June 2027). Solar Victoria had received a total of 674 applications of which 157 had been approved (covering 2,983 households). Table 1.4 shows the municipalities with the highest number of applications to the program.¹³¹

¹²⁴ Solar Victoria, *Solar for Apartments*.

¹²⁵ Ibid.; Solar Victoria, ‘Solar for Apartments’, paper presented at All Energy Conference, Melbourne, 29–30 October 2025, p. 12.

¹²⁶ Guy Pritchard, *Transcript of evidence*, pp. 3–4.

¹²⁷ Solar Victoria, *Solar for Apartments*.

¹²⁸ Solar Victoria, ‘Solar for Apartments’, p. 12.

¹²⁹ Ibid., p. 11.

¹³⁰ Department of Energy, Environment and Climate Action (DEECA), *Submission 89*, p. 3.

¹³¹ Solar Victoria, ‘Solar for Apartments’, p. 9; DEECA, *Submission 89*, p. 1.

Table 1.4 Applications to the Solar for Apartments Program, by municipality (top 5)

Municipality	Number of applications	Proportion from owners	Proportion from renters
Merri-bek	25	55%	45%
Port Phillip	18	55%	45%
Yarra	18	46%	54%
Darebin	14	43%	57%
Melbourne	12	48%	52%

Source: Department of Energy, Environment and Climate Action, *Submission 89*, pp. 1–2.

A total of 136 installations had been completed (servicing 2,602 households) and representing 3.43 MW of renewable energy generation capacity.¹³² Most installations were in Melbourne; just two regional buildings participated. On average, participating buildings were three storeys and contained 19 apartments per building. Solar Victoria audited around 2.5% of these installations to verify quality and compliance.¹³³ Around 46% of households connected to rooftop solar through the program were renting.¹³⁴

The average cost of a shared rooftop solar system for apartment owners after the rebate was \$950 (\$3,937 before the rebate).¹³⁵ The average capacity of the solar system installed was 1.46 kW.¹³⁶

Guy Pritchard said that the main reason applicants drop out of the program is because they fail to secure OC support or because the building's electrical infrastructure, such as the switchboard, needs upgrading to accommodate solar.¹³⁷ Solar Victoria reported that it reviewed and refined the Solar for Apartments Program between rounds 1 and 2, which assisted in lowering applicant attrition, created a more streamlined application process and increased retailer installation capacity in round 2.¹³⁸ It suggested that the program is now 'performing strongly against its equity and market development objectives'.¹³⁹

Solar Victoria has also identified several challenges to further scaling up solar in apartment buildings, including:

- OC governance and decision-making processes
- technical complexity of rooftop solar in apartments (retailers require capacity building to ensure installations are compliant with regulations)

¹³² DEECA, *Submission 89*, p. 1.

¹³³ Guy Pritchard, *Transcript of evidence*, p. 3.

¹³⁴ DEECA, *Submission 89*, p. 1.

¹³⁵ Ibid.

¹³⁶ Solar Victoria, 'Solar for Apartments', p. 9.

¹³⁷ Guy Pritchard, *Transcript of evidence*, p. 6.

¹³⁸ DEECA, *Submission 89*, p. 2.

¹³⁹ Ibid.

- retailer cashflow issues (due to long delivery timeframes and cost variations arising from complexity)
- retailer capacity constraints (it is difficult to scale up delivery as retailers are operating at capacity)
- eligibility exclusions (caps on apartment numbers and the exclusion of embedded networks).¹⁴⁰

Guy Pritchard from Solar Victoria said the initial rounds of the program have shown that the barriers to solar are not just financial:

76 per cent of the project cost is covered through the combination of the rebates, the \$1400 each from the Commonwealth and the state, and 23 per cent of those projects have actually come out at zero cost as well. So it addresses that barrier of finance quite significantly, and that has been a real benefit to get the program kickstarted and running. But there are still a lot of barriers, which is why there has not really been a huge explosion of projects ...¹⁴¹

Solar Victoria reported that it is considering how to address these barriers, including the possibility of refining the Solar for Apartment Program's eligibility criteria for future rounds.¹⁴² Inquiry stakeholders highlighted the success of the Solar for Apartments Program and supported its continuation.¹⁴³ For example, the Smart Energy Council described the program as 'transformational':

Victoria's Solar for Apartments program has been transformational, connecting thousands of apartments to solar that would not otherwise have had access ... Shared solar allocation technologies have improved significantly, enabling precise and equitable distribution of rooftop generation across individual meters within a single building. These developments have de-risked the technology landscape considerably.¹⁴⁴

Electrify Boroondara, a community group advocating for a clean energy future, submitted that the Solar for Apartments Program 'has shown what shared solar can achieve when barriers to installation are lowered'.¹⁴⁵ The Committee also heard that the program has grown the solar industry's capacity to service apartment buildings.¹⁴⁶

¹⁴⁰ Ibid.

¹⁴¹ Guy Pritchard, *Transcript of evidence*, p. 4.

¹⁴² DEECA, *Submission 89*, p. 2.

¹⁴³ Smart Energy Council, *Submission 32*, pp. 1, 3; Solar Citizens, *Submission 72*, p. 4; Property Council of Australia, *Submission 75*, pp. 9–10; Yarra Energy Foundation, *Submission 48*, p. 3; Dr Mike Roberts, *Transcript of evidence*, p. 21; Clean Energy Council, *Submission 66*, pp. 3, 5, 7; Energy Consumers Australia, *Submission 87*, p. 2; Cameron Knox, Chief Executive Officer and Co-founder, Allume Energy, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 10; Electrify Boroondara, *Submission 13*, p. 3.

¹⁴⁴ Smart Energy Council, *Submission 32*, p. 3.

¹⁴⁵ Electrify Boroondara, *Submission 13*, p. 3.

¹⁴⁶ Merri-bek City Council, *Submission 76*, p. 6; Solar Citizens, *Submission 72*, p. 4.

Several stakeholders recommended expanding the program's aims and eligibility criteria to support different types of residential solar systems and batteries to be installed into a larger array of buildings.¹⁴⁷ These options are discussed throughout the report.

FINDING 7: The Victorian Government's Solar for Apartments Program is demonstrating the feasibility and benefits to individual households and solar retailers of installing shared rooftop solar on apartment buildings.

1.7.2 Solar for Community Housing Program

Launched in the 2018–19 financial year, the Solar for Community Housing Program provides financial assistance to eligible CHOs to install solar PV systems on social housing (existing or under construction). It aims to help reduce cost-of-living pressures for low-income households.¹⁴⁸

Not-for-profit CHOs can apply for a rebate of up to \$1,400 per tenancy (or a maximum of 50% of the total installation cost) to install rooftop solar on the social housing they manage. CHOs must confirm that 100% of resulting energy cost savings are passed onto social housing tenants.¹⁴⁹

Solar for Community Housing Program achievements as of February 2026

Since the Solar for Community Housing Program was established, year-on-year uptake has varied significantly (see Table 1.5).

¹⁴⁷ Smart Energy Council, *Submission 32*, pp. 1, 3; Property Council of Australia, *Submission 75*, pp. 9–10; Yarra Energy Foundation, *Submission 48*, p. 3; Dr Mike Roberts, *Transcript of evidence*, p. 21; Associate Professor Nicola Willand, et al., *Submission 27*, p. 9; Clean Energy Council, *Submission 66*, pp. 5, 7; Allume Energy, *Submission 31*, p. 2; Energy Consumers Australia, *Submission 87*, p. 2.

¹⁴⁸ Solar Victoria, *Solar rebates for community housing*, 2026, <<https://www.solar.vic.gov.au/solar-community-housing>> accessed 22 April 2026.

¹⁴⁹ Ibid.

Table 1.5 Solar for Community Housing Program installations and rebates paid, 2018–19 to 2025–26

Financial year	Number of installations	Total rebates paid
2018–19	191	\$609,333
2019–20	31	\$68,420
2020–21	310	\$573,567
2021–22	147	\$227,359
2022–23	127	\$173,134
2023–24	394	\$630,803
2024–25	36	\$43,400
2025–26	15	\$7,000

Source: Department of Energy, Environment and Climate Action, *Submission 89*, p. 3.

The Renters of South Port Community Housing Group represents tenants of social housing managed by the South Port Community Housing Group (SPCHG). It observed that none of the tenants it represents were aware of the program. Further it observed that if the program was accessed by the SPCHG, tenants would have poor visibility of any energy savings delivered as energy costs are rolled into rental rates.¹⁵⁰

1.7.3 Energy efficiency programs

The Victorian Government's Energy Efficiency in Social Housing Program (EESHP), in partnership with the Australian Government's Social Housing Energy Performance Initiative (SHEPI), will upgrade the energy efficiency of 19,000 social homes in Victoria by June 2029.¹⁵¹

Together the programs aim to reduce energy bills for residents, improve health outcomes by providing more comfortable homes and progress the electrification of community housing.¹⁵²

The Community Housing Upgrades Stream of EESHP provides grant funding to CHOs to improve the energy efficiency of, and electrify, the community homes in their portfolios. A maximum of \$20,000 is available per property with a co-contribution from the CHO mandatory in most cases. CHOs must provide at least two of the following eligible upgrades to each property that funding is allocated to:

- reverse cycle air conditioners (to provide heating and cooling)
- draughtproofing
- ceiling insulation

¹⁵⁰ Renters of South Port Community Housing Group, *Submission 52*, pp. 2–3.

¹⁵¹ Department of Energy, Environment and Climate Action (DEECA), *Questions about the program*, 2026, <<https://www.energy.vic.gov.au/grants/energy-efficiency-in-social-housing-program/program-questions>> accessed 12 June 2026.

¹⁵² Ibid.

- electric cooktops (including induction)
- hot water heat pumps
- water efficient showerheads
- rooftop solar (funding available for CHOs only)
- gas abolishment (where full electrification has been achieved via other upgrades).¹⁵³

CHOs are required to pass on the full value (100%) of energy savings achieved by the upgrades to their tenants.¹⁵⁴

FINDING 8: Federal and state government investment in the sustainability of social housing is improving the thermal and energy efficiency of homes and supporting their electrification. It is also increasing residential solar in community housing.

Opportunities to improve the operation of EESHP and SHEPI are explored in Chapter 3.

1.7.4 Other government programs supporting renewables

In addition to the programs already described, households living in units or townhouses with independent roof space and private yards may also be able to access Australian Government discounts and rebates for residential solar and batteries through the programs in Table 1.6. It is unclear whether apartment residents or OCs can also access these schemes.

Table 1.6 Australian Government solar and battery rebate programs

Program	Aims
Cheaper Home Batteries Program	A \$7.2 billion program providing households, businesses and community organisations with a discount of around 30% on the upfront cost of installing small-scale battery systems (up to 100 kWh).
Small-scale Renewable Energy Scheme	A program incentivising households and businesses to invest in small-scale renewable energy, like rooftop solar, solar batteries, solar water heaters and air source heat pumps. Eligible small-scale systems can earn ‘small-scale technology certificates’ (STCs) based on how much electricity they generate, store and export to the grid. Energy retailers can buy STCs using payments or discounted energy bills.
Community Batteries for Household Solar program	A \$200 million grant program to assist businesses and communities to install neighbourhood batteries that provide shared storage options for households.

Sources: Department of Climate Change, Energy, the Environment and Water, *Cheaper Home Batteries Program*, <<https://www.dcccew.gov.au/energy/programs/cheaper-home-batteries>> accessed 10 June 2026; Australian Clean Energy Regulator, *Small-scale renewable energy scheme*, <<https://cer.gov.au/schemes/renewable-energy-target/small-scale-renewable-energy-scheme>> accessed 10 December 2025; Department of Climate Change, Energy, the Environment and Water, *Community batteries for households solar program*, <<https://www.dcccew.gov.au/energy/renewable/community-batteries>> accessed 10 December 2025.

153 Ibid.; Victorian Public Tenants Association, *Submission 34*, p. 8; DEECA, *Submission 89*, p. 3.

154 DEECA, *Questions about the program*.

1.8 Inquiry process and scope

On 3 December 2025, the Legislative Assembly tasked the Environment and Planning Committee with examining the uptake of renewable energy technology in apartments and other multi-unit dwellings. It was asked to identify how access to renewable and affordable electricity can be expanded by considering:

- recent changes to technology and energy supply options in apartments
- how to overcome additional challenges faced by renters and social housing tenants when accessing renewable electricity
- practical ideas to improve affordability and access to clean energy in apartments and multi-unit dwellings
- how energy supply options impact different groups based on tenure, income, housing type and location
- any legislative, regulatory, planning and market reforms that can address current issues and promote proposed solutions.

As acknowledged upfront in this chapter, the Committee has scoped consideration of the energy efficiency and electrification of apartments into this Inquiry. This decision recognises that these are key factors in reducing household energy costs and demand on the grid, as well as preparing Victoria for a clean energy future. In its response to the Expert Panel review of the *Owners Corporation Act 2006* (Vic)—which is discussed in Chapter 2—the Victorian Government also noted that this Inquiry will investigate barriers to sustainability uptake in new and existing apartment buildings, and that the findings and recommendations will inform future policy.¹⁵⁵

The Committee called for submissions on 12 January 2026 via social media and by directly writing to over 300 stakeholders including:

- renewable technology companies and installers
- industry associations
- energy retailers and network service providers
- local governments
- unions
- research institutes and academics
- community and social housing organisations
- OC associations
- property developers
- strata managers.

¹⁵⁵ Victorian Government, *Response to Statutory Review of the Owners Corporation Act 2006*, June 2026, p. 13.

The Committee received a total of 92 submissions (see Appendix A for the list of submitters).

The Committee gathered further evidence to support its Inquiry by conducting public hearings in Melbourne on 24 March and 30 April 2026. It consulted apartment owners, industry peak bodies, renewable energy and environment groups, consumer advocacy groups, renewable technology companies, local government and the electrical sector among others (see Appendix A for a list of public hearing witnesses).

The Committee also invited input from each company responsible for managing Victoria's electricity distribution grid (known as distribution network service providers or DNSPs). It requested submissions and invited DNSP representatives to participate in public hearings. It was disappointed to receive only one submission—a combined one from CitiPower, Powercor and United Energy (which are jointly owned). None of the DNSPs accepted the invitation to appear at a public hearing. As Chapter 4 of this report details, updating the energy grid is a critical component of increasing solar in the apartment sector.

1.9 Report structure

This report has five chapters:

- This chapter, Chapter 1, has provided an overview of residential renewables in Victoria, including the uptake of rooftop solar systems in apartment buildings. It described the importance of scaling up adoption, the Victorian Government programs supporting this aim, and the scope of this Inquiry.
- Chapter 2 explores how the governance of apartment buildings can be refined to facilitate sustainability upgrades, such as installing residential solar.
- Chapter 3 addresses the additional barriers to residential solar and apartment electrification faced by rental households, apartment residents living in an embedded network and social housing tenants.
- Chapter 4 outlines various technical challenges preventing some apartment buildings from adopting residential solar and electrifying. It also considers solutions to ease these impediments.
- Chapter 5 describes how Victoria can embrace complementary approaches to increasing apartment residents' access to more renewable and affordable energy.

Chapter 2

Legislative reform to boost sustainability

Upgrading the sustainability of apartment buildings is a technically and legally complex undertaking. Projects like residential solar or the electrification of apartments cannot proceed without the collective support of owners. This requires engaging, educating and convincing a large and diverse group of people to agree to invest their money.¹ Evidence suggests that strata governance arrangements are a major barrier to scaling up the adoption of solar in existing apartment buildings. Legislative reform is needed to support owners corporations (OCs) to undertake this work.²

This chapter outlines the governance challenges inhibiting sustainability upgrades (such as residential solar or electrification) in apartment buildings and explores options to address these.

2.1 Strata governance is complex

In Victoria, apartment buildings and unit complexes are governed by OCs (formerly known as body corporates) under the *Owners Corporations Act 2006* (Vic) (the OC Act). An OC is automatically created when a property subdivision containing separately owned ‘lots’ (apartments or units) and jointly owned ‘common areas’ (foyers, lifts and carparks) is registered.³ Plans of subdivision (formerly known as strata plans in Victoria) are registered with Land Victoria, a state government entity that maintains information about land ownership.⁴ The collective ownership of such properties is sometimes called a strata scheme in everyday usage.

All apartment/unit owners are automatically members of an OC and have legal and financial responsibilities to the corporation.⁵ Some large apartment buildings are subject to multiple OCs.⁶

¹ Merri-bek City Council, *Submission 76*, p. 6.

² Ibid.

³ Strata Community Association Victoria, *A guide to owning, managing and living in an owners corporation: key information*, 2025, p. 4.

⁴ Department of Transport and Planning, *What we do: an introduction to Land Registry Services (LRS)*, 2024, <<https://www.land.vic.gov.au/land-registration/first-time-here/what-we-do>> accessed 18 December 2025; Strata Community Association Victoria, *A guide to owning, managing and living in an owners corporation*, p. 4.

⁵ Strata Community Association Victoria, *A guide to owning, managing and living in an owners corporation*, p. 4.

⁶ Dr Janette Corcoran, Board Director, Owners Corporation Network of Australia, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 36; Strata Community Association Victoria, *A guide to owning, managing and living in an owners corporation*, p. 6.

OCs have statutory governance, reporting and administrative obligations, which vary depending on the number of apartments in a building and the scale of its financial activity.⁷ These can include:

- managing and administering common areas (including associated fixtures and services)
- keeping a maintenance plan and a fund for capital works (mandatory if the complex has over 50 lots)
- maintaining required insurance policies
- financial management and record keeping, including raising fees from the lot owners to meet financial obligations
- ensuring compliance with, and carrying out any functions and duties under, the OC Act, the *Owners Corporations Regulations 2018* (Vic) and other relevant legislation.⁸

The most stringent requirements apply to tier one buildings (those with more than 100 apartments) and scale downwards to tier five buildings (a two-lot subdivision), which are exempt from many of the legal requirements of OCs.⁹

OCs can delegate authority to meet these obligations and responsibilities. They can elect a committee of representative apartment owners (known as an OC committee), or they can appoint a delegate (such as a professional OC manager)—see Figure 2.1.¹⁰ Complexes with 10 or more lots must elect an OC committee.

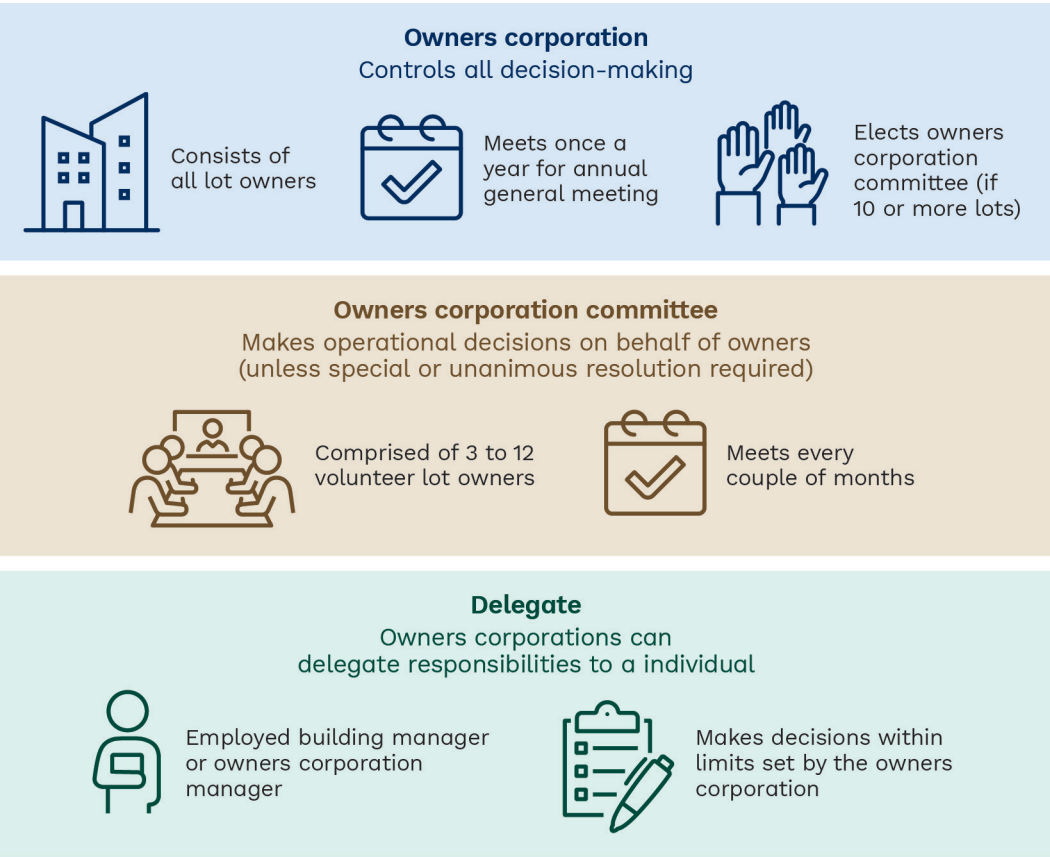
⁷ Strata Community Association Victoria, *A guide to owning, managing and living in an owners corporation*, p. 11; Owners Corporation Network of Australia Limited, *Submission 61*, p. 1.

⁸ Strata Community Association Victoria, *A guide to owning, managing and living in an owners corporation*, pp. 11–12.

⁹ *Ibid.*, p. 11.

¹⁰ *Ibid.*, p. 12.

Figure 2.1 Different levels of authority in an owners corporation



Sources: Adapted from Strata Community Association Victoria, *A guide to owning, managing and living in an owners corporation: key information*, 2025, pp. 12, 17; Dr Graham Moore, Electrification Adviser, Darebin Climate Action Now, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 16.

Renters are typically excluded from all levels of authority in OCs. Renters cannot serve on OC committees unless they are formally appointed as a proxy for an apartment owner, in which case they can move motions and vote on decisions. Renters who are not appointed as a proxy can attend OC meetings as observers or participate in a sub-committee. They cannot raise motions or vote on decisions.¹¹ This means they cannot initiate or actively support sustainability upgrades to their homes.¹²

2.1.1 Decision-making in apartment buildings

OCs make decisions or resolutions through a vote of all apartment owners (one vote per lot). A vote can occur via a show of hands at an annual general meeting (AGM) or via written ballot. If an owner cannot attend a meeting, another person can be appointed as a proxy to vote on their behalf.¹³

11 Strata Management Consultants, *Can a non-owner serve on a strata committee?*, 2025, <<https://strataconsultants.com.au/articles/can-a-non-owner-serve-on-a-strata-committee-victoria>> accessed 4 April 2026; Associate Professor Saman Gorji, Director, Centre for Smart Power and Energy Research, Deakin University, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 22.

12 Associate Professor Saman Gorji, *Transcript of evidence*, p. 22.

13 Strata Community Association Victoria, *A guide to owning, managing and living in an owners corporation*, pp. 17–18.

Sustainability upgrades in apartment buildings (such as residential solar or decommissioning shared gas hot water systems) typically require OC approval, whether they involve common areas or private apartments.¹⁴ Decisions can be made by an ordinary, special or unanimous resolution.¹⁵ Figure 2.2 describes the different approval thresholds for resolutions.

Figure 2.2 Types of owners corporation resolutions

Ordinary resolution	Special resolution	Unanimous resolution
Used for most day-to-day decisions	Used for major decisions	Used for property ownership decisions
Includes decisions that relate to: · annual budgets · routine maintenance · administration.	Includes decisions that significantly affect: · the rights and obligations of owners · financial expenditure · common property.	Includes fundamental decisions that relate to: · selling common areas · buying land · altering boundaries, lot entitlement or liability.
 Requires at least 50% of owners to agree	 Requires at least 75% of owners to agree	 Requires 100% of owners to agree

Source: Adapted from Consumer Affairs Victoria, *Voting and ballot guidelines—owners corporations*, 2021, <<https://www.consumer.vic.gov.au/housing/owners-corporations/meetings-and-committees/voting-and-ballot-guidelines>> accessed 4 April 2026.

Many significant building decisions are made at an AGM. AGMs are an opportunity for apartment owners to discuss issues and plans for their building and elect an OC committee for the next 12 months. It is not compulsory for owners to attend.¹⁶ Indeed, stakeholders reported that OC meetings in many buildings are poorly attended, particularly by non-resident owner-investors who may be disengaged with governance.¹⁷ Ari Pickering, who works with the Energy Justice Campaign at the environmental advocacy organisation Friends of the Earth Melbourne, explained that this can make it difficult to build the support necessary to pursue sustainability upgrades:

let us say you have got 70 apartments, you have got 20 people who turn up to the meeting and they are a different 20 people to the meeting beforehand ... in these sorts of situations it is really hard to get those decisions made.¹⁸

14 Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006: final report*, report for The Hon Nick Staikos, Minister for Consumer Affairs, December 2025, p. 53.

15 Strata Community Association Victoria, *A guide to owning, managing and living in an owners corporation*, pp. 17–18.

16 Ibid., p. 17.

17 Owners Corporation Network of Australia Limited, *Submission 61*, pp. 7, 14–15.

18 Ari Pickering, Energy Justice Campaign, Friends of the Earth Melbourne, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 18.

Likewise, renewable energy expert Professor Rebecca Yang from The University of Melbourne said that building the support for sustainability upgrades can substantially delay projects.¹⁹

OCs can also make building rules ‘for the purpose of the control, management, administration, use or enjoyment of common property or of a lot’.²⁰ This can include preventing alterations to balconies or a building’s façade. These rules can also be a barrier to sustainability upgrades, such as residential solar.²¹

2.1.2 Diverse stakeholders have varied capabilities and interests

Apartment governance involves a diverse range of stakeholders with unique and often competing interests. OCs may be as varied as the general Victorian population with owners of various ages, socio-economic statuses, cultures and primary languages. They may include a mix of owner-occupiers and owner-investors who may engage intermediaries (such as real estate agents or OC managers) to represent their interests. They must also work with rental households and sometimes with social housing tenants. This complicates decision-making, particularly for proposals to upgrade the sustainability of a building or install residential solar, as the impacts on owners will not be uniform.²² The varying impact of solar for apartments on different stakeholders, and their ability to pursue these upgrades, is explored below.

Renters

Many renters are interested in improving the sustainability of their homes, particularly through more efficient electrical appliances, rooftop solar and thermal efficiency upgrades.²³ Sustainability upgrades can deliver significant benefits to renters, including improved comfort and more affordable energy (where energy savings are passed on and not negated by a rental increase).²⁴

However, as already acknowledged, renters typically cannot propose or vote on sustainability upgrades in apartment buildings, despite comprising almost 50% of apartment residents. Peak body for the social and community sector the Victorian Council of Social Service (VCOSS) noted that renters are also unlikely to approach their landlord to request sustainability upgrades due to fear of being evicted or that upgrades would result in rental increases.²⁵

¹⁹ Professor Rebecca Yang, *Submission 38*, p. 5.

²⁰ Consumer Affairs Victoria, *How to make owners corporation rules*, 2026, <<https://www.consumer.vic.gov.au/housing/owners-corporations/rules/how-to-make-owners-corporation-rules>> accessed 4 April 2026.

²¹ Owners Corporation Network of Australia Limited, *Submission 61*, p. 3.

²² Ibid., pp. 13–15.

²³ Environment Victoria, *Submission 42*, p. 7.

²⁴ Owners Corporation Network of Australia Limited, *Submission 61*, p. 14.

²⁵ Victorian Council of Social Service, *Submission 86*, p. 6.

Owner-occupiers

Anecdotal evidence suggests that support for sustainability upgrades in apartment buildings is typically highest among owner-occupiers. More affordable and renewable energy can reduce common area levies and apartment energy costs. It can make homes more comfortable and may increase their resale value.²⁶

However, owner-occupiers are less likely to engage with sustainability upgrades when they view apartment ownership as a stepping stone to another property. Peak body for strata owners the Owners Corporation Network of Australia (OCN) said that '[s]hort-term residents may prioritise immediate affordability over long-term asset improvement'.²⁷ Apartment buildings are also home to many smaller, low-income households who may not be able to afford the high upfront costs of upgrades such as residential solar.²⁸

Owner-investors

Owner-investors have little financial incentive to invest in renewable technology, especially when the upfront costs are high, tenants benefit from energy savings and the return on investment through increased resale value or rental yield is uncertain.²⁹ Many Inquiry stakeholders noted that this 'split incentive' is a significant barrier to energy upgrades in apartment buildings.³⁰ The Committee explores options for addressing this split incentive in Chapter 3.

Moreover, owner-investors do not typically live in the same building and may be based interstate or overseas.³¹ OCN reported low owner-investor participation in building governance, including 'delayed responses, abstentions or conservative voting behaviour', which can block sustainability upgrades, even when there are clear benefits for residents.³² It said securing OC approval for sustainability upgrades can be particularly difficult when the majority of apartment owners are investors.³³

Real estate agents

Many owner-investors engage a real estate agent to act as their intermediary and manage their property on their behalf. This can further impede owner-investor engagement with building governance as agents filter and interpret information and

²⁶ Owners Corporation Network of Australia Limited, *Submission 61*, p. 14.

²⁷ Ibid.

²⁸ ANU Centre for Energy Systems, *Submission 73*, p. 1; Owners Corporation Network of Australia Limited, *Submission 61*, p. 14; Mike Roberts, et al., *Photovoltaics on apartment buildings: project report*, Centre for Energy and Environmental Markets, UNSW Sydney, 2019, p. 1; Victorian Council of Social Service, *Submission 86*, p. 1.

²⁹ Owners Corporation Network of Australia Limited, *Submission 61*, p. 14.

³⁰ Green Building Council of Australia, *Submission 77*, p. 3; Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 10; Friends of the Earth Melbourne, *Submission 67*, p. 2; Paul Richards, *Submission 17*, p. 2.

³¹ Owners Corporation Network of Australia Limited, *Submission 61*, p. 7.

³² Ibid.

³³ Dr Janette Corcoran, *Transcript of evidence*, p. 36.

may favour inaction.³⁴ OCN said that real estate agents are a barrier to increasing apartment buildings' access to renewable and affordable energy:

Where estate agents prioritise minimising landlord costs or administrative burden, sustainability and energy initiatives may be framed as discretionary or high-risk, reinforcing investor resistance. Conversely, where estate agents lack understanding of strata governance or energy implications, critical information may not be conveyed effectively to owners.³⁵

Environmental advocacy group Environment Victoria said that real estate agents (and OC managers) also 'ignored or brushed off' renter requests about sustainability upgrades or responded with inaccurate information.³⁶

Owners corporation committees

OC committees are central to apartment governance and therefore critical to sustainability upgrades in buildings, including residential solar. It is the OC committee that is responsible for advising owners of any proposed sustainability upgrade. They must secure a special resolution to proceed with upgrades, negotiate fair cost and benefit sharing, arrange finances (through a loan or levy) and maintain records. OC committees may also manage the technical side of upgrades, including feasibility studies, design and any structural remediations necessary.³⁷

A joint submission from the Victorian Greenhouse Alliances (VGAs), a climate action advocacy body, and the Council Alliance for a Sustainable Built Environment (CASBE), an association of local governments, highlighted that this is a significant undertaking for a group of 'overworked' volunteers with little or no training.³⁸ VCOSS said the complexity is a barrier to improving sustainability in apartments:

implementing apartment building retrofits requires technical knowledge, an understanding of strata legislation, and the ability to engage, educate, and convince a group of people to agree and invest their money. This complexity creates a huge number of barriers to retrofitting apartments ... most people who participate in owners corporations are doing it in their spare time, with limited capacity, and little information at hand.³⁹

Local governments suggested that there is little government support, information or resources to assist OC committees to perform their role.⁴⁰ For example, the City of Melbourne asserted that state and federal governments have 'failed to invest in the

³⁴ Owners Corporation Network of Australia Limited, *Submission 61*, p. 7; Commissioner for Residential Tenancies, *Submission 82*, p. 3.

³⁵ Owners Corporation Network of Australia Limited, *Submission 61*, p. 7.

³⁶ Environment Victoria, *Submission 42*, p. 6.

³⁷ Dr Janette Corcoran, *Transcript of evidence*, p. 36; Owners Corporation Network of Australia Limited, *Submission 61*, p. 6; Merri-bek City Council, *Submission 76*, p. 6.

³⁸ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 3.

³⁹ Victorian Council of Social Service, *Submission 86*, p. 9.

⁴⁰ Let Me Be Frank, *Working with apartment and strata communities: a handbook for local governments*, report for City of Melbourne, 2025, p. 50; City of Melbourne, *Submission 84*, p. 15; Yarra City Council, *Submission 50*, pp. 1–2, 5.

education, skill, and culture building that needs to go hand-in-hand with the physical infrastructure’:

This particularly applies to the Victorian Government. They are the party responsible for the legislation under which these buildings and communities are governed. Currently, owners corporations are supported via Consumer Affairs Victoria. However, the information and services provided are critically insufficient to support the needs of people living in and owning in residential strata titled buildings.⁴¹

Stakeholders observed that OC committees that lack the governance and technical expertise to progress sustainability upgrades are typically risk averse and may not engage with proposals. Dr Kat Lucas-Healey, Senior Climate and Energy Advisor at Environment Victoria, said that owners suggesting these initiatives are often quickly dismissed by OC committees who ‘do not necessarily know how to deal with those kinds of requests’.⁴² In its submission, Environment Victoria spoke of:

people who had approached their OC with proposals for solar, hot water upgrades, and others ideas, and found disinterest and, at times, dysfunction. Many owners gave up progressing measures that would improve access to affordable and renewable energy because it was all too hard. In some cases, owners could not even elicit a response to their proposal. In others, OCs relied on low quality information, such as unsubstantiated fears about electric vehicle battery fires.⁴³

OCN noted that OC committees often have a high turnover of volunteers, which means governance and technical expertise is also easily and frequently lost, further constraining progress towards sustainability upgrades.⁴⁴ The Committee heard that incorporating solar into apartments can take anywhere between one and five years.⁴⁵

Social change agency Let Me Be Frank said OC committees ‘lack the information, training, and support structures they need’ to succeed in their volunteer roles and improve their buildings’ access to more renewable and affordable energy.⁴⁶

Owners corporation managers

OC committees may engage an individual or company to assist in administering an OC or managing the building. Industry peak body, the Strata Community Association Victoria (SCA Vic), noted that this is an ‘exceptionally complex role’ which ‘combines legal compliance, financial stewardship, building maintenance, safety, and people management across a sector of enormous scale and value’.⁴⁷ OC managers are

⁴¹ Let Me Be Frank, *Working with apartment and strata communities*, p. 50.

⁴² Dr Kat Lucas-Healey, Senior Climate and Energy Advisor, Environment Victoria, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 2.

⁴³ Environment Victoria, *Submission 42*, p. 4.

⁴⁴ Owners Corporation Network of Australia Limited, *Submission 61*, p. 11.

⁴⁵ Dr Graham Moore, Electrification Adviser, Darebin Climate Action Now, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 18; Tim Shue, General Manager, Business and Strategic Partnerships, Yarra Energy Foundation, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 18.

⁴⁶ Let Me Be Frank, *Submission 85*, p. 2.

⁴⁷ Strata Community Association Victoria, *Submission 78*, p. 4.

particularly important where OC committees lack the time and expertise to administer a building effectively.⁴⁸

Stakeholders noted that OC managers often lack the technical expertise and motivation to progress proposals for sustainability upgrades, such as residential solar.⁴⁹ It was suggested that managers sometimes block proposals by citing ‘real or claimed’ site constraints as sustainability upgrades are not viewed as core responsibilities.⁵⁰ For example, Dr Graham Moore, Electrification Adviser at community advocacy group Darebin Climate Action Now, said:

the [OC] manager has no incentive at all to do absolutely anything that is going to create more work for them. So if the committee comes along, saying, ‘Oh, gee, wouldn’t it be nice to have solar,’ the [OC] manager will say, ‘Oh look, yeah. I’ve done that at another property and it didn’t work there, so let’s not do it here. Let’s not waste our time.’⁵¹

FINDING 9: Apartment governance involves diverse stakeholders with varied capabilities and competing interests. This complicates decision-making and can inhibit sustainability upgrades in apartment buildings as the incentives and impacts are not uniform.

These governance characteristics, combined with the fact that sustainability upgrades (such as residential solar) in apartment buildings are long and complicated projects, are a barrier to uptake. As discussed in the next section, the Victorian Government recognises this and is considering reforms to the OC Act to reduce the governance obstacles for apartments.

2.1.3 Review of the *Owners Corporation Act 2006 (Vic)*

In June 2025, the Victorian Government commissioned an independent review of the OC Act to identify and recommend opportunities to improve its operation. The review considered how this legislation provides for:

- apartment owners who are unable to afford OC fees
- the ethical conduct of OC committees and building managers
- measures to address statutory non-compliance by OC committees, building managers, apartment owners and residents
- the collective sale of property (that is, the sale of all apartments in a building to a single buyer)
- clear, effective and fair OC voting processes.⁵²

⁴⁸ Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006*, p. 39.

⁴⁹ Dr Graham Moore, *Transcript of evidence*, p. 16. Vincent Ng, *Submission 35*, p. 1; Owners Corporation Network of Australia Limited, *Submission 61*, p. 7; Environment Victoria, *Submission 42*, p. 6.

⁵⁰ Environment Victoria, *Submission 42*, p. 6.

⁵¹ Dr Graham Moore, *Transcript of evidence*, p. 16.

⁵² Department of Government Services, *Review of the Owners Corporations Act 2006*, 2025, <<https://engage.vic.gov.au/OCActReview>> accessed 4 April 2026.

The review also examined the efficacy of earlier legislative reform to improve the operation of OCs and addressed the impact of short-stay accommodation on the amenities of apartment buildings.⁵³

A consultation paper issued as part of the review acknowledged that the ‘uptake of sustainability items (such as solar) in apartment buildings still significantly lags that of detached homes’.⁵⁴ It highlighted governance barriers, such as obtaining a special resolution. It invited stakeholders to consider whether exempting sustainability upgrades from the requirement for a special resolution would make it easier to install these items in apartments.⁵⁵

The review consulted apartment owners, residents and other stakeholders from 5 August to 2 September 2025.⁵⁶ A final report making 51 recommendations was provided to the Minister for Consumer Affairs, the Hon Nick Staikos MP, in December 2025.⁵⁷ On 3 June 2026, the Victorian Government published its response to the review. It accepted 46 recommendations in full, part or principle and has committed to:

- expanding Consumer Affairs Victoria’s (CAV) regulatory functions and enforcement powers ...
- streamlining and improving OC governance and processes
- improving education and information sharing across the sector.⁵⁸

Several Inquiry stakeholders engaged with the review.⁵⁹ Many of their suggested reforms to improve apartment governance are explored in the remainder of this chapter, as are the recommendations of the Expert Panel.

2.2 Improving governance to enable energy upgrades

The Committee heard that strengthening the governance practices of OC committees will increase their capacity and confidence to pursue sustainability upgrades in apartment buildings, like residential solar or apartment electrification. For example, Let Me Be Frank argued that ‘[s]ignificant progress on renewable and affordable energy for apartments cannot occur without first addressing the foundational

⁵³ Ibid.

⁵⁴ Department of Government Services, *Consultation paper: Expert Panel review of the Owners Corporations Act 2006*, 2025, p. 16.

⁵⁵ Ibid.

⁵⁶ Department of Government Services, *Review of the Owners Corporations Act 2006*; Hon Jacinta Allan MP, *Expert panel to review owners corporation laws*, media release, 13 June 2025.

⁵⁷ Department of Government Services, *Review of the Owners Corporations Act 2006*.

⁵⁸ Victorian Government, *Review of the Owners Corporations Act 2006*, 2026, <<https://engage.vic.gov.au/project/OCActReview/update/862>> accessed 10 June 2026.

⁵⁹ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 2; Guy Pritchard, Director, Programs, Solar Victoria, Department of Energy, Environment and Climate Action, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 4; Kate Nicolazzo, Director, Let Me Be Frank, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 21; City of Melbourne, *Submission 84*, p. 18.

governance, educational, and cultural challenges that plague the strata sector in Victoria'.⁶⁰ It suggested that this is a 'prerequisite' for any further programs or legislative reform to scale up the adoption of solar in apartment buildings:

Without these foundations in place, even the best-designed energy programs won't be able to reach strata communities at scale.⁶¹

Inquiry stakeholders argued that apartment governance can be improved through:

- the appointment of a 'strata commissioner' to lead and oversee the apartment sector
- the establishment of an online 'strata hub' for digital records, resource sharing, and to enable communication across the sector
- mandating foundational governance training for OC committee members.

These suggestions are explored below.

2.2.1 A commissioner to drive best-practice governance

Many stakeholders advocated for the appointment of a Victorian strata commissioner to improve governance in the apartment sector and lead sector participation in the state's energy transition.⁶²

Local governments argued that there is currently a lack of 'foundational supports' for OC committees and a commissioner is needed to drive best practice application of the OC Act.⁶³ The City of Melbourne said a commissioner would help 'overcome many of the information and knowledge barriers preventing people living in apartments from identifying and realising sustainability upgrade opportunities'.⁶⁴

Several stakeholders suggested that a commissioner could increase the accountability of the strata services sector (such as OC managers) and provide the leadership needed to accelerate sustainability upgrades in apartment buildings.⁶⁵ Kate Nicolazzo, Director of Let Me Be Frank, said that appointing a commissioner would empower apartment residents and OC committees to fact check the advice of OC managers about the sustainability upgrades possible in their building.⁶⁶

⁶⁰ Let Me Be Frank, *Submission 85*, p. 2.

⁶¹ Ibid.

⁶² Merri-bek City Council, *Submission 76*, p. 2; Dr Janette Corcoran, *Transcript of evidence*, p. 37; Environment Victoria, *Submission 42*, p. 8; Yarra City Council, *Submission 50*, p. 2; Liam Henderson, Manager, Zero Carbon Community, City of Melbourne, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 33.

⁶³ City of Melbourne, *Submission 84*, pp. 15, 18–19; Yarra City Council, *Submission 50*, p. 2.

⁶⁴ City of Melbourne, *Submission 84*, p. 19.

⁶⁵ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 3; Yarra City Council, *Submission 50*, p. 2; Kate Nicolazzo, *Transcript of evidence*, p. 21; Let Me Be Frank, *Submission 85*, p. 2.

⁶⁶ Kate Nicolazzo, *Transcript of evidence*, p. 21.

Liam Henderson, Manager of Zero Carbon Community at the City of Melbourne, argued that a commissioner is needed to advocate to state and federal governments on behalf of the apartment sector to ensure that policies and programs are ‘fit-for-purpose’ for apartments.⁶⁷

Stakeholders cautioned that the impact of a commissioner would depend on its powers and functions.⁶⁸ Alison Cleary, Director of Policy and Advocacy at industry advocacy body the Australian Sustainable Built Environment Council, advised that a new commissioner must not increase the regulatory burden on OC committees.⁶⁹ Tim Graham, Fellow at the Australian College of Strata Lawyers, a professional association for legal practitioners, said that further research is required to identify appropriate powers and functions for a strata commissioner.⁷⁰

Other Australian jurisdictions have already demonstrated the positive impact a commissioner can have on the governance practices, accountability and culture of the apartment sector. Queensland has had a Commissioner for Body Corporate and Community Management since the 1990s. It is focused on providing owners, OC committees and strata services with the information and tools to comply with legislation, and to avoid and resolve disputes.⁷¹ Likewise, New South Wales (NSW) established a Strata and Property Services Commissioner in 2023. The Commissioner aims to drive best-practice governance and services in the apartment sector; increase collaboration between government, industry and apartment residents; and lead industry reform.⁷² Dr Janette Corcoran, Board Director at OCN, said that the strata commissioners in these states play ‘an overarching facilitating and coordinating role’ which would also be valuable in Victoria.⁷³ VGAs and CASBE observed that appointment of a commissioner in NSW has fostered ‘more supportive conditions’ for sustainability upgrades in apartment buildings by strengthening regulatory oversight, improving industry standards and creating a proactive compliance culture.⁷⁴

Stakeholders argued that these jurisdictions should provide a model for Victorian reform.⁷⁵ The City of Melbourne said adopting the NSW model would ‘address many of the foundational challenges faced by apartment residents and [OCs] which affect

⁶⁷ Liam Henderson, *Transcript of evidence*, p. 33.

⁶⁸ Tim Graham, Fellow, Australian College of Strata Lawyers, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 39; Alison Cleary, Director, Policy and Advocacy, Australian Sustainable Built Environment Council, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 13.

⁶⁹ Alison Cleary, *Transcript of evidence*, p. 13.

⁷⁰ Tim Graham, *Transcript of evidence*, p. 39.

⁷¹ Queensland Government, *BCCM fact sheet: role of the office*, 2026, p. 1; Queensland Government, *BCCM services and forms*, 2025, <https://www.qld.gov.au/law/housing-and-neighbours/body-corporate/legislation-and-bccm/services/bccm#content_container_2036_50473> accessed 5 April 2026.

⁷² NSW Government, *NSW Strata and Property Services Commissioner*, <<https://www.nsw.gov.au/departments-and-agencies/fair-trading/who-we-are/strata-and-property-services-commissioner>> accessed 5 April 2026; NSW Minister for Better Regulation and Fair Trading and NSW Minister for Customer Service and Digital Government, *A more modern, transparent community living system*, media release, 9 October 2023.

⁷³ Dr Janette Corcoran, *Transcript of evidence*, p. 37.

⁷⁴ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 3.

⁷⁵ Merri-bek City Council, *Submission 76*, pp. 6–7; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 3.

the uptake [of] renewable and affordable energy, and the proper functioning of [OCs] generally'.⁷⁶ Stakeholders described appropriate responsibilities for a commissioner, including:

- supporting OC governance
- enforcing compliance with the OC Act
- managing disputes
- ensuring consumer protection and professionalism in strata management, including promoting transparency in insurance, management fees and financial services
- advocating on behalf of apartment residents to ensure they are accounted for/ factored into all government policies and programs.⁷⁷

There was also support for the establishment of an advisory committee (comprising owners, renters, industry bodies and service providers) to guide a new commissioner.⁷⁸

FINDING 10: The introduction of strata commissioners in other jurisdictions has improved governance practices in the strata sector, increased accountability of strata services and created a proactive culture around sustainability upgrades in apartment buildings.

The Expert Panel review of the OC Act also recognised the success of strata commissioners in other Australian jurisdictions and identified similar strong industry support for a 'dedicated regulatory body' in the Victorian apartment sector. It reported that '[w]ithout a strong central authority, lot owners feel unsupported'.⁷⁹ However, it fell short of recommending an independent strata commissioner, instead calling for the establishment of a 'dedicated function for OC regulatory oversight within CAV'. It envisioned that this be focused on supervising and enforcing compliance in the sector, as well as mediating disputes.⁸⁰ The Victorian Government supported this recommendation in principle.⁸¹

While the Committee welcomes the Victorian Government's commitment to strengthening regulation and accountability in the apartment sector, it would like to see reform go further with the appointment of an independent strata commissioner to provide holistic leadership in the sector. It believes that more ambitious reform is required to support collaboration between the sector and government to improve foundational governance and navigate the equitable participation of apartment residents in Victoria's energy transition.

⁷⁶ City of Melbourne, *Submission 84*, p. 15.

⁷⁷ Merri-bek City Council, *Submission 76*, p. 7; City of Melbourne, *Submission 84*, p. 18; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 3.

⁷⁸ Merri-bek City Council, *Submission 76*, p. 7; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 3; Environment Victoria, *Submission 42*, p. 8.

⁷⁹ Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006*, p. 29.

⁸⁰ *Ibid.*, p. 30.

⁸¹ Victorian Government, *Response to Statutory Review of the Owners Corporation Act 2006*, June 2026, p. 6.

RECOMMENDATION 1: That the Victorian Government appoint a strata commissioner based on the New South Wales and Queensland models and guided by an advisory committee of industry stakeholders.

2.2.2 An information and communication hub for the apartment sector

The Committee heard that the development of an online ‘strata hub’ could improve record keeping, provide education on strata living and offer a platform for resource sharing and communication in the apartment sector.⁸²

Several submitters felt that the information currently available to OC committees, apartment residents and prospective buyers is not clear or comprehensive about what it means to live in or own a strata property.⁸³ Environment Victoria also suggested that there is currently a ‘dearth of data on residential strata properties in Victoria’ and that this is preventing effective policy development to support the sector.⁸⁴ The Expert Panel review of the OC Act also found that ‘[t]he lack of transparency of OC-related information is a significant barrier to effective governance and risk management’ in the apartment sector.⁸⁵

Stakeholders recommended the development of a strata hub, providing the following functions, to overcome these issues:

- a digital registry of building and OC records (names, contacts, strata plans, building drawings, asset information, policies)
- a central point of communication between government agencies and the sector and peer-to-peer engagement for strata communities (including owners, renters, OC committees and OC managers)
- a platform for sharing resources (such as guides, case studies and templates) on governance and sustainability upgrades in apartments.⁸⁶

A strata hub has already been introduced in NSW to perform many of these functions.⁸⁷ The City of Melbourne suggested that establishing a similar resource in Victoria would support the ‘proper functioning’ of OCs.⁸⁸ Kate Nicolazzo from Let Me Be Frank argued that a hub would ensure OC committees and others in the sector

⁸² Merri-bek City Council, *Submission 76*, p. 8; Dr Janette Corcoran, *Transcript of evidence*, p. 37; Yarra City Council, *Submission 50*, p. 2.

⁸³ Environment Victoria, *Submission 42*, p. 7; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 4.

⁸⁴ Environment Victoria, *Submission 42*, p. 7.

⁸⁵ Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006*, p. 29.

⁸⁶ Kate Nicolazzo, *Transcript of evidence*, p. 22; Yarra City Council, *Submission 50*, p. 2; City of Melbourne, *Submission 84*, p. 19; Let Me Be Frank, *Submission 85*, p. 2; Dr Janette Corcoran, *Transcript of evidence*, p. 37.

⁸⁷ NSW Government, *Strata hub*, 2026, <<https://www.nsw.gov.au/housing-and-construction/strata/strata-hub>> accessed 8 April 2026.

⁸⁸ City of Melbourne, *Submission 84*, p. 15.

have ongoing access to key records and would provide prospective apartment buyers with information about a building before becoming owners.⁸⁹ VGAs and CASBE argued that a hub would ‘address the lack of foundational support and knowledge gaps that the majority of people living in apartments currently experience’.⁹⁰ It said it could help educate new owners about how apartment buildings are governed, their legal obligations and how they can participate in building governance.⁹¹ Dr Kat Lucas-Healey from Environment Victoria noted that a hub could also help orient newly elected OC committee members by providing an entry point for information on apartment governance.⁹²

Stakeholders also commented on the potential for a hub to support sustainability upgrades in apartment buildings.⁹³ VGAs and CASBE said a hub could ‘simplify decision making’ by providing OC committees with independent and timely ‘guidance on energy-upgrade options ... practical tools, and a straightforward pathway to implementation’.⁹⁴

OCN emphasised the need for a ‘stable advisory ecosystem’ to overcome the challenges of high OC committee member turnover, ‘decision paralysis’ and misinformation. It advocated for the apartment sector to have access to guidance materials, procurement templates and model contracts for sustainability upgrades and risk assessment tools tailored to apartment buildings.⁹⁵ Similar resources were also called for by stakeholders who did not specifically advocate for a hub.⁹⁶ The need for specific sustainability training and resources is discussed further in Chapter 4.

The Committee heard that a hub could also enable direct communication between government agencies and OC committees or apartment residents.⁹⁷ Submitters reported strong interest from OC committees in sharing learnings and resources to avoid starting sustainability upgrades ‘from scratch’.⁹⁸

The Expert Panel review of the OC Act also recommended the establishment of a ‘central hub for OC-related information in Victoria’ but envisioned a narrow remit, focused on basic building governance and financial information (such as information on the OC manager and the building maintenance plan).⁹⁹ The Victorian Government supported this recommendation in principle but noted that ‘[f]urther consultation with the OC sector will be required to determine the information to be captured by the hub’.¹⁰⁰

⁸⁹ Kate Nicolazzo, *Transcript of evidence*, p. 22.

⁹⁰ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 4.

⁹¹ *Ibid.*, p. 3.

⁹² Dr Kat Lucas-Healey, *Transcript of evidence*, p. 4.

⁹³ Merri-bek City Council, *Submission 76*, p. 8; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 3.

⁹⁴ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 3.

⁹⁵ Owners Corporation Network of Australia Limited, *Submission 61*, p. 11.

⁹⁶ HIP V. HYPE and Get Off Gas, *Submission 46*, p. 6; Energy Consumers Australia, *Submission 87*, p. 3.

⁹⁷ City of Melbourne, *Submission 84*, p. 19; Kate Nicolazzo, *Transcript of evidence*, p. 22.

⁹⁸ Merri-bek City Council, *Submission 76*, p. 8; Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 4.

⁹⁹ Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006*, p. 28.

¹⁰⁰ Victorian Government, *Response to Statutory Review of the Owners Corporation Act 2006*, p. 6.

FINDING 11: An online information and communication hub for the apartment sector could improve governance and empower owners corporations and apartment residents with the knowledge and resources to participate in Victoria's energy transition.

The Committee notes that there are also clear benefits for government and the renewable energy sector in increasing publicly available information about Victoria's apartment buildings and enabling direct communication with OC committees and residents. A strong connection with the apartment sector will be especially important going forward, to communicate any legislative reform arising from the recent review of the OC Act and to help implement the recommendations made in this report.

RECOMMENDATION 2: That the Victorian Government develop an online strata hub encompassing:

- a registry of building and owners corporation records
- guidance materials and practical tools to improve apartment governance and pursue sustainability upgrades
- a central platform for communication and resource sharing within the sector.

2.2.3 Setting education standards for committees and managers

Stakeholders advocated for establishing standard training for OC committee members and OC managers to improve governance practices in apartment buildings and better enable sustainability upgrades.¹⁰¹

While there is currently no standard or mandated training for OC committee members or OC managers, organisations such as OCN and SCA Vic do offer voluntary education opportunities. OCN hosts regular webinars and offers resources to help OC committee members understand their legal obligations, governance roles, and how to communicate effectively.¹⁰²

Similarly, SCA Vic requires its registered OC managers to complete annual professional development to 'raise professional standards and build public trust in the strata management profession'.¹⁰³ While not all OC managers are registered with SCA Vic, it estimates that over 500,000 apartments, more than half of all the apartments professionally managed in Victoria, are overseen by its members.¹⁰⁴

¹⁰¹ Merri-bek City Council, *Submission 76*, pp. 2, 8; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 4; Owners Corporation Network of Australia Limited, *Submission 61*, p. 7; Energy Consumers Australia, *Submission 87*, p. 3; Let Me Be Frank, *Submission 85*, p. 2.

¹⁰² Owners Corporation Network of Australia Limited, *OCN in Vic*, <<https://ocn.org.au/ocn-in-vic>> accessed 7 April 2026; Owners Corporation Network of Australia Limited, *Events*, <<https://ocn.org.au/events>> accessed 7 April 2026.

¹⁰³ Strata Community Association, *SCA Continuing professional development policy*, 2025, p. 10.

¹⁰⁴ Ibid.; Strata Community Association Victoria, *Submission 78*, p. 3.

Moreover, the Victorian Government has legislated (under the *Consumer and Planning Legislation Amendment (Housing Statement Reform) Act 2025* (Vic)) a phased introduction of mandatory education requirements for OC managers, including:

- from 30 June 2027, all individuals seeking registration as OC managers must complete mandatory initial training
- from 1 April 2028, all registered OC managers will be required to undertake annual continuing professional development to maintain their registration.¹⁰⁵

It has also announced in principle support for voluntary, ‘fit-for-purpose, accessible education modules for OC committee members’ as part of its response to the Expert Panel review of the OC Act. It acknowledged that education ‘would support effective OC governance by empowering committee members with the knowledge required to effectively carry out their role’.¹⁰⁶

Dr Janette Corcoran from OCN asserted that the current lack of training standards for OC committee members is a ‘recognised gap’ in the Victorian apartment sector, especially as OC committees are required to take on more complex responsibilities as part of the state’s energy transition:

volunteer [OC] committees are increasingly required to make legal, financial and technical decisions of an increasingly complex level, all without access to tailored training or tools ... OCN cautions against assuming that obligations alone will deliver change.¹⁰⁷

She supported compulsory training for OC committee members either before or after they are elected.¹⁰⁸ Merri-bek City Council didn’t call for compulsory training for OC committee members, but did recommend ‘training standards’.¹⁰⁹ It posited that ‘[t]ailored, free or low cost, and easily accessible training’ for OC committee members would facilitate better governance practices, financial management and dispute resolution in apartment buildings.¹¹⁰ It also recommended ‘training requirements and standards’ for OC managers to enhance professionalism and accountability in the sector.¹¹¹

Let Me Be Frank recommended training standards for both OC committee members and OC managers with a ‘focus on sustainability, governance, and financial planning’.¹¹² VGAs and CASBE likewise supported education for OC committee members on governance fundamentals, such as ‘roles, rights and responsibilities’.¹¹³

¹⁰⁵ Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006*, pp. 83–84.

¹⁰⁶ Victorian Government, *Response to Statutory Review of the Owners Corporation Act 2006*, p. 8.

¹⁰⁷ Dr Janette Corcoran, *Transcript of evidence*, p. 36.

¹⁰⁸ *Ibid.*, p. 37.

¹⁰⁹ Merri-bek City Council, *Submission 76*, p. 8.

¹¹⁰ *Ibid.*, pp. 2, 8.

¹¹¹ *Ibid.*, p. 8.

¹¹² Let Me Be Frank, *Submission 85*, p. 2.

¹¹³ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 4.

Other submitters suggested training opportunities for OC committee members and OC managers specifically on navigating energy upgrades, particularly EV charging and accessing rebates under the Solar for Apartments Program.¹¹⁴ There was also some support for more general public education on living as part of a strata community.¹¹⁵

The Committee notes that NSW established mandatory training for OC committee members this year.¹¹⁶ The free training aims to ‘ensure committees have the skills and confidence to manage their strata scheme effectively’.¹¹⁷ All OC committee members must complete an hour-long online learning module within three months of being appointed and a second hour-long in-person training session before the next AGM.¹¹⁸ OCN is supporting the rollout of this mandatory training.¹¹⁹

FINDING 12: Improving the governance practices and financial management of owners corporation committees by mandating introductory training for new members could help expedite sustainability upgrades in apartment buildings.

The Committee would like to see Victoria adopt mandatory training for newly elected OC committee members. Training focused on best-practice governance will be even more critical should the legislative reforms recommended in this report go ahead. OC committee members would benefit from support on how to consider sustainability as part of ongoing building management and how to use new sustainability resolutions to pursue energy upgrades.

The Committee recognises that OC managers will also require training to understand and apply any legislative reform from the OC Act review or this report. It appreciates that sector associations, such as SCA Vic, already have a strong focus on ongoing professional development to enhance industry standards. The phased introduction of mandatory continuing professional development requirements for OC managers from 2027 will formalise and build on this industry foundation.

RECOMMENDATION 3: That the Victorian Government implement mandatory online training for owners corporation committee members focused on best practice governance, financial management and sustainability. This training should be brief, straightforward and available to all apartment residents on a voluntary basis.

¹¹⁴ Energy Consumers Australia, *Submission 87*, p. 3; Yarra Energy Foundation, *Submission 48*, p. 3; Heidi Lee Douglas, Chief Executive Officer, Solar Citizens, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 18; Sean McNamara, *Submission 64*, p. 2; Environment Victoria, *Submission 42*, p. 8.

¹¹⁵ Let Me Be Frank, *Submission 85*, p. 2; Merri-bek City Council, *Submission 76*, p. 8.

¹¹⁶ NSW Government, *Guide to strata law changes for strata committees and owners*, 2026, <<https://www.nsw.gov.au/housing-and-construction/strata/guide-to-strata-law-changes-for-strata-committees-and-owners#toc-changes-that-started-1-april-2026>> accessed 5 April 2026.

¹¹⁷ NSW Department of Fair Trading, *Property matters newsletter*, March 2026, <<https://www.nsw.gov.au/departments-and-agencies/fair-trading/stay-informed/nsw-fair-trading-newsletters>> accessed 5 April 2026.

¹¹⁸ Ibid.

¹¹⁹ Owners Corporation Network of Australia Limited, *Submission 61*, p. 8.

The Committee explores how more specific education, resources and advice can assist OCs navigating energy upgrades in apartment buildings in Chapter 4.

2.3 A legislative imperative for sustainability

In addition to improving the foundational governance of apartment buildings, stakeholders advocated for reform to establish a statutory imperative for sustainability upgrades and to reduce approval thresholds for upgrades.¹²⁰

There is currently no legislative requirement for OCs to consider or prioritise sustainability as part of ongoing building management. The OC Act does not seek to encourage sustainability upgrades, rather, it is limited to ensuring that the installation of ‘sustainability items’ is not objected to on aesthetic grounds.¹²¹ Sustainability items are defined narrowly as ‘anything that eliminates or reduces a reliance on non-sustainable energy sources’, such as residential solar or heat pump hot water.¹²² The definition does not explicitly encompass apartment electrification.¹²³

It was suggested that the lack of legislative emphasis on sustainability means that many OCs do not consider the sustainability of their building, despite significant potential to reduce energy consumption and access more affordable electricity. It also could mean that the energy consumption of many buildings is poorly understood and that many OCs may lack the data to pursue upgrades.¹²⁴

Moreover, evidence also showed that even where OCs are actively prioritising the sustainability of their buildings (despite the lack of a legislative requirement to do so), energy upgrades are often prevented by the high decision-making threshold for alterations to common property.¹²⁵

Sustainability upgrades in apartment buildings typically involve alterations to common property; for example, installing solar panels on a common rooftop or replacing shared gas hot water with a smart electrical system. Under the OC Act, significant changes to common areas can only proceed if they are part of an approved maintenance plan or are approved by a ‘special resolution’ at a general meeting.¹²⁶ As previously acknowledged, a special resolution can only be made at a quorate general meeting of an OC (at least 50% of owners present) and requires 75% of all owners in the building to vote in favour of the resolution.¹²⁷

¹²⁰ Allume Energy, *Submission 31*, p. 3; Smart Energy Council, *Submission 32*, p. 4; Rewiring Australia, *Submission 56*, p. 2; Solar Citizens, *Submission 72*, pp. 10–11; Yarra Energy Foundation, *Submission 48*, p. 3; Pernille Cavanough, President, Strata Community Association Victoria, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, pp. 42–43.

¹²¹ *Owners Corporation Act 2006* (Vic), s 138B; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 2.

¹²² *Owners Corporation Act 2006* (Vic), s 138B.

¹²³ City of Melbourne, *Submission 84*, p. 9.

¹²⁴ *Ibid.*, p. 11.

¹²⁵ Smart Energy Council, *Submission 32*, p. 4; Friends of the Earth Melbourne, *Submission 67*, p. 2.

¹²⁶ Strata Community Association Victoria, *A guide to owning, managing and living in an owners corporation*, p. 13.

¹²⁷ *Owners Corporation Act 2006* (Vic), ss 77, 96.

Solar Choice is a company which works with OCs to assess the feasibility of energy upgrades, identify appropriate products and secure owners' approval for energy upgrades. It reported that about 6% of its energy upgrade projects nationally are successful, compared with just 1.4% in Victoria. Jeff Sykes, Chief Executive Officer of Solar Choice, attributed this disparity to the high approval threshold for altering common property in Victoria, stating that 'a lot of the votes landed between 50% and 75%'.¹²⁸ Solar retailer, Allume Energy, similarly observed that the high approval threshold for a special resolution is a 'significant hurdle' to energy upgrades.¹²⁹

The evidence of solar retailers was reinforced by other stakeholders who characterised approval thresholds as a key barrier to scaling up solar for apartments in Victoria.¹³⁰ Solar Victoria reported that inadequate owner support is a common reason OCs don't apply for the Solar for Apartments Program.¹³¹ Environment Victoria said that a survey of apartment residents showed that even small, inexpensive sustainability upgrades often fall short of the high approval threshold needed to proceed:

Some respondents had requested small, reasonable measures with no cost impact to the OC—for example, a glazing upgrade for a child's bedroom paid for by the apartment owner—but were still voted down.¹³²

Yarra City Council made a similar observation and asserted that the 'thresholds relating to sustainability initiatives are too high'.¹³³ Apartment owners at 43 Haines Street said that the 75% approval requirement empowers a minority of owners to block majority-supported proposals.¹³⁴

Stakeholders raised the *Strata Schemes Management Act 2015* (NSW) (the Strata Management Act) as a potential model for reform.¹³⁵ Rewiring Australia, an advocacy group representing energy consumers, said that this legislative model has 'empowered strata committees [in NSW] to deliver energy upgrades' and advocated for similar reform in Victoria to overcome OC 'inertia':

Collective decision-making in OCs can be hampered by well-known inertia and apathy ... Strata owners or residents who want to implement sustainability upgrades must convince their neighbours of the benefits and value of the upgrade, whilst navigating an obscure legal framework ... To overcome these challenges and empower strata communities to deliver crucial energy upgrades, we encourage the government to implement ... Owners Corporation (OC) legislation reforms.¹³⁶

¹²⁸ Jeff Sykes, Chief Executive Officer, Solar Choice, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 18.

¹²⁹ Allume Energy, *Submission 31*, p. 3.

¹³⁰ Smart Energy Council, *Submission 32*, p. 4; Friends of the Earth Melbourne, *Submission 67*, p. 2; Jeremy Sung, Head of Policy, Energy Efficiency Council, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 2.

¹³¹ Guy Pritchard, *Transcript of evidence*, p. 6.

¹³² Environment Victoria, *Submission 42*, pp. 2, 5; Jeremy Sung, *Transcript of evidence*, p. 2.

¹³³ Yarra City Council, *Submission 50*, p. 2.

¹³⁴ Owners at 43 Haines Street, *Submission 44*, p. 7.

¹³⁵ Rewiring Australia, *Submission 56*, p. 3; Jeremy Sung, *Transcript of evidence*, p. 2; Smart Energy Council, *Submission 32*, p. 4; Merri-bek City Council, *Submission 76*, p. 7.

¹³⁶ Rewiring Australia, *Submission 56*, p. 3.

Likewise, VGAs and CASBE characterised the Strata Management Act as ‘significantly more enabling’ of sustainability upgrades. It argued that the NSW legislation ‘actively facilitates building-level sustainability upgrades rather than simply preventing obstruction’ as the OC Act does.¹³⁷ Jeremy Sung, Head of Policy at industry association the Energy Efficiency Council, said that adopting the NSW provisions would enable sustainability upgrades to ‘proceed as normal operating decisions’.¹³⁸ Peak body the Smart Energy Council agreed that the NSW model is ‘practical’ and ‘proven’.¹³⁹ Solar Citizens, a community advocacy group, added that the Strata Management Act positions sustainability and energy upgrades as ‘essential building improvements, not discretionary enhancements’.¹⁴⁰

Three key elements of the Strata Management Act could be adopted in Victoria:

- establishing a clearer and broader definition of sustainability for strata buildings
- adding sustainability as an annual consideration in maintenance planning and budgeting
- reducing the approval threshold for sustainability upgrades.

Support for these reforms is outlined in the following sections.

2.3.1 A clearer and broader definition of sustainability

The Committee heard that the definition of sustainability in the OC Act should be reviewed and expanded to facilitate a broader range of building improvements.¹⁴¹ Pernille Cavanough, President of SCA Vic, explained that ‘[OCs] are creatures of statute’ and can only pursue sustainability if they are explicitly authorised to:

They [OCs] can only act where authority is clearly provided under the *Owners Corporations Act 2006*. Where legislation does not clearly support infrastructure installation, cost allocation, access to private lots or ongoing maintenance responsibilities, owners corporations may be unable to lawfully proceed even where there is strong resident support. This legislative constraint is a key reason why electrification initiatives in apartment buildings stall. Without targeted reform, the gap between detached housing and multiunit dwellings will continue to widen.¹⁴²

SCA Vic recommended establishing a ‘clear statutory authority for implementation’.¹⁴³ Property developer and consultancy, HIP V. HYPE and home electrification business, Get Off Gas, called for legislative reform to establish a ‘clearer authority’ for OC

¹³⁷ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 2.

¹³⁸ Jeremy Sung, *Transcript of evidence*, p. 2.

¹³⁹ Smart Energy Council, *Submission 32*, p. 4.

¹⁴⁰ Solar Citizens, *Submission 72*, p. 10.

¹⁴¹ Victorian Council of Social Service, *Submission 86*, p. 9; Yarra City Council, *Submission 50*, pp. 1–2; Victorian Council of Social Service, *Submission 86*, pp. 3, 9, 10; City of Melbourne, *Submission 84*, p. 23; Environment Victoria, *Submission 42*, p. 8; Liam Henderson, *Transcript of evidence*, p. 33.

¹⁴² Pernille Cavanough, *Transcript of evidence*, p. 40.

¹⁴³ Strata Community Association Victoria, *Submission 78*, p. 10.

committees to pursue sustainability and to position energy upgrades as ‘core asset responsibilities’.¹⁴⁴

Stakeholders called for ‘sustainability items’ to be more clearly defined under the OC Act and suggested that a broad definition should be developed in consultation with industry.¹⁴⁵ The City of Merri-bek and Environment Victoria argued that a definition should encompass both sustainability upgrades (such as insulation, double glazing and water efficiency measures) and technologies that support electrification (such as electric hot water, electric vehicle chargers and reverse-cycle heating and cooling).¹⁴⁶ VGAs and CASBE cautioned that any definition must be flexible enough to capture new sustainability approaches and products as innovation occurs.¹⁴⁷

VCOSS highlighted the more fulsome definition of sustainability contained in NSW legislation.¹⁴⁸ The Strata Management Act makes explicit provision for OCs seeking to finance and install ‘sustainability infrastructure’.¹⁴⁹ This incorporates the ‘installation, removal, modification or replacement’ of anything for the purposes of:

- reducing or improving the efficiency of energy or water consumption
- reducing or preventing pollution or waste
- reducing greenhouse gas emissions
- facilitating the use of sustainable transport.¹⁵⁰

FINDING 13: The current definition of ‘sustainability item’ in the *Owners Corporation Act 2006* (Vic) is too narrow to encompass all types of sustainability initiatives.

The Committee agrees that the apartment sector would benefit from a clearer legislative mandate to pursue sustainability (including apartment electrification). Legislative reform would ensure that OC committees prioritise sustainability and are empowered to act, and it may help persuade hesitant owners of the value of upgrades. An important first step towards this is a statutory definition of sustainability that encompasses a broad range of upgrades and technologies, similar to NSW legislation, as recommended in the next section.

¹⁴⁴ HIP V. HYPE and Get Off Gas, *Submission 46*, p. 6.

¹⁴⁵ Merri-bek City Council, *Submission 76*, p. 2; City of Melbourne, *Submission 84*, p. 23; Environment Victoria, *Submission 42*, p. 5; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 2; Rewiring Australia, *Submission 56*, p. 2.

¹⁴⁶ Merri-bek City Council, *Submission 76*, p. 7; Environment Victoria, *Submission 42*, pp. 5, 8.

¹⁴⁷ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 2.

¹⁴⁸ Victorian Council of Social Service, *Submission 86*, p. 10.

¹⁴⁹ *Strata Schemes Management Act 2015* (NSW), s 132B.

¹⁵⁰ *Ibid.*, s 132B(2).

2.3.2 Annual consideration and funding of sustainability measures

In addition to a clearer and broader definition for sustainability, stakeholders argued that the OC Act should create an imperative for OCs to pursue sustainability by requiring it to be considered annually and factored into maintenance planning and budgeting.¹⁵¹

Under the OC Act, the OCs of all tier 1 and 2 buildings (that is, buildings with 51 or more lots) must prepare and approve a maintenance plan. It is currently encouraged, but not compulsory, for all other tiers.¹⁵² However, the Victorian Government has indicated support for extending this requirement to tier 3 buildings (which are buildings with 10–50 lots).¹⁵³ Maintenance plans must detail:

- any anticipated repairs or the replacement of major assets in the next ten years
- the present condition of assets
- when the repair or replacement of assets or their components is due
- the estimated costs of the repairs and replacements
- the expected life of any repaired or replaced assets or their components.¹⁵⁴

If an OC has a maintenance plan, it must also establish a maintenance fund to cover the replacement and repair costs nominated in the plan. Funds are collected through annual OC fees. An ordinary resolution is required for money to be paid out of the maintenance fund for items listed in the maintenance plan.¹⁵⁵ A new statutory duty requiring OCs to implement approved maintenance plans may be established in the future as a result of the Expert Panel review of the OC Act.¹⁵⁶

OCs are required to report on the implementation of their maintenance plan (if they have one) at each AGM.¹⁵⁷ There is currently no requirement for OC committees to plan or budget for sustainability upgrades, nor to consider sustainability annually. However, the Victorian Government has announced support for amending the OC Act to require OC committees to consider sustainability as a standing agenda item at each AGM. It said that '[t]his new requirement would encourage greater discussion about sustainability issues and lead to more strategic decision making about how to

¹⁵¹ Allume Energy, *Submission 31*, p. 3; Smart Energy Council, *Submission 32*, p. 4; Rewiring Australia, *Submission 56*, p. 2; Solar Citizens, *Submission 72*, pp. 10–11; Yarra Energy Foundation, *Submission 48*, p. 3; Pernille Cavanough, *Transcript of evidence*, p. 42.

¹⁵² *Owners Corporation Act 2006* (Vic), s 36; Consumer Affairs Victoria, *Owners corporation maintenance plan*, 2026, <<https://www.consumer.vic.gov.au/housing/owners-corporations/property-maintenance/maintenance-plan>> accessed 11 May 2026.

¹⁵³ Victorian Government, *Response to Statutory Review of the Owners Corporation Act 2006*, p. 11.

¹⁵⁴ Consumer Affairs Victoria, *Owners corporation maintenance plan*.

¹⁵⁵ *Owners Corporation Act 2006* (Vic), s 40; Consumer Affairs Victoria, *Maintenance fund—owners corporations*, 2018, <<https://www.consumer.vic.gov.au/housing/owners-corporations/finance-insurance-and-record-keeping/maintenance-fund>> accessed 11 May 2026; Dr Janette Corcoran, *Transcript of evidence*, p. 37.

¹⁵⁶ Victorian Government, *Response to Statutory Review of the Owners Corporation Act 2006*, pp. 10–11.

¹⁵⁷ Consumer Affairs Victoria, *Owners corporation maintenance plan*.

address sustainability concerns, including planning for future investment decisions' in apartment buildings.¹⁵⁸

Stakeholders contrasted the current situation in Victoria with the Strata Management Act in NSW, which already requires that sustainability is considered at AGMs and factored into 'capital works' budgeting.¹⁵⁹ Environmental sustainability is a standing agenda item and consideration must include the annual water and energy consumption of common areas and the related expenditure.¹⁶⁰ Like Victoria, a 10-year 'capital works fund plan' must be approved, which sets out the timing and anticipated costs of any asset repairs or replacements.¹⁶¹ However, in estimating how much money is required for the fund, OCs must factor in the cost of installations, replacements or repairs of common property infrastructure, fixtures or fittings 'for the purpose of the sustainable use of the [strata] scheme'; an example of this is residential solar panels.¹⁶²

HIP V. HYPE and Get Off Gas argued that the 'lack of transparency and mandated oversight' in the Victorian approach 'prevents OCs from easily identifying energy efficiency and cost-saving opportunities'.¹⁶³ They suggested that building-wide reporting of energy usage at AGMs 'will provide better understanding of where costs are high and the best opportunities for decarbonisation and reducing impact'.¹⁶⁴ They asserted that legislative reform is 'the primary lever ... for unlocking large-scale energy upgrades across apartment communities'.¹⁶⁵

The Committee heard that the NSW approach of requiring an annual conversation about environmental sustainability may also help pave the way for successful resolutions for sustainability upgrades. Rob McLeod, Senior Adviser for Policy and Research at the Energy Efficiency Council, said it removes the need for one owner to raise sustainability considerations 'over and over again' to build the support for upgrades.¹⁶⁶ Apartment owner and OC committee member Sean McNamara said that the NSW approach socialises the idea of sustainability, making it easier to start conversations about energy upgrades.¹⁶⁷

Dr Janette Corcoran from OCN noted that OCs that factor sustainability upgrades into maintenance plans accumulate the funds (via annual levies) to pay for upgrades over a planned period. She said that this avoids the need for a special levy, which, she pointed out, is disliked by owners and requires 'a lot of work' to get approved.¹⁶⁸

¹⁵⁸ Victorian Government, *Response to Statutory Review of the Owners Corporation Act 2006*, pp. 12–13.

¹⁵⁹ Allume Energy, *Submission 31*, p. 3; Solar Citizens, *Submission 72*, p. 11; HIP V. HYPE and Get Off Gas, *Submission 46*, p. 3; Smart Energy Council, *Submission 32*, p. 4.

¹⁶⁰ *Strata Management Scheme Act 2015* (NSW), Schedule 1, Part 2, s 6(f); NSW Government, *Guide to strata law changes for strata committees and owners*.

¹⁶¹ *Strata Management Scheme Act 2015* (NSW), s 80.

¹⁶² *Ibid.*, s 79(2)(e1).

¹⁶³ HIP V. HYPE and Get Off Gas, *Submission 46*, p. 3.

¹⁶⁴ *Ibid.*

¹⁶⁵ *Ibid.*, p. 6.

¹⁶⁶ Rob McLeod, Senior Adviser, Policy and Research, Energy Efficiency Council, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 4.

¹⁶⁷ Sean McNamara, *Submission 64*, p. 2.

¹⁶⁸ Dr Janette Corcoran, *Transcript of evidence*, p. 38.

VGAs and CASBE characterised the NSW strata legislation as ‘significantly more enabling’ as OCs ‘must consider sustainability at each [AGM] and when estimating levies for the year ahead’.¹⁶⁹

Some stakeholders advocated legislative reform to go beyond the NSW model and explicitly require OCs to consider the electrification of their building at AGMs, as well as develop a plan (and dedicated funds) for the purpose of electrification as part of maintenance planning.¹⁷⁰ For example, VGAs and CASBE argued that all tiers of OCs should be required to proactively plan the electrification of their building through maintenance planning and budgeting. It suggested establishing a deadline for the electrification of apartments and a requirement to report progress at each AGM.¹⁷¹

The electrification of Victorian apartments as part of the state’s energy transition is considered further in Chapter 5.

In the Committee’s view, the Strata Management Act provides a clear model for improving Victorian legislation. Annual consideration of sustainability should occur through a standing agenda item at the AGM and through maintenance planning and budgeting. This should encompass preparation for the electrification of apartments.

FINDING 14: Incorporating sustainability into their annual maintenance plan and budget will help owners corporations understand their building’s energy consumption and prioritise sustainability upgrades. It may also assist in gaining owners’ support for improvements.

RECOMMENDATION 4: That the Victorian Government seek to amend the *Owners Corporation Act 2006* (Vic) to expand and clarify the definition of ‘sustainability item’ so that it encompasses all current and potential future means to minimise environmental harm and conserve natural resources, and require owners corporations to consider sustainability (including electrification) regularly through a standing agenda item at annual general meetings and through maintenance planning and budgeting.

2.3.3 A lower approval threshold for sustainability upgrades

Many witnesses and submitters supported reducing the approval threshold for sustainability upgrades such as residential solar or apartment electrification.¹⁷²

¹⁶⁹ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 2.

¹⁷⁰ Yarra City Council, *Submission 50*, p. 2; Environment Victoria, *Submission 42*, p. 5; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 2; Michael Oke, Unit Manager, Sustainability, Yarra City Council, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 31.

¹⁷¹ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 2.

¹⁷² Merri-bek City Council, *Submission 76*, pp. 2, 7; Energy Consumers Australia, *Submission 87*, p. 3; Environment Victoria, *Submission 42*, pp. 5, 8; Victorian Council of Social Service, *Submission 86*, pp. 3, 9–10; Yarra City Council, *Submission 50*, pp. 1–2; Jeremy Sung, *Transcript of evidence*, p. 2; Smart Energy Council, *Submission 32*, p. 4; Allume Energy, *Submission 31*, p. 3; Clean Energy Council, *Submission 66*, p. 6; Solar Choice, *Submission 10*, p. 2; Collaboration on Energy and Environmental Markets, University of New South Wales, *Submission 80*, p. 5; Solar Citizens, *Submission 72*, pp. 10–11; Paul Richards, *Submission 17*, p. 3; Yarra Energy Foundation, *Submission 48*, p. 3; Rewiring Australia, *Submission 56*, p. 2; Liam Henderson, *Transcript of evidence*, p. 33.

Strong sector support for this reform was also identified by the Expert Panel reviewing the OC Act.¹⁷³ As already acknowledged, sustainability upgrades in apartment buildings typically require a special resolution and the support of at least 75% of all owners in the building to proceed.¹⁷⁴

Stakeholders advocated for emulating the much lower approval threshold for sustainability upgrades provided for by the Strata Management Act's 'sustainability infrastructure resolution'.¹⁷⁵ A sustainability infrastructure resolution requires the approval of a simple majority of owners present at a quorate meeting (at least 25% of owners present).¹⁷⁶ It can be used to approve the 'installation, removal, modification or replacement of anything on or forming part of that property' for the purposes of enhancing sustainability (using the definition discussed in Section 2.3.1 of this report).¹⁷⁷ It requires OCs to consider how the costs and benefits of the infrastructure will be shared before approving a sustainability infrastructure resolution.¹⁷⁸

The Smart Energy Council argued '[t]hese are practical, proven legislative changes that reduce the veto power of a minority of lot owners over improvements that benefit all residents and the broader community'.¹⁷⁹ Rewiring Australia argued that these reforms are 'vital' and would empower 'strata committees to move ahead with energy upgrades'.¹⁸⁰ Other stakeholders observed that the reforms would remove a 'significant' or 'major' governance barrier to sustainability upgrades.¹⁸¹

Allume Energy argued that legislative reform based on the Strata Management Act must be part of the 'solution' for scaling up solar for apartments in Victoria. It observed that the enquiry-to-sales conversion rate for its shared solar system in NSW apartments is 37% higher than in Victoria, 'largely' due to the lower approval threshold for sustainability upgrades and the inclusion of sustainability as a standing AGM agenda item there.¹⁸²

Local governments also submitted in favour of this reform.¹⁸³ They suggested that a lower threshold would create a more enabling framework for sustainability improvements and could 'fast-track approvals for apartment upgrades'.¹⁸⁴ Environment Victoria also recommended lowering the approval threshold for raising a special levy or borrowing money to pay for sustainability upgrades.¹⁸⁵

¹⁷³ Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006*, p. 55.

¹⁷⁴ *Owners Corporation Act 2006* (Vic), ss 77, 96.

¹⁷⁵ Allume Energy, *Submission 31*, p. 3; Victorian Council of Social Service, *Submission 86*, p. 10; Rewiring Australia, *Submission 56*, pp. 3–4; Smart Energy Council, *Submission 32*, p. 4; Solar Citizens, *Submission 72*, p. 10; City of Melbourne, *Submission 84*, p. 18; Merri-bek City Council, *Submission 76*, p. 7.

¹⁷⁶ *Strata Schemes Management Act 2015* (NSW), s 5.

¹⁷⁷ *Ibid.*, s 132B.

¹⁷⁸ *Ibid.*

¹⁷⁹ Smart Energy Council, *Submission 32*, p. 4.

¹⁸⁰ Rewiring Australia, *Submission 56*, pp. 3–4.

¹⁸¹ Victorian Council of Social Service, *Submission 86*, p. 10; Solar Citizens, *Submission 72*, p. 10.

¹⁸² Allume Energy, *Submission 31*, p. 3.

¹⁸³ Yarra City Council, *Submission 50*, p. 2; City of Melbourne, *Submission 84*, p. 18; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 2.

¹⁸⁴ Yarra City Council, *Submission 50*, p. 2; City of Melbourne, *Submission 84*, p. 18.

¹⁸⁵ Environment Victoria, *Submission 42*, p. 5.

FINDING 15: A lower decision-making threshold for sustainability upgrades will empower owners corporations to improve the energy efficiency of their buildings and/or install residential solar. It will prevent a minority of lot owners from preventing upgrades that have majority support.

RECOMMENDATION 5: That the Victorian Government seek to amend the *Owners Corporation Act 2006* (Vic) to reduce the approval threshold for sustainability upgrades to 50% so it aligns with the sustainability infrastructure resolution provided for by the *Strata Schemes Management Act 2015* (NSW).

Chapter 3

Safeguarding energy equity

While the governance reform proposed in the previous chapter will provide a solid foundation for scaling up access to more affordable and renewable energy in apartment buildings, some apartment residents face additional barriers to participating in Victoria's energy transition. These include rental households living in apartments, apartment residents living in a building with an embedded network (EN) and social housing tenants living in apartments. These Victorians have limited control over the energy infrastructure in their buildings and those with the control—landlords and EN operators—have little incentive to act in residents' best interests. While residents' wellbeing is at the forefront of the social housing sector, the capital-constrained nature of not-for-profit community housing organisations (CHOs) makes sustainability upgrades challenging.

This chapter explores these challenges and recommends tailored government support to safeguard energy equity.

3.1 Renewables for rental households

All Victorians should be able to live in a healthy, comfortable and energy-efficient home, whether they own or rent an apartment or live in a freestanding house. Unfortunately, rental properties tend to be of poorer quality than other tenures of housing, particularly in terms of energy and thermal efficiency.¹ Inadequate wall and ceiling insulation, single-glazed windows and poor draughtproofing can make it energy intensive to heat and cool a house or apartment effectively. Likewise, old or faulty electrical appliances can increase energy consumption.²

Many apartments have particularly poor thermal performance due to a reliance on concrete and metal structures, combined with a lack of shading and cross-ventilation. Clean energy expert Alan Pears AM noted that 'these factors may mean that some apartments reach extremely high and unsafe internal temperatures [in summer] unless they are being air conditioned'.³ Indeed, research by The University of Melbourne found that if Melbourne's power supply was cut during a heatwave, most apartment buildings would fail international health standards.⁴

1 Merri-bek City Council, *Submission 76*, p. 9; Australian Housing and Urban Research Institute, *Warm, cool and energy-affordable housing policy solutions for low-income renters*, final report, no. 338, 2020, p. 18; Anika Legal, Consumer Action Law Centre and Consumer Policy Research Centre, *Too hot, too cold, too costly: Victorian renters pay the price for energy inefficient homes*, 2024, pp. 4–6.

2 Alan Pears AM, *Submission 65*, p. 7; Australian Housing and Urban Research Institute, *Warm, cool and energy-affordable housing policy solutions for low-income renters*, p. 18.

3 Alan Pears AM, *Submission 65*, p. 20.

4 Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006: final report*, report for The Hon Nick Staikos, Minister for Consumer Affairs, December 2025, p. 54.

Modest sustainability upgrades, such as draught sealing, insulation and installing ceiling fans or electric heaters, can significantly improve the energy efficiency and comfort of a home and reduce energy costs.⁵ However, renters have limited ability to pursue these upgrades, particularly those living in apartment buildings. Barriers include restrictions on home modifications, owners corporation (OC) processes, the presence of intermediaries (such as real estate agents and OC managers), the high upfront cost of upgrades and fear of being evicted.⁶ OC processes and the complicating presence of intermediaries are explored in Chapter 2. Case Study 3.1 describes an apartment tenant's experiences seeking the installation of an air conditioner through a Yarra City Council energy upgrades program.

Sustainability upgrades in apartment buildings with high numbers of rental properties sometimes stall due to a lack of owner-investor support for this investment.⁷ As described in Chapter 2, owner-investors are not well incentivised to invest in renewable technology or home electrification. They may be reluctant due to high upfront costs, because they do not benefit from energy savings or because a return on this investment (through increased resale value or rental yield) is uncertain.⁸ This is known as the 'split incentive' between owner-investors or short-term owner-occupiers (who pay for the upgrades) and renters or future owner-occupiers (who will benefit from more affordable energy).⁹ The Victorian Council of Social Service (VCOSS), the peak body for the social and community sector, explained:

In rented apartments, the split incentive and inherent power imbalance between landlords and renters create additional barriers to accessing renewable and affordable energy. For example, to install an upgrade like rooftop solar, the landlord must make the investment as the owner of the property, but it is the tenant that benefits from reduced costs. As the landlord does not receive the benefits of the investment, they have little incentive to make it.¹⁰

This split incentive is a significant barrier to sustainability upgrades in apartment buildings, including residential solar, energy efficiency measures or home electrification.¹¹ Three potential solutions were canvassed throughout the Inquiry—the

5 Australian Housing and Urban Research Institute, *Warm, cool and energy-affordable housing policy solutions for low-income renters*, p. 18; Alan Pears AM, *Submission 65*, p. 10.

6 Dr Heather Holst, Commissioner for Residential Tenancies, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, pp. 40–41; Kate Raymond, Chief Executive Officer, Master Electricians Australia, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 60; Damien Patterson, Director, Policy, Advocacy and Engagement, Tenants Victoria, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 53; Fiona York, Executive Officer, Housing for the Aged Action Group, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 53; Housing for the Aged Action Group, *Submission 74*, p. 6.

7 Collaboration on Energy and Environmental Markets, University of New South Wales, *Submission 80*, p. 2; Solar Citizens, *Submission 72*, p. 10; Allume Energy, *Submission 31*, p. 2; Master Electricians Australia, *Submission 41*, p. 6; Australian Academy of Technological Sciences and Engineering, *Submission 47*, p. 1; ANU Centre for Energy Systems, *Submission 73*, p. 2; Victorian Council of Social Service, *Submission 86*, p. 6.

8 Owners Corporation Network of Australia Limited, *Submission 61*, p. 14.

9 Collaboration on Energy and Environmental Markets, *Submission 80*, p. 2; Solar Citizens, *Submission 72*, p. 10; Allume Energy, *Submission 31*, p. 2; Master Electricians Australia, *Submission 41*, p. 6; Australian Academy of Technological Sciences and Engineering, *Submission 47*, p. 1; ANU Centre for Energy Systems, *Submission 73*, p. 2; Victorian Council of Social Service, *Submission 86*, p. 6.

10 Victorian Council of Social Service, *Submission 86*, p. 6.

11 Green Building Council of Australia, *Submission 77*, p. 3; Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 10; Friends of the Earth Melbourne, *Submission 67*, p. 2; Paul Richards, *Submission 17*, p. 2.

implementation of new minimum energy efficiency standards for rental properties, the introduction of a mandatory disclosure scheme for the energy efficiency of apartments and reform to increase renter representation within OCs. These are explored below.

Case Study 3.1 Apartment tenant's experiences seeking energy upgrades

[In 2025, Yarra City Council] piloted two innovative, successful programs, the *Yarra Home Energy Upgrades* and *Climate Safe Rooms* programs, which helped residents with energy upgrades who experience significant disadvantage and face elevated risk from climate impacts. Of the 54 homes supported through these programs, 32 were townhouses or apartments.

One resident's experience in the program illustrates the barriers residents face and their impacts. Despite support from her landlord and real estate agent property manager, including direct requests for action ... by the landlord, the OC provided no response over the months of the program ...

Unfortunately, [the Council was] unable to provide a much-needed reverse cycle air conditioner for this resident through [the] program, despite no technical barriers to its installation. Here is her description of why it is so important:

I have been a tenant in this property for over 15 years. The summer, in particular, is brutal due to west-facing large windows and 1970's infrastructure. I manage my electricity bills very well; I average half the cost of 1 person according to electricity data as I've put in so much effort to improve my situation where I can - including over winter. My landlord has agreed to cover A/C however installation was unfeasible as body corporate [OC] chose not to fund access to the roof. The lack of a hatch means any roof works require a cherry picker, scaffolding, all the OH&S works - that's just to access roof. Currently, myself and other owners/tenants are trying to coordinate an A/C install in bulk, however I don't hold out much hope.

Living here in summer is horrendous, truly. Especially as I'm ageing, not working and illness and medications actively impact my body's internal ability to cool down. I feel like I lose up to 3 months a year - as the building is such a heat magnet. Even 1-2 30 degree-plus days stays 'in the walls' and surrounding concrete for a week. I've done as much as I can inside, fans, heat reflect curtains, portable A/C, however the A/C cannot make a dint after 1 day, sounds like a 737 and is exorbitantly expensive. During hot weather, I also have to 'live in the dark' due to heavy blackout curtains and blinds, can't use TV or nbn due to heat generation and have limited laptop use for same reason. The temperature inside during heat waves routinely measures over 44 degrees. The debilitation of this is something others with A/C, insulation etc cannot understand, making me feel far more 'alone' in my exhaustion and frustration.

Source: Yarra City Council, *Submission 50*, p. 3.

3.1.1 Energy efficiency standards for rental properties could drive apartment sustainability upgrades

Minimum energy efficiency standards for all Victorian rental properties (including apartments) were introduced under the *Residential Tenancies Act 1997* (Vic) in 2024. Enforced by Consumer Affairs Victoria, the standards set baseline requirements for the installation of ceiling insulation, heating and cooling appliances, and draughtproofing in rental properties. They aimed to reduce energy consumption, prepare rental properties for the state’s energy transition and improve the comfort of rental households.¹²

The Victorian Government is building on these baseline energy efficiency standards for rental properties by phasing in higher requirements from 1 March 2027 to further ‘reduce energy costs for renters and improve the comfort of rental homes across Victoria’.¹³ The new, higher standards span six categories of sustainability. They require the installation of energy- and water-efficient appliances, and sealing the building envelope of rental homes through, for example, draughtproofing. Rental properties ‘too difficult to upgrade’ are exempt from complying with the new standards.¹⁴ Table 3.1 describes the new standards and exemptions.

Table 3.1 Energy efficiency standards for Victorian rental properties, effective 1 March 2027

Standard	When it applies	Exemptions
An energy-efficient fixed heater in the main living area.	When an existing fixed heating system fails and cannot be repaired.	Properties are exempt if: - heating is supplied through a centralised building system or there is insufficient space for the external compressor unit (common in apartments) - installation is not permitted under heritage laws or OC rules.
A fixed energy-efficient cooling system in the main living area.	At the start of a new rental agreement, or conversion to a month-to-month agreement, or when an existing fixed cooling system fails and cannot be repaired. From 1 July 2030 all rental properties must meet the cooling standard.	Properties are exempt if: - cooling is supplied through a centralised building system (common in apartments) - installation is not permitted under heritage laws or OC rules.

12 Department of Government Services, *Minimum standards for rental properties and rooming houses*, 2024, <<https://engage.vic.gov.au/new-minimum-standards-for-rental-properties-and-rooming-houses>> accessed 2 June 2026.

13 Consumer Affairs Victoria, *New minimum energy efficiency standards*, 2026, <<https://www.consumer.vic.gov.au/resources-and-tools/legislation/public-consultations-and-reviews/new-minimum-energy-efficiency-standards>> accessed 2 June 2026.

14 Ibid.

Standard	When it applies	Exemptions
An energy-efficient electric hot water system.	When an existing hot water system fails and cannot be repaired.	Properties are exempt if: - hot water is supplied through a centralised building system (common in apartments) - installation is not permitted under heritage laws or OC rules - there is insufficient space to install a heat pump system or rooftop solar panels.
Water-efficient showerhead/s in all showers.	At the start of a new rental agreement, or conversion to a month-to-month agreement.	Properties are exempt if: the age, nature or structure of the plumbing means a 4-star rated shower head can't be installed or when installed will not operate effectively.
Ceiling insulation in all ceiling spaces where none currently exists.	At the start of a new rental agreement, or conversion to a month-to-month agreement.	Properties are exempt if: - there is insufficient ceiling space to install insulation - installation is not permitted under heritage laws or OC rules - the ceiling space is not safely accessible.
Draughtproofing on all external doors, windows and unsealed wall vents.	At the start of a new rental agreement, or conversion to a month-to-month agreement.	Properties are exempt if: - installation is not permitted under heritage laws or OC rules - the presence of gas appliances makes it unsafe to draughtproof the property.

Source: Consumer Affairs Victoria, *New minimum energy efficiency standards*, 2026, <<https://www.consumer.vic.gov.au/resources-and-tools/legislation/public-consultations-and-reviews/new-minimum-energy-efficiency-standards>> accessed 2 June 2026.

All sustainability upgrades prescribed by the new minimum standards are eligible for discounts and/or rebates under the Victorian Energy Upgrades program (described in Chapter 5).¹⁵

Responsibility for ensuring rental properties comply with the new higher minimum standards is shared between landlords and tenants.¹⁶

Landlords must ensure their rental property meets the minimum energy efficiency standards when it is being advertised for lease or before a new tenant moves in. However, if a property falls below the minimum standards at any time during a rental agreement, the onus is on the renter to request repairs to bring it back to compliance. If repairs are not carried out, the renter can apply to Rental Dispute Resolution Victoria (RDRV) for assistance in resolving the dispute. RDRV is a dispute resolution and case management service provided by the Victorian Civil and Administrative Tribunal

¹⁵ Ibid.

¹⁶ Consumer Affairs Victoria, *Renters' rights when minimum standards are not met*, 2025, <<https://www.consumer.vic.gov.au/housing/renting/repairs-alterations-safety-and-pets/minimum-standards/renters-rights-when-minimum-standards-are-not-met>> accessed 3 June 2026; Rental Dispute Resolution Victoria, *Frequently asked questions*, <<https://www.rdrv.vic.gov.au/about-rdrv/frequently-asked-questions>> accessed 3 June 2026.

(VCAT) that helps renters and rental providers resolve rental issues quickly. If RDRV cannot resolve the dispute and secure the repairs, it will support the renter to apply to VCAT for an order requiring the landlord to undertake the repairs. There are also penalties for advertising or leasing a property that does not meet the standards, or not carrying out repairs requested to bring a property up to compliance.¹⁷

Inquiry stakeholders welcomed more stringent minimum standards for the energy efficiency of rental properties.¹⁸ For example, VCOSS described the standards as ‘crucial’ and said they will significantly reduce energy costs for renters:

These changes will mean significant savings for renters, as well as reduced residential emissions. In the context of the power imbalance between landlords and renters, minimum standards are a crucial regulatory instrument to improve the standard of rental housing.¹⁹

The Australian National University (ANU) Centre for Energy Systems submitted that the new minimum energy efficiency standards are important because they will also help drive the electrification of apartments.²⁰

However, there was some concern that the exemptions for ‘difficult to upgrade properties’ would be overused, particularly in apartment buildings where the technical and governance complexities make sustainability improvements more challenging and costly (explored in chapters 2 and 4).²¹ As Lotte Wolff, Executive Manager of Advocacy and Policy at national advocacy body Energy Consumers Australia, said, if an OC committee decides that an upgrade is ‘too costly or impractical’, then rental apartments can be exempt from the standards.²² Merri-bek City Council noted that this will mean ‘apartment renters will continue to be at a huge disadvantage’ in managing their energy consumption.²³

Stakeholders were also sceptical of renters’ ability to enforce compliance with the new minimum energy efficiency standards by pursuing repairs through requests to VCAT.²⁴ Renters are often wary of interacting with landlords or property managers to request repairs for fear it will lead to an eviction or rental rate increase.²⁵ VCOSS substantiated these concerns in 2025 through a survey of community sector support workers. Respondents documented incidences of tenants receiving eviction notices shortly after

¹⁷ Ibid.

¹⁸ Victorian Council of Social Service, *Submission 86*, p. 7; Lotte Wolff, Executive Manager, Advocacy and Policy, Energy Consumers Australia, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 57; Green Building Council of Australia, *Submission 77*, p. 4; Energy Efficiency Council, *Submission 58*, p. 2; Merri-bek City Council, *Submission 76*, p. 10; Brotherhood of St. Laurence, *Submission 83*, p. 4; Infrastructure Victoria, *Submission 20*, p. 3.

¹⁹ Victorian Council of Social Service, *Submission 86*, p. 7.

²⁰ ANU Centre for Energy Systems, *Submission 73*, p. 2.

²¹ Victorian Council of Social Service, *Submission 86*, p. 7; Merri-bek City Council, *Submission 76*, p. 10; Energy Efficiency Council, *Submission 58*, p. 2; City of Melbourne, *Submission 84*, pp. 10–11; Brotherhood of St. Laurence, *Submission 83*, p. 4; Lotte Wolff, *Transcript of evidence*, p. 57.

²² Lotte Wolff, *Transcript of evidence*, p. 57.

²³ Merri-bek City Council, *Submission 76*, p. 10.

²⁴ Environment Victoria, *Submission 42*, p. 8; Housing for the Aged Action Group, *Submission 74*, p. 3.

²⁵ Victorian Council of Social Service, *Submission 86*, p. 6.

their clients had raised non-compliance with minimum standards.²⁶ VCOSS confirmed that renters are ‘terrified’ to request even basic repairs and are more concerned with maintaining the security of their lease:

As such, many renters are too scared to pursue their rights under protections like minimum standards, such as to live in a mould free home, let alone request energy upgrades to the property.²⁷

VCOSS also reported that the complexity and cost of pursuing repairs through VCAT are insurmountable for many renters and that there have been instances of landlords breaching property repair orders with little consequences.²⁸ It recommended exploring alternative compliance mechanisms, including:

- auditing rental properties for compliance with the minimum energy efficiency standards
- mandatory disclosure of compliance when a property is advertised for lease
- maintaining a register of rental property compliance
- ensuring outcomes at RDRV and VCAT are enforced to comply with the standards.²⁹

FINDING 16: Rental households are focused on maintaining their tenancy and may be reluctant to request sustainability upgrades or repairs due to fear of eviction or rental rate increases.

Other advocacy groups called for rigorous enforcement of the new standards (particularly for older rental housing) without putting the onus on renters.³⁰ This included support for phasing out exemptions to the minimum standards to ensure rental households living in apartment buildings are not disadvantaged.³¹ Environment Victoria also called for the standards to be extended to social housing.³²

In addition to mechanisms to enforce the standards, Inquiry stakeholders suggested that OC committees and landlords need guidance, resources and financial support to pursue the upgrades necessary to meet the new minimum standards.³³ The City of Melbourne recommended free NABERS ratings (discussed in Section 3.1.2) or electrification feasibility studies for apartment buildings to support OC committees

²⁶ Ibid.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Ibid., p. 7.

³⁰ Environment Victoria, *Submission 42*, p. 8; Housing for the Aged Action Group, *Submission 74*, p. 3.

³¹ Merri-bek City Council, *Submission 76*, p. 10; Victorian Council of Social Service, *Submission 86*, p. 7; Environment Victoria, *Submission 42*, p. 8.

³² Environment Victoria, *Submission 42*, p. 8.

³³ Amaya de Silva, Coordinator, Climate Action, City of Boroondara, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, pp. 34–35; City of Melbourne, *Submission 84*, pp. 10–11; Brotherhood of St. Laurence, *Submission 83*, p. 4; Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 4; Clean Energy Council, *Submission 66*, p. 5; Associate Professor Nicola Willand, et al., *Submission 27*, p. 5.

to plan sustainability upgrades as part of annual building maintenance works.³⁴ It also recommended streamlining the Victorian Energy Upgrades program to make it easier for landlords to access discounts and rebates (explored in Chapter 5).³⁵ Other stakeholders recommended rebates, tax concessions or low-cost loans to support landlords to pay for energy efficiency upgrades.³⁶ It was suggested that these supports be paired with statutory protection from rental rate increases or evictions linked to upgrades.³⁷

The Committee recognises that both OC committees and landlords need support to meet the new standards for energy efficiency in rental apartments. Many of the recommendations made throughout the report will help to provide this assistance, including the establishment of an apartment building electrification strategy as well as support for energy upgrades (see Chapter 5).

The Committee is confident that these measures will make it easier for landlords and OCs to work together to improve the energy efficiency of rental apartments to meet the higher standards over time.

3.1.2 Disclosing the energy efficiency of rental apartments will encourage action

Evidence suggests that introducing a mandatory energy efficiency disclosure scheme for apartments at the point of sale or lease could encourage landlords to invest in sustainability upgrades. Stakeholders broadly supported such a scheme, arguing it would make energy performance visible to prospective tenants and buyers, potentially increasing property appeal and value.³⁸ For example, community advocacy group Solar Citizens suggested a disclosure scheme would help address the ‘split incentive’ between landlords and renters by aligning their interest in improving rental apartment energy efficiency.³⁹ It argued that disclosure could help create ‘a tangible return on investment for landlords and ensur[e] prospective and current tenants have visibility over a home’s energy performance’.⁴⁰

Witnesses cited examples of mandatory energy efficiency disclosure schemes, which have supported sustainability upgrades in rental properties (including apartments) in other jurisdictions.⁴¹ Government advisory body Infrastructure Victoria highlighted the Australian Capital Territory’s (ACT’s) Energy Efficiency Rating Disclosure Scheme,

³⁴ City of Melbourne, *Submission 84*, p. 24.

³⁵ Ibid.

³⁶ Australian Academy of Technological Sciences and Engineering, *Submission 47*, p. 2; Associate Professor Nicola Willand, et al., *Submission 27*, p. 25; Victorian Trades Hall Council, *Submission 60*, p. 7.

³⁷ Associate Professor Nicola Willand, et al., *Submission 27*, p. 5; Victorian Trades Hall Council, *Submission 60*, p. 7.

³⁸ Solar Citizens, *Submission 72*, pp. 10–11; Allume Energy, *Submission 31*, p. 2; ANU Centre for Energy Systems, *Submission 73*, p. 2; City of Melbourne, *Submission 84*, p. 19.

³⁹ Solar Citizens, *Submission 72*, p. 3.

⁴⁰ Ibid., p. 10.

⁴¹ Dr Heather Holst, *Transcript of evidence*, p. 41; Cameron Knox, Chief Executive Officer and Co-founder, Allume Energy, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 11.

which has been in place since 1999. It noted that this scheme has ‘proven effective in the ACT, where over 60% of homes built since 2016 exceed minimum energy efficiency standards, compared to less than 25% in Victoria’.⁴²

Likewise, solar retailer Allume Energy suggested that the United Kingdom’s (UK’s) Energy Performance Certificate (EPC) scheme has been a ‘massive driver’ of investment in its shared solar product despite the feasibility of solar being ‘considerably worse’ in the UK climate. It said that the clear valuation difference between highly rated and poor performing properties in the UK means that property owners who invest in sustainability upgrades can see a ‘tangible return on investment’.⁴³ Allume Energy argued that a disclosure scheme would have a similar impact on owner-investors in Victoria.⁴⁴ Box 3.1 describes the operation of the EPC scheme in the UK.

Dr Heather Holst, the Commissioner for Residential Tenancies, also suggested that the introduction of a disclosure scheme in Victoria could encourage apartment owner-investors to pursue sustainability upgrades with a view to increasing the rental value of their property. However, she warned that rental affordability is already too poor to accommodate further rate increases:

it is impossible to crank most rents up further because people are squeezed as tightly as they possibly can be. But in a sort of more easy flow market where there are better vacancy rates and supply, yes, it would.⁴⁵

She also noted that in a highly competitive rental market (with low vacancy rates and high rents), apartment tenants may not have the discretion to choose a home based on its energy efficiency.⁴⁶ The ANU Centre for Energy Systems acknowledged that a disclosure scheme might drive up property values, but it noted that it also presents an opportunity to lower day-to-day energy costs.⁴⁷

Australian governments (including Victoria’s) have already made substantial progress towards the introduction of a nationally consistent mandatory energy efficiency disclosure scheme for homes (including apartments). In 2019, energy ministers agreed to deliver a framework for energy efficiency disclosure as part of national planning to achieve ‘zero energy and carbon-ready residential and commercial buildings’.⁴⁸ In 2024, further collaboration delivered on this measure with the publication of the *Home Energy Ratings Disclosure Framework* (version 2), discussed below.⁴⁹

⁴² Infrastructure Victoria, *Submission 20*, p. 4.

⁴³ Cameron Knox, *Transcript of evidence*, pp. 10–11; Allume Energy, *Submission 31*, p. 2.

⁴⁴ Allume Energy, *Submission 31*, p. 2.

⁴⁵ Dr Heather Holst, *Transcript of evidence*, p. 41.

⁴⁶ Ibid.; Greater Dandenong City Council, *Submission 22*, p. 3.

⁴⁷ ANU Centre for Energy Systems, *Submission 73*, p. 2.

⁴⁸ Australian Government, *Home energy ratings disclosure framework: a collaborative project of the Australian, state and territory governments (version 2)*, 2024, p. 4.

⁴⁹ Ibid., p. 1.

Box 3.1 United Kingdom's mandatory energy performance certificates

In the UK, all property owners are required to obtain an Energy Performance Certificate (EPC), which rates the energy efficiency of their freestanding house or apartment, when it is sold or leased. An EPC costs between £65–£120 depending on the size of a property (as of November 2025). Property owners who fail to arrange an EPC can be issued with a fine.

EPCs are based on data about a building's energy features; for example, the building materials used, the heating and lighting systems, and insulation. Data is collected by an accredited energy assessor and used to generate an EPC score, typically ranging from A (most efficient) to G (least efficient).

EPCs also provide property owners with recommendations on how to improve their house or apartment's EPC rating and information on what the rating could be if the recommended improvements are made. EPCs are valid for 10 years.

Since 2020, UK properties are unable to be leased unless they have an EPC of E or higher (exemptions are granted in some instances). A higher EPC rating of C or above will be required for all rental properties (including social housing) from 2030 onwards. However, property owners are not expected to spend more than £10,000 on energy efficiency upgrades to achieve this higher rating and may be able to secure an exemption to the higher standard if they are unable to achieve it within this budget.

Requiring an EPC at the point of sale has impacted property values in the UK. In 2024, buyers were willing to pay 3.4% more for a home with high energy efficiency (A- or B-rated). Homebuyers also expected to pay less for houses and apartments with poor energy efficiency. Properties rated F or G typically sell for 7.4% less than D-rated properties. A survey of buyers also found that EPCs influenced their decision to purchase a property.

Sources: Energy Saving Trust, *Energy performance certificates (EPCs) explained* <<https://energysavingtrust.org.uk/advice/guide-to-energy-performance-certificates-epcs>> accessed 13 April 2026; UK Office for National Statistics, *Energy efficiency of housing in England and Wales: 2025*, <<https://www.ons.gov.uk/peoplepopulationandcommunity/housing/articles/energyefficiencyofhousinginenglandandwales/2025>> accessed 13 April 2026; UK Government, *Improving the energy efficiency of socially rented homes in England: government response*, April 2026, <<https://www.gov.uk/government/consultations/improving-the-energy-efficiency-of-socially-rented-homes-in-england/outcome/improving-the-energy-efficiency-of-socially-rented-homes-in-england-government-response>> accessed 13 April 2026; Unbiased, *How changing EPC regulations affect landlords and tenants*, 2026, <<https://www.unbiased.co.uk/discover/mortgages-property/buy-to-let-renting/how-changing-epc-regulations-affect-landlords-and-tenants>> accessed 15 April 2026; Benjamin Trevis and Daniel Moseley, 'The growing importance of energy efficiency in home buying decisions', *Oxford Economics*, 4 October 2024, <<https://www.oxfordeconomics.com/resource/the-growing-importance-of-energy-efficiency-in-home-buying-decisions>> accessed 15 April 2026.

Home Energy Ratings Disclosure Framework

The Home Energy Ratings Disclosure Framework sets out ‘a national approach to assessing the energy performance of homes and providing energy performance certificates to consumers’.⁵⁰ It provides policy parameters for disclosure schemes, which can be adapted and implemented by state governments, and offers guidance on the development of a supportive market.⁵¹

The framework can apply to freestanding homes, individual apartments and apartment building common areas. Disclosure must be made when property owners are advertising their home for sale or lease. Apartment owners are required to provide information about the energy efficiency rating of their apartment and the common areas of the base building (if a rating exists).⁵²

The framework nominates two rating schemes for this purpose:

- the Nationwide House Energy Rating Scheme (NatHERS), for rating freestanding homes and individual apartments
- the National Australian Built Environment Rating System (NABERS), for rating the common areas of apartment buildings.

Box 3.2 explains the parameters of these two rating schemes.

National collaboration to implement the Home Energy Ratings Disclosure Framework has continued this year with a joint Australian and New South Wales (NSW) government pilot disclosure scheme. The pilot scheme is trialling the voluntary disclosure of home NatHERS ratings at the point of sale or lease in NSW. It is offering subsidised assessments to encourage owners to participate. The pilot scheme does not have a set end date, rather the NSW Government has committed to transition into a mandatory disclosure scheme when a review of the pilot indicates that the property market is ready.⁵³

Allume Energy and the City of Melbourne argued that the introduction of a mandatory energy efficiency disclosure scheme should be ‘fast tracked’ in Victoria.⁵⁴ Solar Citizens supported the introduction of a mandatory disclosure scheme for rental properties underpinned by the NatHERS rating scheme.⁵⁵ It suggested that the scheme should disclose whether a rental property has access to renewable energy through shared or individual residential solar.⁵⁶ Researchers at the ANU Centre for Energy Systems also suggested that a mandatory disclosure scheme could help drive the electrification of apartments.⁵⁷

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Ibid.

⁵³ NSW Department of Climate and Energy Action, *Home energy ratings*, 2026, <<https://www.energy.nsw.gov.au/households/action/initiatives/home-energy-ratings>> accessed 20 May 2026.

⁵⁴ Allume Energy, *Submission 31*, p. 2; City of Melbourne, *Submission 84*, p. 19.

⁵⁵ Solar Citizens, *Submission 72*, p. 10.

⁵⁶ Ibid.

⁵⁷ ANU Centre for Energy Systems, *Submission 73*, p. 2.

FINDING 17: A mandatory disclosure scheme for the energy efficiency of apartments at the point of sale or lease would incentivise owner-investors and short-term owners to support energy upgrades in apartment buildings. This will be particularly effective in a property market that favours buyers and/or tenants by delivering a tangible return on investment.

The Committee is pleased to note that the Victorian Government has already signalled its support for a mandatory disclosure scheme for energy efficiency by signing on to the Home Energy Ratings Disclosure Framework. It would like to see implementation progress with a voluntary disclosure scheme (based on the NSW pilot) to help prepare the market for a mandatory scheme and encourage apartment owner-investors to upgrade the sustainability of their property.

RECOMMENDATION 6: That the Victorian Government implement a voluntary disclosure scheme for the energy efficiency of homes, including apartments, at the point of sale or lease to prepare for a future mandatory scheme.

Box 3.2 Home Energy Ratings Disclosure Framework proposed rating schemes

NatHERS ratings for individual apartments (and freestanding homes)

The Australian Government administers NatHERS on behalf of state and territory governments. It has been used to provide ratings for new homes since 1993 and, since 2003, it has supported the minimum energy efficiency requirements for new homes. Around 90% of new homes have had a NatHERS assessment.

A NatHERS rating assesses the 'thermal envelope' of a home (including its design, orientation, construction materials and the local climate) and the appliances used in the home (including heating, cooling, hot water systems, lighting, pool pumps, cooking and any onsite energy generation and storage). Under the disclosure scheme proposed by the Home Energy Ratings Disclosure Framework, there will be three elements to a NatHERS rating for each home: a thermal performance rating, a whole-of-home rating (which encompasses climate data and assumptions about occupant behaviour) and advice about how to improve the home's energy performance. It envisages that a NatHERS rating should be valid for ten years.

(Continued)

Box 3.2 Continued**NABERS ratings for the common areas of apartment buildings**

The NSW Government manages NABERS on behalf of all Australian governments. It has been in operation for more than a decade and has been used to rate the energy performance of almost 300 apartment buildings since 2019.

A NABERS rating assesses the operational performance of buildings benchmarked against other similar buildings. It rates the energy performance of the shared services of an apartment building (such as lifts, car parks, lobby areas, gyms and pools) over a 12-month period. A NABERS rating does not include the energy consumption of individual apartments. Under the mandatory disclosure scheme proposed by the framework, a NABERS assessment will be paid for by OCs and be valid for 3 years.

Source: Australian Government, *Home energy ratings disclosure framework: a collaborative project of the Australian, state and territory governments* (version 2), 2024, pp. 1–4, 20, 23–24.

3.1.3 Apartment tenant participation in building governance could create momentum

While outside the Inquiry terms of reference, some stakeholders canvassed the potential for increasing the representation of renters within OCs to help overcome owner-investor inertia on sustainability upgrades in apartment buildings. As acknowledged in Chapter 2, renters in strata schemes currently have limited formal opportunities to participate in the governance of the buildings they call home. While they can attend annual general meetings (AGMs) and participate in sub-committees, they cannot propose actions or vote on resolutions.⁵⁸ Tim Graham, Vice President of the OC industry peak body the Strata Community Association Victoria (SCA Vic), said OCs ‘scarcely have a relationship with tenants. When one goes to the *Owners Corporations Act [2006]*, the nomenclature is ‘occupiers’.⁵⁹

This means that renters have limited avenues to propose sustainability upgrades or support investment in renewables put forward by owners. Their views are not required to be sought or considered in the management of a building, even when a large proportion of residents are renters. Dr Holst pointed out that renters who would like to access more affordable and renewable energy are limited to ‘asking nicely’:

[W]hat if I am a renter and I really would like cheaper electricity that is environmentally sustainable? What do I do? Well, probably, if I am in an apartment, I am going to have a property manager ... who I will probably talk to. They will tell me ... they will pass it on to the owner, but it is not an established part of the remit ...

⁵⁸ Dr Heather Holst, *Transcript of evidence*, p. 40; Let Me Be Frank, *Working with apartment and strata communities: a handbook for local governments*, report for City of Melbourne, 2025, p. 35.

⁵⁹ Tim Graham, Vice-President, Strata Community Association Victoria, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 42.

I am hoping they will represent it to the owner, who will then have to go to the OC and say, 'I've decided I'd like a solar hook-up.' Do you see the problem? It is an entirely 'asking nicely' type of approach ...⁶⁰

The City of Darebin noted that renters may be unwilling to request improvements to their living conditions for fear of triggering a rent increase or eviction.⁶¹

The Committee received submissions from long-term tenants with firsthand experience of how challenging it is for renters to influence OC decisions around sustainability. Case Study 3.2 provides an example.

Case Study 3.2 A renter's experience with accessing renewable energy

I am in the fortunate position of looking to buy my first home, but at age 41, I have been renting since I was 18. I have never once had the option of accessing rooftop solar or any means of renewable energy, unless I am lucky enough to have access to an electricity provider that charges a premium for renewable energy supply. This is particularly an issue when renting an apartment or townhouse—I have had the experience of renting in a large apartment building to which there was only one choice of provider, a mandatory provider, that didn't offer renewable energy (WinConnect). In this way, apartment-dwellers, particularly renters, who cannot join body corporates [OCs] or have any power in influencing apartment-wide solar, are disadvantaged. Renters are also at the landlord's mercy as to whether they can access rooftop solar etc. In 23 years of renting, I have never had a landlord agree to install solar, even with generous rebates provided.

It would be environmentally beneficial and helpful to apartment-dwellers (particularly renters) to reduce their energy costs by installing solar in apartment buildings and townhouses.

Please give apartments and townhouses the same opportunities as houses when it comes to accessing renewable energy.

Source: Emma Osborne, *Submission 81*, p. 1.

Renter advocacy body Tenants Victoria explained that the inability of renters to engage with OCs in decisions that may impact their quality of life and finances (such as proposals for energy upgrades) contributes to inequity in accessing renewable energy in apartments.⁶² Strata law expert Professor Cathy Sherry asserted that '[t]he exclusion of tenants from governance structures is concerning in a country like Australia, where more than half of strata residents are tenants'.⁶³

⁶⁰ Dr Heather Holst, *Transcript of evidence*, pp. 40–41.

⁶¹ Darebin City Council, *Submission 88*, p. 2.

⁶² Tenants Victoria, *Submission 40*, p. 2.

⁶³ Professor Cathy Sherry, *Submission 1, Attachment 1*, p. 6.

Schemes providing renter representation in apartment buildings exist in jurisdictions such as NSW, France, and many other European nations.⁶⁴ In NSW, renters living in buildings where at least half the residents rent can elect a ‘tenant representative’ to attend and speak on their behalf at OC meetings. However, the tenant representative has no voting rights. Renters must also be notified of upcoming AGMs and can speak at them if more than 50% of owners vote in favour to allow it.⁶⁵

The possibility of increasing opportunities for renters to participate in apartment building governance was discussed throughout the Inquiry, specifically around proposing and contributing to decision-making around sustainability upgrades. The Committee heard that there is some tentative support (particularly among renter advocacy groups) for empowering renters to play a formal role in OCs. Damien Patterson, Director of Policy, Advocacy and Engagement at Tenants Victoria, advocated for allowing an individual renter to be elected to an OC committee where renters make up a significant proportion of residents in a building.⁶⁶ He noted that Tenants Victoria made a submission to the recent Expert Panel review of the *Owners Corporation Act 2006* (Vic) (OC Act) (described in Chapter 2), which called for ‘representation and participation in decision making’, specifically:

1. Provide for a renter representative on [OC] committees when the number of renter occupiers in the ... building exceeds a legislated (low) threshold.
2. Allow renter occupiers to formally notify the [OC] that they are residents of the ... building for the purposes of calculating this threshold.
3. Notify renter occupiers of Annual General Meetings, permit their attendance, allow them to speak subject to general meeting rules and get minutes of meetings.
4. Allow a renter representative at an [OC] committee meeting to speak, move motions and vote on non-financial decisions.
5. Provide a publicly searchable repository of all [OC] rules based on residential address.⁶⁷

Tenants Victoria argued that the failure of the OC Act to recognise the ‘legitimate interests (albeit not property interests)’ of renters is ‘antiquated’ as the decisions of OCs can impact renters’ lives ‘significantly’. It asserted that empowering renters to participate in building governance is ‘respectful’, ‘fair’ and ‘contributes to better and more inclusive outcomes’.⁶⁸

⁶⁴ Service Public, *Tenants’ association*, <<https://www.service-public.gouv.fr/particuliers/vosdroits/F1218?lang=en>> accessed 26 May 2026; Cornelius Van Der Merwe, ‘Case 9—‘We, the tenants in condominium schemes, want more rights!’: what shall we do with the tenants in a condominium scheme?’, in Cornelius Van Der Merwe (ed.), *European Condominium Law*, Cambridge University Press, 2015.

⁶⁵ NSW Government, *Strata meetings*, 2025, <<https://www.nsw.gov.au/housing-and-construction/strata/living/meetings>> accessed 22 May 2026.

⁶⁶ Damien Patterson, *Transcript of evidence*, p. 55.

⁶⁷ Tenants Victoria, submission to Expert Panel Review of the *Owners Corporations Act 2006*, September 2025, p. 2.

⁶⁸ *Ibid.*, p. 3.

Dr Holst also supported greater renter participation (including voting rights) in OCs but did not advocate for a specific model: ‘I think we have ... got to get some representation that is actually not just window-dressing’.⁶⁹ Researchers from the Collaboration on Energy and Environment Markets at the University of NSW (UNSW) submitted that, ‘significant changes [to the OC Act] are needed to address the lack of representation of tenants in strata decision making’.⁷⁰

Other stakeholders were more cautious about reform. Dr Janette Corcoran, Board Director at peak body for strata owners, the Owners Corporation Network of Australia, did not take a position and highlighted the differing priorities of renters and owner-investors. She questioned whether renters, who are typically transient residents of a building, would be interested in having a say on governance items, such as building maintenance plans, and whether they would support decisions in the long-term interest of the building, such as façade rectification.⁷¹ The average length of residential tenancies in Victoria is 24 months.⁷² The Committee heard that it can be as low as 18 months in some areas of central Melbourne, such as the Docklands.⁷³ Dr Corcoran suggested that the Committee explore the merit of formalising processes for long-term renters to participate in OCs as a proxy for owner-investors.⁷⁴

Tim Graham argued against greater representation rights for renters in building governance. He also noted that renters and owner-investors have different priorities for building management and suggested that the interests of renters should not override the investor:

there are perhaps two streams that [apartment owners and residents] are concerned with —one is the social and the other is the economic ... if you are a tenant, well, you are probably more concerned with the social and less with the economic ... So with those different stakeholders, there are different interests, and I do not think there is much that could be done to qualify or change that ... To somehow distinguish based on occupancy a proprietary right I think would run against fundamental principles of property ownership, frankly.⁷⁵

The Committee notes that legislative reform to increase renters’ participation in building governance and decision-making is a significant departure from current practices and outside the scope of this Inquiry. However, it acknowledges some stakeholders’ suggestions that reform of this nature has the potential to increase the uptake of solar in Victorian apartment buildings.

⁶⁹ Dr Heather Holst, *Transcript of evidence*, p. 43.

⁷⁰ Collaboration on Energy and Environmental Markets, *Submission 80*, p. 5.

⁷¹ Dr Janette Corcoran, Board Director, Owners Corporation Network of Australia, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 37.

⁷² Commissioner for Residential Tenancies, *Submission 82*, p. 3.

⁷³ Dr Janette Corcoran, *Transcript of evidence*, p. 37.

⁷⁴ *Ibid.*

⁷⁵ Tim Graham, *Transcript of evidence*, p. 41.

FINDING 18: Long term rental households in Victorian apartment buildings have limited say over the management of their apartment and investment into its sustainability.

3.2 Fairer, affordable and renewable energy in embedded networks

Much of the evidence received by the Committee throughout the Inquiry examined the operation of ENs in apartment buildings and the impact on energy upgrades in apartments, such as residential solar. An electricity EN is a privately owned and operated electricity distribution system specific to a building. It involves a single metered connection to the electricity grid and submeters for individual apartments. An EN operator buys electricity in bulk from the grid and on-sells it to individual households (via submeters) for profit.⁷⁶

As relatively small energy networks contained to a private site, many ENs are exempt from some national and state registration and licensing requirements and operating regulations. At the national level, ENs are often exempt from registering as a network service provider with the Australian Energy Market Operator, the national body overseeing electricity systems. They can also be exempt from registering as an authorised energy retailer with the Australian Energy Regulator (AER), which oversees energy markets nationally.⁷⁷ According to the AER, '[e]xempt sellers must follow strict conditions and meet a range of obligations to their customers, but generally the regulatory requirements are lighter than those of retailer authorisations'.⁷⁸

At the state level, ENs are often exempt from obtaining an operating licence with the Essential Services Commission, which regulates Victorian electricity prices. However, exempt ENs must provide 'similar' customer protections to licensed retailers. They must obtain informed consent from customers, provide a customer dispute resolution scheme and ensure electricity prices do not exceed the Victorian Default Offer (VDO) (defined in Chapter 1).⁷⁹

⁷⁶ Solar Market, *Can I have solar if I live in an apartment?*, 2022, <<https://www.solarmarket.com.au/solar-blog/can-i-have-solar-if-i-live-in-an-apartment>> accessed 2 December 2025; Metropolitan Community Power Hub, *Guide to Solar for Apartments*, Yarra Energy Foundation, 2022, p. 13; Associate Professor Nicola Willand, et al., *Submission 27*, p. 11.

⁷⁷ Australian Energy Regulator, *Retail exempt selling guideline: version 7*, 2025, pp. 3, 5; Australian Energy Regulator, *Network exemptions guideline: version 7*, 2025, p. 10.

⁷⁸ Australian Energy Regulator, *Retail exempt selling guideline*, p. 6.

⁷⁹ Essential Services Commission, *Information on electricity licence exemptions for sellers and suppliers*, <<https://www.esc.vic.gov.au/electricity-and-gas/licences-exemptions-and-trial-waivers/information-electricity-licence-exemptions-sellers-and-suppliers>> accessed 13 May 2026; Essential Services Commission, *Registration guideline for exempt persons: information and application requirements for persons exempt from having a Victorian licence for the sale or supply of electricity*, 2026, p. 12; Essential Services Commission, *Embedded networks*, <<https://www.esc.vic.gov.au/electricity-and-gas/information-for-electricity-and-gas-consumers/embedded-networks>> accessed 13 May 2026; Department of Environment, Land, Water and Planning, *General exemption order 2022: new obligations for embedded networks from 1 January 2023*, 2022, p. 1; Essential Services Commission, *Victorian Default Offer*, <<https://www.esc.vic.gov.au/electricity-and-gas/prices-tariffs-and-benchmarks/victorian-default-offer>> accessed 20 February 2026.

Stakeholders suggested that ENs are becoming more common in Victorian apartment buildings, but their exact number is unknown.⁸⁰ Figures from the Essential Services Commission indicated that ‘as at March 2021 more than 131,000 consumers reside in over 1,500 embedded network sites’ registered with the Commission. This includes apartment buildings, retirement homes and caravan parks.⁸¹

ENs are typically established by a developer (on behalf of future apartment residents, but not necessarily in their interests) when a building is being built. EN infrastructure is funded by the EN operator who recovers the cost of the infrastructure from apartment owners and/or residents through fees over time.⁸²

Apartment residents can benefit from living in an EN. However, evidence suggests that these benefits do not typically occur unless an EN is established by apartment owners or negotiated solely in their interests.⁸³ EN operator Energy Trade said a key advantage is that ENs manage and maintain electrical infrastructure on behalf of OCs, relieving them of this responsibility.⁸⁴ It also suggested that OC committees, which negotiate tariffs with EN operators on behalf of all residents, may secure more affordable energy due to their collective bargaining power.⁸⁵ However, others said that the knowledge imbalance between EN operators (often large companies) and OC committees (a small group of volunteers) means this is unlikely.⁸⁶ The Expert Panel review of the OC Act similarly found that:

[w]hile some embedded network customers in Victoria achieve modest initial savings (a median reduction of 2 cents per kilowatt hour (6.07%) compared to regular residential consumers) ... this comes at a significant future cost to consumer choice.⁸⁷

The OC Act review is described in detail in Chapter 2.

Energy Trade also suggested that including an EN in a new building can reduce the purchase price of apartments (as the cost of electrical infrastructure can be discounted from the sales price).⁸⁸ However, Professor Sherry disputed this. She reported that apartment buyers can end up paying for the electrical infrastructure twice, once at purchase (as developers may not discount the cost of the EN) and secondly in the ongoing fees charged by the EN operator for the infrastructure.⁸⁹ She quoted the Public Interest Advocacy Centre, who said that ENs have ‘become a mechanism for additional profit for developers’.⁹⁰

⁸⁰ Housing Choices Australia, *Submission 55*, p. 7.

⁸¹ Department of Environment, Land, Water and Planning, *Embedded networks review: final recommendations report*, 2022, p. 7.

⁸² Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006*, p. 35.

⁸³ Professor Cathy Sherry, *Submission 1, Attachment 1*, p. 14.

⁸⁴ Energy Trade Pty Ltd, *Submission 53*, pp. 2, 6.

⁸⁵ Ibid.

⁸⁶ Let Me Be Frank, *Working with apartment and strata communities*, p. 57.

⁸⁷ Expert Panel for the Owners Corporations Act Review, *Statutory review of the Owners Corporation Act 2006*, p. 37.

⁸⁸ Energy Trade Pty Ltd, *Submission 53*, p. 2; Lee Kolbe, Chief Operating Officer, Energy Trade Pty Ltd, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 66.

⁸⁹ Professor Cathy Sherry, *Submission 1, Attachment 1*, pp. 1, 11–12.

⁹⁰ Ibid., p. 12.

Energy On, another EN operator, suggested that it can be technically simpler and less expensive to retrofit residential solar to apartment buildings with an existing EN as this electrical infrastructure is well-suited to a shared solar system.⁹¹ However, Professor Sherry pointed out that EN operators sometimes pose administrative or contractual barriers to solar for apartments with a view to protecting their profits.⁹²

Suggested benefits aside, many stakeholders expressed serious concern regarding the general operation of ENs. Speaking about the NSW experience, Professor Sherry asserted that:

Far from providing apartment owners and tenants with discounted and renewable energy, [ENs] have been consistently associated with above-market prices and consumer exploitation.⁹³

Consumer advice and advocacy body Financial Counselling Victoria said '[f]inancial counsellors frequently assist clients living in homes with embedded energy networks'.⁹⁴ Common concerns raised with the Committee included that ENs:

- typically charge apartment residents above-market energy prices⁹⁵
- restrict apartment residents' choice of energy retailers and tariff options, limiting their access to more affordable or renewable energy⁹⁶
- offer more limited consumer protections than standard energy retailers, such as weaker protections against energy bill hardship and disconnection⁹⁷
- lock apartment owners into long-term contracts with legally and financially challenging exit pathways⁹⁸
- can offer financial benefits to OCs (such as investment in building infrastructure or rebates), which can create a conflict of interest between owners and renters.⁹⁹

Apartment resident Felicity Mulhall lives in an EN. Case Study 3.3 describes her experiences.

⁹¹ Energy On, *Submission 59*, p. 2.

⁹² Professor Cathy Sherry, *Submission 1, Attachment 1*, p. 11.

⁹³ *Ibid.*, p. 9.

⁹⁴ Financial Counselling Victoria, *Submission 36*, p. 1.

⁹⁵ Professor Cathy Sherry, *Submission 1, Attachment 1*, p. 9; Greater Dandenong City Council, *Submission 22*, p. 3; Victorian Council of Social Service, *Submission 86*, pp. 1, 5; Brotherhood of St. Laurence, *Submission 83*, p. 2.

⁹⁶ Environment Victoria, *Submission 42*, p. 5; Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 9; Professor Cathy Sherry, *Submission 1, Attachment 1*, pp. 12, 14; Professor Rebecca Yang, *Submission 38*, p. 1; Victorian Council of Social Service, *Submission 86*, p. 5; ClearVue Technologies Ltd, *Submission 68*, p. 10; Financial Counselling Victoria, *Submission 36*, p. 1; Brotherhood of St. Laurence, *Submission 83*, p. 2; Associate Professor Nicola Willand, et al., *Submission 27*, p. 11; Matt Torney, Director, Strategy, Performance and Sustainability, Housing Choices Australia, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, pp. 45–46.

⁹⁷ Associate Professor Nicola Willand, et al., *Submission 27*, p. 11; Brotherhood of St. Laurence, *Submission 83*, p. 2; Nishchal Baniya, *Submission 24*, p. 2.

⁹⁸ Professor Cathy Sherry, *Submission 1, Attachment 1*, pp. 10, 13; Housing Choices Australia, *Submission 55*, p. 7; Let Me Be Frank, *Working with apartment and strata communities*, p. 57.

⁹⁹ Let Me Be Frank, *Working with apartment and strata communities*, p. 57.

Case Study 3.3 What is it like to live in an embedded network?

I am a private renter in a large apartment complex of about 568 dwellings that operates on an embedded electricity network. I cannot install rooftop solar. I cannot change the building's energy setup. I do not have voting rights in the Owners Corporation. My electricity is supplied through an embedded network retailer operating under an exemption, not a standard licensed retailer.

I knew the building was on an embedded network when I signed my lease. What I did not fully understand was how little control I would have over pricing and retail choice once I moved in.

Over the past 12 months, my total electricity usage was 945 kWh. The Victorian Default Offer uses 4,000 kWh per year as its reference household consumption. The 2025–26 CitiPower VDO annual reference price for 4,000 kWh is \$1,546. I use less than a quarter of that benchmark amount. I live alone and use electricity carefully.

Despite this low usage, my daily supply charge is \$1.240690 per day. That works out to about \$452 per year just to stay connected. At current rates, my annual usage cost is roughly \$258.

This means around 64% of my yearly electricity cost is made up of fixed supply charges, not the electricity I actually use.

The issue for me is not high usage ... When most of the cost is fixed, using less power does not make much difference. Being careful does not significantly lower the bill. The financial reward for efficiency is small.

Because my building is on an embedded network operating under an exemption, I do not have the same consumer protections as someone who buys electricity directly from a standard retailer. I am told I can switch to another authorised retailer, but the process appears complex and may involve additional network charges or changes to metering. As a renter, I have no authority to influence building-level decisions that might be needed to make that happen.

In practice, the right to choose does not feel straightforward or accessible.

Source: Felicity Mulhall, *Submission 18*, pp. 1–2.

Many of the concerns raised were dismissed by the EN operators that participated in the Inquiry. Energy Trade acknowledged that individual households living in ENs can find it difficult to switch energy retailers but suggested that this is because outside retailers won't take them.¹⁰⁰ Energy retailers can find it challenging to provide a standalone 'retail only' service to one household within an EN.¹⁰¹ Energy Trade also

¹⁰⁰ Lee Kolbe, *Transcript of evidence*, p. 66.

¹⁰¹ Housing Choices Australia, *Submission 55*, p. 7.

pointed out that OCs can switch providers at the end of an EN contract.¹⁰² It argued that market competition occurs ‘at the whole-of-building level’ to deliver competitive prices to all apartment residents:

Competition typically occurs at the whole-of-building level. Strata schemes increasingly switch EN providers where more favourable commercial terms are available ... Arguably, EN customers are participating in a more competitive market due to the customer advocacy provided by property developers, OCs and strata consultants. Even the customers in ENs who are not engaged still benefit from discounts that other occupants negotiate, given these always happen at a site-wide level.¹⁰³

Energy On said that it is delivering ‘best-in-market rates, with 100 per cent renewable energy’ in the social housing and affordable housing developments it operates in.¹⁰⁴ Housing Choices Australia (HCA), a CHO, agreed that ENs can provide social housing tenants with affordable tariffs, consumer protections and reasonable opt-out pathways from long-term EN contracts. It noted that it negotiated these benefits for around 200 new social housing apartments it developed last year within ENs.¹⁰⁵ However, Matt Torney, Director of Strategy, Performance and Sustainability at HCA, stressed that his organisation was only able to do this because it is large and ‘fought hard and long’ for more favourable terms. He cautioned that protective regulation is needed to make it easier for other organisations and OCs to access similar benefits from ENs.¹⁰⁶

Significantly for the purposes of this Inquiry, the Committee also heard that ENs can prevent solar in apartment buildings and stop residents from accessing more renewable and affordable energy. Professor Sherry explained how EN contracts can prevent solar:

Many embedded networks provide minimal sustainability gains, and some actively prevent sustainability upgrades. For example, the developer may allow an energy retailer to install PV [photovoltaic] panels on a common property roof ... However, a clause in the EN [operator]-body corporate [OC] contract will specify that all energy generated belongs to the retailer, which it can sell back to the grid for its own profit or elect to sell to the body corporate [OC] at its peak rate. Another contractual clause will prohibit the body corporate [OC] or individual owners from installing their own PV panels, even if there is sufficient common property or lot space.¹⁰⁷

Similar evidence was provided by Environment Victoria, which also noted that a survey of apartment residents identified ENs as one of the top three barriers to accessing solar for apartments.¹⁰⁸ Renewable energy expert Professor Rebecca Yang from The

¹⁰² Energy Trade Pty Ltd, *Submission 53*, p. 3.

¹⁰³ Ibid.

¹⁰⁴ Rosa Di Noto, Manager, Operations, Energy On, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 65.

¹⁰⁵ Housing Choices Australia, *Submission 55*, p. 6.

¹⁰⁶ Matt Torney, *Transcript of evidence*, pp. 47–48.

¹⁰⁷ Professor Cathy Sherry, *Submission 1, Attachment 1*, p. 11.

¹⁰⁸ Environment Victoria, *Submission 42*, p. 4.

University of Melbourne pointed out that ENs may also prevent households from accessing renewable energy and deals offered by other providers, such as ‘time-of-use/ demand-based offers, “solar sponge” style daytime pricing, and packaged plans linked to distributed energy’, if their arrangements do not allow participation and they cannot change retailers.¹⁰⁹

FINDING 19: Embedded electricity networks established by property developers can lock owners corporations into long contracts, prevent the installation of solar on apartment buildings and fail to pass on the benefit of more affordable energy to apartment owners and residents.

FINDING 20: Apartment residents living in embedded electricity networks can find it challenging to switch energy retailers or access market rates for electricity.

FINDING 21: Embedded electricity networks negotiated in the best interest of apartment residents can deliver more affordable and renewable energy, such as those established by community housing organisations for social housing tenants.

3.2.1 Embedded networks have been subject to review

Many of the concerns raised throughout the Inquiry were also examined as part of recent state and federal reviews of EN operation and regulation, as outlined below.

Review of the Australian Energy Regulator exemptions framework for embedded networks

In November 2023, the AER reviewed the guidelines applying to ENs exempt from national registration requirements. It sought to understand:

- the harms, or risk of harms, faced by EN customers
- the benefits of ENs and the extent to which customers can access them
- whether it should update its guidelines for exempt electricity retailers and networks to strengthen regulation and oversight of ENs, enhance reporting arrangements and consumer protections, or restrict the growth of future ENs in residential settings.¹¹⁰

¹⁰⁹ Professor Rebecca Yang, *Submission 38*, p. 1.

¹¹⁰ Australian Energy Regulator, *Review of the AER exemptions framework for embedded networks*, <<https://www.aer.gov.au/industry/registers/resources/reviews/review-aer-exemptions-framework-embedded-networks>> accessed 12 May 2026.

Like the Committee's Inquiry, the review found that ENs can deliver some benefits to households, including more affordable and renewable energy. However, it also identified 'systemic risks' for EN customers, including 'clear consumer protection gaps' and a lack of energy retailer and tariff choice. It found that the limited visibility of ENs made it challenging to monitor and enforce compliance with regulation.¹¹¹

As a result of the review, the AER updated its national guidelines to improve customer protections and oversight of ENs. It noted that statutory reform is also required at the state level to ensure all energy customers have the same level of consumer protections.¹¹²

Victoria's Embedded Networks Review

In 2021–2022, the Victorian Government reviewed the operation of ENs. It was responding to community concerns that consumers living in, or operating businesses in, buildings with ENs were being charged higher energy prices without access to the consumer protections available to other energy customers.¹¹³

The review found that ENs can provide 'real cost savings' to consumers by buying electricity in bulk, incorporating residential solar or by having access to commercial (rather than residential) feed-in tariffs. However, in practice 'a significant number of [ENs] are not passing the benefits onto their customers'. It also found that insufficient monitoring and oversight left consumers living under these arrangements less protected than other consumers.¹¹⁴

The review made 16 recommendations, including banning ENs in new buildings unless they incorporate significant onsite renewable energy generation and pass on savings to consumers.¹¹⁵ The Victorian Government has committed to implementing these recommendations in two phases, as discussed below.¹¹⁶

Completed reforms arising from the Victorian review

The first phase of reform introduced some basic protections for households living in a building with an EN. The Victorian Government ruled that maximum energy prices in ENs cannot exceed the VDO and expanded customers' access to the dispute resolution services of the Victorian Energy and Water Ombudsman.¹¹⁷

¹¹¹ Australian Energy Regulator, *Review of the AER exemptions framework for embedded networks: final decision, incorporating notice of final instruments*, 2025, pp. 1, 7.

¹¹² Ibid., pp. 1, 2; Smart Energy Lab, *Submission 26*, p. 7.

¹¹³ Department of Environment, Land, Water and Planning, *Embedded networks review*, p. 6.

¹¹⁴ Ibid., p. 13.

¹¹⁵ Ibid., pp. 18–21.

¹¹⁶ Department of Energy, Environment and Climate Action, *The embedded networks review*, <<https://www.energy.vic.gov.au/about-energy/legislation/regulatory-reviews/the-embedded-networks-review>> accessed 4 February 2026.

¹¹⁷ Department of Environment, Land, Water and Planning, *Victorian Government response to the embedded networks review*, 2022, p. 1.

From 2023, the Government also banned ENs in new apartment buildings with ten or more residential customers unless they meet the following ‘renewable energy requirement’:

- 100% of the electricity sold to households is from renewable sources
- at least 5% of this renewable energy is generated onsite.¹¹⁸

Electricity supplying common areas or shared resources like electric vehicle charging stations is not required to be renewable.¹¹⁹

ENs are also not required to sell this renewable energy at a price that reflects the cost of generating or purchasing it. Rather prices must not exceed the VDO (which can be higher than market rates).¹²⁰ This may mean that even when apartment residents in an EN have access to renewable energy, it may not be more affordable.

Lee Kolbe, Chief Operating Officer at Energy Trade, provided evidence to the Committee’s Inquiry that it can be difficult for ENs to meet the renewable energy requirement to generate 5% of energy onsite in new buildings, particularly in tall buildings with limited roof space for solar. She also said that purchasing renewable energy offsite can sometimes be more expensive than standard energy supplied through the grid.¹²¹

Outstanding reforms arising from the Victorian review

The second, yet to be implemented, phase of reform will focus on legislating to improve outcomes for households living in buildings within ENs that predate the first phase of reform (legacy ENs). This will encompass a licensing scheme for all ENs and improving consumer protections to bring them in line with broader energy consumers. It will also increase regulatory oversight of ENs and ensure households can choose their own energy retailer.¹²²

It is not clear whether the second phase of reforms will extend the renewable energy requirement to all legacy ENs within three years of them being subjected to the licensing scheme, as recommended by the Embedded Networks Review.¹²³

¹¹⁸ Department of Environment, Land, Water and Planning, *General exemption order 2022*, pp. 1–2.

¹¹⁹ *Ibid.*, p. 2.

¹²⁰ *General Exemption Order 2022*, Part 2, Division 3, s 10.

¹²¹ Lee Kolbe, *Transcript of evidence*, p. 68.

¹²² Department of Energy, Land, Water and Planning, *Victorian Government response to the embedded networks review*, p. ii.

¹²³ *Ibid.*, p. 10.

3.2.2 Reforming embedded networks would secure fairer energy outcomes

Stakeholders acknowledged that the first phase of Victorian Government reform has improved conditions for households living in ENs, particularly in new buildings.¹²⁴ However, many remained highly critical of the operation of ENs and the energy outcomes for apartment residents, especially in legacy ENs or those in a social housing setting.¹²⁵ It was brought to the Committee's attention that new ENs are successfully avoiding the renewable energy requirement by becoming licensed energy retailers with the Essential Services Commission.¹²⁶ The City of Melbourne also suggested that the 5% onsite renewable energy generation aspect of the requirement is 'physically unachievable for many large apartment buildings where the number of apartment dwellings and electricity loads far exceed that which can be met through rooftop solar'.¹²⁷

FINDING 22: New embedded network operators can avoid the 5% onsite renewable energy requirement by becoming licenced energy retailers with the Essential Services Commission.

There was strong advocacy throughout the Inquiry for further, wide-ranging reform to address some of stakeholders' ongoing concerns with ENs, including:

- ensuring apartment residents can exit an EN and access alternative energy retailers¹²⁸
- requiring all ENs to provide customers with standard consumer protections such as access to energy bill concessions and hardship programs¹²⁹
- subjecting all ENs to energy pricing oversight and tariff comparisons, to improve transparency¹³⁰
- ensuring all customers in ENs can access dispute resolution mechanisms¹³¹

¹²⁴ Merri-bek City Council, *Submission 76*, p. 12; Electrify Boroondara, *Submission 13*, p. 2; Victorian Council of Social Service, *Submission 86*, p. 5; Rory Anderson, Policy Adviser, Energy and Cost of Living, Victorian Council of Social Service, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 49; Environment Victoria, *Submission 42*, p. 6; Yarra City Council, *Submission 50*, p. 4.

¹²⁵ Environment Victoria, *Submission 42*, p. 6; Merri-bek City Council, *Submission 76*, p. 12; Electrify Boroondara, *Submission 13*, p. 2; Victorian Council of Social Service, *Submission 86*, p. 5; Housing for the Aged Action Group, *Submission 74*, pp. 12, 14; Victorian Public Tenants Association, *Submission 34*, pp. 17–18.

¹²⁶ City of Melbourne, *Submission 84*, p. 22; Property Council of Australia, *Submission 75*, p. 6.

¹²⁷ City of Melbourne, *Submission 84*.

¹²⁸ Matt Torney, *Transcript of evidence*, pp. 45–46; Greater Dandenong City Council, *Submission 22*, p. 4.

¹²⁹ Energy Consumers Australia, *Submission 87*, p. 3; Associate Professor Nicola Willand, et al., *Submission 27*, p. 30; Housing for the Aged Action Group, *Submission 74*, p. 10; Electrify Boroondara, *Submission 13*, p. 2; Owners Corporation Network of Australia Limited, *Submission 61*, p. 12; Housing Choices Australia, *Submission 55*, pp. 4, 11, 12; Deakin University, *Submission 16*, p. 1.

¹³⁰ Energy Consumers Australia, *Submission 87*, p. 3; Housing for the Aged Action Group, *Submission 74*, p. 10; Electrify Boroondara, *Submission 13*, p. 2; Housing Choices Australia, *Submission 55*, pp. 4, 11, 12.

¹³¹ Associate Professor Nicola Willand, et al., *Submission 27*, p. 30; Housing for the Aged Action Group, *Submission 74*, p. 10.

- capping contract durations to a reasonable period (for example, three years as is the case in NSW)¹³²
- requiring all ENs to be licensed with the Essential Services Commission¹³³
- extending the renewable energy requirement to all ENs (new, legacy and licensed)¹³⁴
- removing or revising the 5% onsite obligation of the renewable energy requirement¹³⁵
- ensuring that the benefits of incorporating solar into an EN are passed onto apartment residents as more affordable energy.¹³⁶

Some stakeholders called for the Victorian Government to accelerate the outstanding reforms recommended by the Embedded Networks Review.¹³⁷ There was also some support for phasing ENs out altogether. VCOSS argued that ENs should be abolished and their customers ‘supported to transition onto individually metered energy bills with the ability to choose their provider’.¹³⁸ Other submitters noted that some social housing tenants are being relocated into new community housing with ENs and suggested that this should be banned or that ENs should be required to access affordable renewable energy through the State Electricity Commission.¹³⁹

The Committee thanks stakeholders for coming forward with their concerns about the operation of ENs and their impact on apartment residents’ access to affordable and renewable energy.

Increasing the oversight of ENs and pursuing greater regulatory protections for households living within ENs is already a priority of national energy regulators and the Victorian Government. Many of the regulatory changes recommended by stakeholders to this Inquiry will be enacted as part of the Victorian Government’s second phase of reforms rising from the Embedded Networks Review. For example, extending the licensing regime and renewable energy requirement to all ENs. The Victorian Government has committed to pursuing outstanding reforms in 2027, beginning with legislating a requirement for ENs to align electricity prices with the most competitive rates in the market.¹⁴⁰

¹³² Yarra City Council, *Submission 50*, p. 5; City of Melbourne, *Submission 84*, pp. 22, 24.

¹³³ Victorian Council of Social Service, *Submission 86*, pp. 3, 5; Electrify Boroondara, *Submission 13*, p. 2.

¹³⁴ Victorian Council of Social Service, *Submission 86*, pp. 3, 5; City of Melbourne, *Submission 84*, p. 22; Merri-bek City Council, *Submission 76*, p. 12.

¹³⁵ City of Melbourne, *Submission 84*, p. 24; Property Council of Australia, *Submission 75*, p. 6.

¹³⁶ Nishchal Baniya, *Submission 24*, p. 3.

¹³⁷ Yarra City Council, *Submission 50*, p. 5; Victorian Council of Social Service, *Submission 86*, p. 5; Merri-bek City Council, *Submission 76*, p. 12.

¹³⁸ Victorian Council of Social Service, *Submission 86*, pp. 3, 5.

¹³⁹ Housing for the Aged Action Group, *Submission 74*, pp. 12, 14; Raoul Wainwright, Acting Chief Executive Officer, Victorian Public Tenants Association, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 48; Brotherhood of St. Laurence, *Submission 83*, pp. 1–2; Let Me Be Frank, *Submission 85*, p. 4; Victorian Public Tenants Association, *Submission 34*, pp. 17–18.

¹⁴⁰ Hon Jacinta Allan MP, *Lower energy prices for embedded networks*, media release, 27 May 2026.

In addition to progressing this important reform to enhance the oversight and regulation of ENs, the Committee believes that the Victorian Government should close the loophole enabling some new embedded networks to obtain licences with the Essential Services Commission to avoid the renewable energy requirement. While this may help ensure consumer protections, it goes against a key government objective of ensuring that the apartment sector participates in the state's energy transition and apartment residents can access renewable energy.

The Committee would also like to see the renewable energy requirement extended to legacy ENs. This may require adjusting the requirement to permit existing high-rise buildings to access 100% renewable energy from offsite sources in instances where onsite generation is not possible.

RECOMMENDATION 7: That the Victorian Government monitor the efficacy of the Embedded Networks Review reforms to ensure all apartment residents living in embedded networks have equitable access to renewable and affordable energy.

3.3 More sustainable social housing apartments

The sustainability of social housing in Victoria is currently extremely variable. As noted in Chapter 1, most community housing and a large proportion of public housing dwellings are apartments or other multi-unit dwellings.¹⁴¹ Newly constructed social housing is typically highly energy efficient and all electric, often incorporating residential solar. Community housing sector peak body Community Housing Industry Association Victoria (CHIA Vic) said that quality design and long-term asset management are prioritised to ensure new community housing is 'built to high standards'.¹⁴² However, much of Victoria's social housing is old (60% was more than 30 years old in 2016) with poor thermal and energy efficiency. Residential solar is not common and as many as 60,000 social homes rely on fossil gas appliances.¹⁴³

Advocacy body Housing for the Aged Action Group (HAAG) reported that '[o]lder residents in public and community housing often live in apartment buildings with very poor thermal performance'.¹⁴⁴ While not speaking specifically about social housing apartments, Infrastructure Victoria reported that '[v]ulnerable Victorians tend to live in

¹⁴¹ Australian Institute of Health and Welfare, *Housing assistance in Australia*, 2026, <<https://www.aihw.gov.au/reports/housing-assistance/housing-assistance-in-australia-2026/contents/social-housing-dwellings>> accessed 20 July 2026.

¹⁴² Community Housing Industry Association Victoria, *Submission 69*, p. 5.

¹⁴³ Enzo Lara-Hamilton, et al., *Life cycle impacts of public housing renewal in Victoria*, report prepared by Melbourne Centre for Cities, The University of Melbourne, 2024, pp. 7–8; Daniel Miles, 'Victorian public housing advocates push for solar panel pledge before state election', *ABC News*, 11 September 2022, <<https://www.abc.net.au/news/2022-09-11/solar-push-for-public-housing-residents/101410560>> accessed 28 April 2026; Australian Council of Social Services and Brotherhood of St Laurence, *Energy stressed in Australia*, 2018, pp. 8, 22, 25; Community Housing Industry Association Victoria, *Submission 69*, p. 5; Victorian Council of Social Service, *Submission 86*, p. 8; Greater Dandenong City Council, *Submission 22*, p. 3; Matt Torney, *Transcript of evidence*, p. 52; Victorian Council of Social Service, *Powering homes beyond fossil gas*, submission to Department of Transport and Planning and Department of Energy, Environment and Climate Action, Building Electrification Regulatory Impact Statement consultation, 2025, pp. 8, 90.

¹⁴⁴ Housing for the Aged Action Group, *Submission 74*, p. 11.

less efficient homes' and that most (60%) of Victorian homes are rated 2 stars or below on energy efficiency.¹⁴⁵ A significant proportion of public housing (ranging from 17% to 45%) lacks ceiling insulation.¹⁴⁶

These characteristics contribute to the high energy consumption of these vulnerable households and increase the cost of heating and cooling homes to make them comfortable.¹⁴⁷ As advocacy body the Victorian Public Tenants Association (VPTA) said, public housing tenants 'spend more on energy than other Victorian households [and are] the most at risk of experiencing energy hardship'.¹⁴⁸ VCOSS reported that '[s]ocial housing provides shelter to cohorts on very low incomes who often experience multiple intersecting vulnerabilities ... [and] that often spend a high proportion of income on energy costs'.¹⁴⁹

Improving the energy and thermal efficiency of social housing apartments and installing residential solar can deliver transformative benefits for social housing tenants, including bill relief and improved health and comfort.¹⁵⁰ CHIA Vic said that the benefits of more sustainable housing are 'amplified' for social housing tenants:

Social housing renters stand to benefit disproportionately more from access to cheaper and cleaner energy than many other groups ... This includes older people, people with chronic health conditions or specific accessibility needs, people with digital literacy and language barriers, and those experiencing financial hardship and stress. The energy bill savings, thermal comfort, and improvements to health and wellbeing (including mental), on average, make a bigger difference in the lives of these and other social renters.¹⁵¹

HCA said reducing the energy costs of social housing tenants can improve low-income households' ability to sustain their tenancy, stating, 'energy settings matter to housing stability'.¹⁵²

Electrifying social housing apartments and increasing the uptake of residential solar will also support Victoria's transition to renewable energy generation and net zero carbon emissions. As noted in Chapter 1, the UNSW Collaboration on Energy and Environmental Markets estimates that across all of Victoria's social housing there is the potential to install between 246–416 MW of solar capacity.¹⁵³ Infrastructure Victoria argued that electrifying social housing will support tenants to 'save on energy bills ... reduce their exposure to higher gas prices, and support a fairer energy transition'.¹⁵⁴

¹⁴⁵ Infrastructure Victoria, *Submission 20*, p. 3.

¹⁴⁶ Australian Housing and Urban Research Institute, *Warm, cool and energy-affordable housing policy solutions for low-income renters*, p. 19.

¹⁴⁷ Housing for the Aged Action Group, *Submission 74*, p. 11; Raoul Wainwright, *Transcript of evidence*, p. 46.

¹⁴⁸ Victorian Public Tenants Association, *Submission 34*, p. 5.

¹⁴⁹ Victorian Council of Social Service, *Submission 86*, p. 8.

¹⁵⁰ Ibid.; Clean Energy Council, *Submission 66*, p. 6.

¹⁵¹ Community Housing Industry Association Victoria, *Submission 69*, p. 11.

¹⁵² Housing Choices Australia, *Submission 55*, p. 6.

¹⁵³ Mohammad Dehghanimadvar, et al., *Rooftop solar potential of Australian housing stock by tenure and dwelling type*, report for Solar Citizens and Australian PV Institute, 2024, p. 16.

¹⁵⁴ Infrastructure Victoria, *Submission 20*, p. 3.

FINDING 23: The sustainability of Victoria’s social housing stock is highly varied. New social housing apartments are typically built to high energy efficiency standards and sometimes incorporate residential solar. Older freestanding homes and apartments tend to have poor thermal and energy performance.

Case Study 3.4 illustrates the burden of energy costs on social housing tenants.

3

Case Study 3.4 Energy use and the cost of living in social housing

In 2023, the VPTA surveyed social housing tenants about their energy use and cost of living. Respondents described what they do to get by:

“I’m not having shower every day—only sometimes, switching off everything also power points after I use it. Saving gas, electricity, water, no quality of life, no driving to save petrol, no going out, no socialising—too costly, no hairdresser, no new clothes, no orthopaedic shoes, no physiotherapy, no hydrotherapy, no holiday, no cultural outings, etc. No quality of life”

“Air conditioner use for 30 minutes to warm/cool area then turn off. Food—try to buy only what I absolutely need, no luxuries.”

Source: Victorian Public Tenants Association, *Submission 34*, p. 4.

Many of the barriers to sustainability upgrades in social housing apartments are similar to those impeding home electrification and the greater uptake of residential solar in apartment buildings more generally.¹⁵⁵ These are discussed further in Chapter 4 and include:

- low-capacity wiring, switchboards and other electrical infrastructure which is inadequate for home electrification or residential solar¹⁵⁶
- insufficient local electrical grid infrastructure (such as wiring or substations).¹⁵⁷

Additional barriers also arise where social housing is present in mid- to high-density residential developments with a mix of housing tenures. These can include:

- navigating OCs (where tenure in the building is mixed)¹⁵⁸
- the restrictive nature of ENs, which can limit access to residential solar and more affordable energy¹⁵⁹

¹⁵⁵ Victorian Council of Social Service, *Submission 86*, p. 8.

¹⁵⁶ Community Housing Industry Association Victoria, *Submission 69*, p. 8.

¹⁵⁷ Raoul Wainwright, *Transcript of evidence*, p. 51.

¹⁵⁸ Community Housing Industry Association Victoria, *Submission 69*, p. 8.

¹⁵⁹ Ibid.; Victorian Council of Social Service, *Submission 86*, p. 8.

- high demand for energy and limited roof space (in mid- or high-rise apartment buildings).¹⁶⁰

However, social housing organisations argued that the key barrier to sustainability upgrades in social housing is funding.¹⁶¹ CHIA Vic explained that ‘funding is the dominant barrier’ to sustainability upgrades in community housing as CHOs provide homes on a not-for-profit basis which leaves little capital for improving the quality of homes:

CHOs are non-profit charities that provide rent-capped housing to those who can’t afford to rent in the private market. As a result, they operate with highly constrained revenues, and decisions to invest in renewable energy technologies need to be weighed carefully against other choices like kitchen and bathroom upgrades, or building new community housing.¹⁶²

The structure of the social housing sector also offers some advantages which may make it easier to upgrade the sustainability of these homes. CHIA Vic explained that CHOs are the ‘sole-owner’ of many community homes and ‘[a]s the owner, they can install the hardware and software needed to generate and distribute the energy to renters, without needing to coordinate between different owners’.¹⁶³ Rory Anderson, Policy Adviser for Energy and Cost of Living at VCOSS, said this means that ‘government can lead the way’ with a ‘systems-level approach and investment’ in upgrading this housing stock.¹⁶⁴ Technology field testing company Smart Energy Lab noted the opportunity for ‘aggregated procurement’ of solar for social homes.¹⁶⁵

Raoul Wainwright, Acting Chief Executive Officer at VPTA, argued that the Victorian Government should leverage these advantages to pilot some new renewable energy solutions for apartment buildings on public housing stock, to demonstrate pathways for upgrades in the apartment sector.¹⁶⁶

FINDING 24: Community housing organisations can find it challenging to raise capital to improve the sustainability of the apartments and other multi-unit dwellings they manage.

Stakeholders supported tailored government investment to upgrade the thermal performance of social housing apartments, electrify these homes and connect them to residential solar.¹⁶⁷ Two funding models were suggested—direct investment in upgrades

¹⁶⁰ Victorian Council of Social Service, *Submission 86*, p. 8.

¹⁶¹ Ibid.; Community Housing Industry Association Victoria, *Submission 69*, p. 8; Commissioner for Residential Tenancies, *Submission 82*, pp. 3–4; Greater Dandenong City Council, *Submission 22*, p. 3; Raoul Wainwright, *Transcript of evidence*, pp. 46–47; Victorian Public Tenants Association, *Submission 34*, p. 4; Alex Trudzik, Manager, Policy, Community Housing Industry Association Victoria, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 50.

¹⁶² Community Housing Industry Association Victoria, *Submission 69*, p. 8.

¹⁶³ Ibid., p. 6.

¹⁶⁴ Rory Anderson, *Transcript of evidence*, p. 44.

¹⁶⁵ Smart Energy Lab, *Submission 26*, p. 10.

¹⁶⁶ Raoul Wainwright, *Transcript of evidence*, p. 47.

¹⁶⁷ Greater Dandenong City Council, *Submission 22*, p. 3.

(through grants) and loans for other enabling electrical works. There was also support for increasing access to more affordable and renewable energy through tariff reform. These opportunities are explored below.

3.3.1 Ongoing and equitable investment

Many stakeholders called for greater government investment in improving the sustainability of community and public housing apartments.¹⁶⁸ For example, an interdisciplinary group of researchers from RMIT University submitted that social housing ‘needs targeted and comprehensive financial and practical support’ for sustainability upgrades to ensure energy efficiency and equity.¹⁶⁹ CHIA Vic also called for government investment in the energy efficiency of social housing to be expanded.¹⁷⁰ VCOSS recommended funding for residential solar and battery systems, as well as home electrification and energy efficiency upgrades.¹⁷¹ Infrastructure Victoria similarly recommended energy upgrades in all social housing, ‘including electrification, energy efficiency and solar panels’.¹⁷² Greater Dandenong Council suggested that renewable energy upgrades be incorporated into existing social housing renewable programs ‘to ensure vulnerable residents are not left behind’.¹⁷³

Dr Holst argued that CHOs’ limited ability to recoup funds invested in sustainability upgrades (through energy savings or rent increases) means ‘[p]ut simply, access to new technologies and renewable energy for apartments in the social housing sector will require investment by Government in one way or the other’.¹⁷⁴

Federal and state government funding for energy and thermal efficiency upgrades (including residential solar) are already available for social housing through the Energy Efficiency in Social Housing Program (EESHP) and Social Housing Energy Performance Initiative (SHEPI). As described in Chapter 1, EESHP/SHEPI is expected to support 19,000 social homes to participate in Victoria’s energy transition. Funding is available for a broad range of thermal and energy efficiency upgrades as well as home electrification (including new appliances), decommissioning gas and increasing insulation.¹⁷⁵ Funding for residential solar is available to community housing, but not public housing, under these programs.¹⁷⁶

¹⁶⁸ Australian Academy of Technological Sciences and Engineering, *Submission 47*, p. 2; Associate Professor Nicola Willand, et al., *Submission 27*, p. 25; Victorian Council of Social Service, *Submission 86*, p. 8; Infrastructure Victoria, *Submission 20*, p. 2; Greater Dandenong City Council, *Submission 22*, p. 6; Community Housing Industry Association Victoria, *Submission 69*, p. 4; Commissioner for Residential Tenancies, *Submission 82*, pp. 3–4; Banyule City Council, *Submission 29*, p. 3.

¹⁶⁹ Associate Professor Nicola Willand, et al., *Submission 27*, p. 25.

¹⁷⁰ Community Housing Industry Association Victoria, *Submission 69*, p. 4.

¹⁷¹ Victorian Council of Social Service, *Submission 86*, p. 8.

¹⁷² Infrastructure Victoria, *Submission 20*, p. 2.

¹⁷³ Greater Dandenong City Council, *Submission 22*, p. 6.

¹⁷⁴ Commissioner for Residential Tenancies, *Submission 82*, pp. 3–4.

¹⁷⁵ Department of Energy, Environment and Climate Action (DEECA), *Questions about the program*, 2026, <<https://www.energy.vic.gov.au/grants/energy-efficiency-in-social-housing-program/program-questions>> accessed 12 June 2026.

¹⁷⁶ Victorian Public Tenants Association, *Submission 34*, p. 8.

CHOs can access further support for residential solar through the Solar for Community Housing Program. As noted in Chapter 1, CHOs can apply for a rebate of up to \$1,400 per tenancy (or a maximum of 50% of the total installation cost) to install rooftop solar on the social housing they manage. CHOs are required to pass on all resulting energy cost savings to their tenants.¹⁷⁷

CHIA Vic said that the funding provided to CHOs under these programs is ‘critical’ to expanding community housing tenants’ access to more affordable and renewable energy.¹⁷⁸ It recommended expanding ‘funding programs for energy efficiency upgrades in social housing, with specific funding for technologies that enable this in apartment buildings’.¹⁷⁹ VCOSS also called for ongoing investment in residential solar and batteries, energy efficiency upgrades and home electrification.¹⁸⁰ Peak body for trade unions, the Victorian Trades Hall Council, observed that, to date, much of the EESHP/SHEPI funding has been used for electrification and energy efficiency upgrades.¹⁸¹ It called for a greater focus on funding residential solar and battery systems for social housing going forward.¹⁸²

Stakeholders also highlighted that residential solar is not funded for public housing under any of the three programs.¹⁸³ VPTA was critical of the lack of support for public housing:

Public Housing renters are excluded from the program and there is no matching program for Public Housing. It is difficult for public housing tenants to understand why the Government would provide funding to put solar panels on someone else’s roof but not on their own.¹⁸⁴

It was joined by Tenants Victoria and HAAG in calling for funding to increase the uptake of residential solar and battery systems in public housing, commensurate to the investment in solar for community housing.¹⁸⁵

Inquiry evidence also highlighted the importance of government investment to fund preliminary feasibility and design work for incorporating solar in social housing apartments, and for funds to be provided upfront.¹⁸⁶ HCA observed that CHOs often lack ‘the baseline data needed to assess where upgrades will deliver the greatest benefit’ and called for government to support this work:

¹⁷⁷ Solar Victoria, *Solar rebates for community housing*, 2026, <<https://www.solar.vic.gov.au/solar-community-housing>> accessed 22 April 2026.

¹⁷⁸ Community Housing Industry Association Victoria, *Submission 69*, p. 9.

¹⁷⁹ *Ibid.*, p. 4.

¹⁸⁰ Victorian Council of Social Service, *Submission 86*, p. 8.

¹⁸¹ Victorian Trades Hall Council, *Submission 60*, p. 7.

¹⁸² *Ibid.*, p. 3.

¹⁸³ Victorian Public Tenants Association, *Submission 34*, pp. 7–9; Tenants Victoria, *Submission 40*, p. 1; Housing for the Aged Action Group, *Submission 74*, p. 13; Raoul Wainwright, *Transcript of evidence*, p. 47.

¹⁸⁴ Victorian Public Tenants Association, *Submission 34*, pp. 6–7.

¹⁸⁵ *Ibid.*, pp. 7–9; Tenants Victoria, *Submission 40*, p. 2; Housing for the Aged Action Group, *Submission 74*, p. 13; Raoul Wainwright, *Transcript of evidence*, p. 47.

¹⁸⁶ Housing Choices Australia, *Submission 55*, p. 9; Alex Trudzik, *Transcript of evidence*, pp. 45, 50; Community Housing Industry Association Victoria, *Submission 69*, p. 10.

Collecting this information across large portfolios can be costly and complex. HCA has received quotes of up to \$500 per dwelling to capture the data required to make informed, evidence-based decisions. Continued and expanded support for data collection, alongside upgrade funding, is pivotal to targeting investment well and improving sustainable energy outcomes in social housing.¹⁸⁷

Alex Trudzik, Manager of Policy at CHIA Vic, explained that CHOs require upfront funding to implement energy upgrades across their housing portfolio at scale as they have limited capital for investing in sustainability independently.¹⁸⁸ CHIA Vic argued that '[s]pecific policy interventions', such as additional resources, are also needed to upgrade electrical wiring or switchboards to enable electrification or solar.¹⁸⁹

FINDING 25: Ongoing, tailored government investment is needed to electrify, improve thermal and energy efficiency, and increase residential solar in both community and public housing apartments and other multi-unit dwellings.

3.3.2 Support for costs connected to upgrades

In addition to direct investment in the sustainability of social housing, stakeholders called for interest-free loans to help bridge the gap between government grants and the actual cost of energy upgrades in social housing apartments.¹⁹⁰

CHIA Vic argued that the provision of interest-free loans would assist CHOs to access funding for sustainability upgrades under the EESHP/SHEPI. These programs require CHOs to contribute to the cost of upgrades in order to access funding. CHIA Vic explained that this can prevent CHOs from accessing the program as they can find it difficult to raise these funds. It called for interest-free loans to help meet this requirement:

Combining grants with zero-interest loans could help to bridge the gap between costs and grant amounts for apartment building upgrades. The energy bill savings made by CHOs in common areas could help service these loans at zero-interest, making the upgrades and grants more accessible.¹⁹¹

VCOSS also said that '[i]n community housing, providers would most benefit from funding assistance to make upgrades to their properties' and canvassed the possibility of interest-free loans.¹⁹²

¹⁸⁷ Housing Choices Australia, *Submission 55*, p. 9.

¹⁸⁸ Alex Trudzik, *Transcript of evidence*, pp. 45, 50.

¹⁸⁹ Community Housing Industry Association Victoria, *Submission 69*, p. 8.

¹⁹⁰ *Ibid.*, p. 10.

¹⁹¹ *Ibid.*

¹⁹² Victorian Council of Social Service, *Submission 86*, p. 9.

Other stakeholders canvassed the introduction of interest-free loans to help cover the cost of residential solar and battery systems in social housing apartments more broadly.¹⁹³ The Smart Energy Council, the national peak body for the renewable energy and storage industry, argued that the unique capital constraints of CHOs merits this step:

CHOs are mission-driven organisations whose capital must be allocated primarily to housing stock and maintenance. Even modest out-of-pocket costs for solar or storage projects are frequently sufficient to cause a project to stall, regardless of the long-term financial case ... 100% interest-free loan financing for solar, storage, and enabling works in community housing ... allows CHOs to proceed with projects without upfront capital outlay, with loan repayments structured to be serviceable from common meter energy savings and Virtual Power Plant revenue—meaning tenants are not required to contribute to costs and the CHO’s core mission is not compromised.¹⁹⁴

RECOMMENDATION 8: That the Victorian Government assist the social housing sector to improve the sustainability of its apartments and other multi-unit dwellings through thermal and energy efficiency improvements, electrification and particularly residential solar and batteries. Support should extend to feasibility, design work and infrastructure cost gaps.

3.3.3 Tariff reform to relieve persistent energy hardship

While the Committee’s Inquiry focused on increasing access to renewable and affordable energy for apartment residents, some stakeholders provided more general evidence detailing households’ experiences of energy hardship more broadly. This section highlights this evidence, which falls outside of the Inquiry’s terms of reference.

Victoria’s most vulnerable low-income households struggle to afford energy costs on an ongoing basis, even with energy retailer hardship supports, like tariff concessions and payment plans.¹⁹⁵ Zyl Hovenga-Wauchope, Chief Executive Officer of Financial Counselling Victoria, described his organisation’s work to support this cohort:

there is a group of people who are on a persistently low income who will ... always struggle to pay bills ... these clients who can continue to need support, whether it is in emergency relief or utility relief grants ... they will likely need them next week, next month and possibly next year, so on and so forth.¹⁹⁶

¹⁹³ Ibid.; Yarra Energy Foundation, *Submission 48*, p. 4; Allume Energy, *Submission 31*, p. 3; Smart Energy Council, *Submission 32*, p. 5.

¹⁹⁴ Smart Energy Council, *Submission 32*, p. 5.

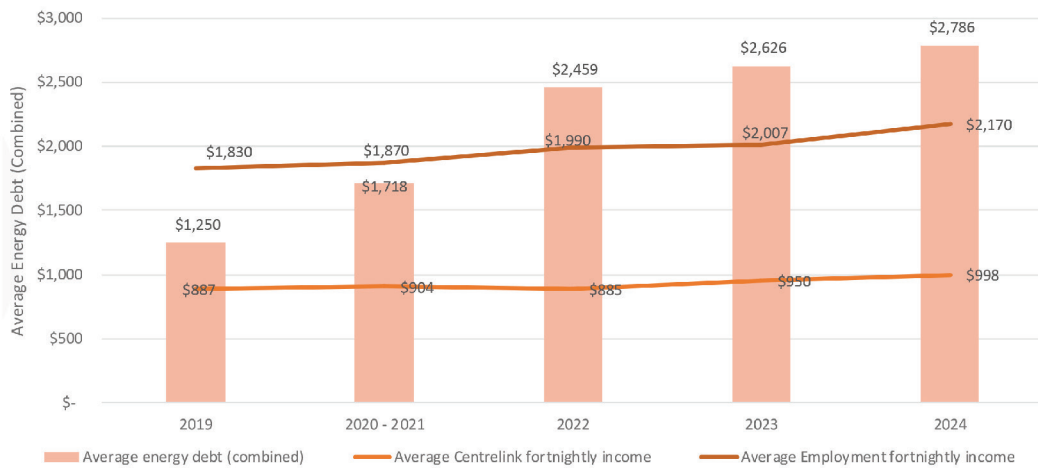
¹⁹⁵ Victorian Council of Social Service, *Submission 86*, pp. 13–14; Rory Anderson, *Transcript of evidence*, p. 44; Zyl Hovenga-Wauchope, Chief Executive Officer, Financial Counselling Victoria, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 55.

¹⁹⁶ Zyl Hovenga-Wauchope, *Transcript of evidence*, p. 55.

VCOSS asserted that ‘[t]he energy market is failing these customers’, many of whom live in social housing, by ‘creating structural unaffordability’.¹⁹⁷ Financial Counselling Victoria also characterised this issue as structural.¹⁹⁸

Stakeholders advocated for the development of a new ‘social tariff’ to improve energy affordability for Victoria’s most vulnerable households more generally.¹⁹⁹ VCOSS, Brotherhood of St Laurence and other social justice groups argued that a social tariff is needed because these households are avoiding energy use (to the detriment of their health) and because rising energy prices have increased debts with energy retailers.²⁰⁰ They also noted that many other countries (such as Belgium and Spain) have successfully introduced a social tariff to ensure energy costs are affordable for low-income households.²⁰¹ Figure 3.1 shows how average gas and electricity debts in Victoria increased from 2019 to 2024 while government income support has remained largely stable.

Figure 3.1 Average energy debts reported to the Victorian National Debt Helpline, 2019 to 2024



Source: Eirene Tsolidis-Noyce, David Bryant, Rory Anderson and Sarah Duane, ‘Energy affordability and the case for a social tariff’, presentation at the Financial Counselling Victoria Conference, Lorne, 9–10 October 2025, p. 7.

VCOSS explained that ‘[s]ocial housing residents could be a key focus of a social tariff’, which would target the 5–10% of energy customers unable to afford energy costs on an ongoing basis.²⁰² Key objectives would include providing these energy customers with:

- genuinely affordable energy (so that they can afford their bills long term without financial stress)

¹⁹⁷ Victorian Council of Social Service, *Submission 86*, pp. 13–14.
¹⁹⁸ Zyl Hovenga-Wauchope, *Transcript of evidence*, p. 55.
¹⁹⁹ Ibid.; David Bryant, Senior Policy and Research Officer, Brotherhood of St. Laurence, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, pp. 54–55; Rory Anderson, *Transcript of evidence*, p. 44; Victorian Council of Social Service, *Submission 86*, p. 14.
²⁰⁰ Eirene Tsolidis-Noyce, et al., ‘Energy affordability and the case for a social tariff’, paper presented at Financial Counselling Victoria Conference, Lorne, 9–10 October 2025, pp. 4–7.
²⁰¹ Ibid., pp. 13–15.
²⁰² Victorian Council of Social Service, *Submission 86*, p. 14; Rory Anderson, *Transcript of evidence*, pp. 44, 49.

- protection from energy market risks and price fluctuations (so that they can continue their payment plan long term without accruing arrears)
- a standard electrical service (which meets households' needs without risk of disconnection due to hardship).²⁰³

VCOSS argued that this would also enable general bill concessions to be refined to assist customers experiencing transitory hardship. It argued that a social tariff 'would reduce rates of financial stress experienced by Victorian consumers, and support people into a position of stability whereby they can afford costs, improving dignity and quality of life'.²⁰⁴ Zyl Hovenga-Wauchope recommended that a social tariff require as 'minimal administrative effort as possible' to make it easy for households to access.²⁰⁵

HCA did not advocate for a social tariff but did submit in favour of 'targeted subsidies for low income apartment households and social housing tenants' to be delivered through energy retailers to reduce costs.²⁰⁶ It suggested that this could be accompanied by an energy literacy program encompassing:

- How to read and understand bills
- Concessions and rebates navigation, including when and how discounts are applied
- Clear comparison tools, including "what am I paying, and what could I pay?"
- Alignment with any legislated provider information and disclosure requirement
- A simple pathway to ask for help and, where possible, to switch or escalate issues.²⁰⁷

FINDING 26: A small but significant percentage of low-income households experience persistent energy hardship despite access to energy retailer support, such as concession tariffs and payment plans.

²⁰³ Eirene Tsolidis-Noyce, et al., 'Energy affordability and the case for a social tariff', p. 11.

²⁰⁴ Victorian Council of Social Service, *Submission 86*, p. 14.

²⁰⁵ Zyl Hovenga-Wauchope, *Transcript of evidence*, p. 55.

²⁰⁶ Housing Choices Australia, *Submission 55*, p. 5.

²⁰⁷ *Ibid.*, p. 8.

Chapter 4

Overcoming technical challenges

Apartment buildings vary widely in height, age, design and construction; all these factors shape residents' ability to access renewable and affordable energy. The Committee heard consistently that while many apartment residents are keen to electrify, install solar or otherwise reduce their energy bills, technical constraints including outdated electrical infrastructure, limited roof space and insufficient network supply often present significant barriers, particularly in older and high-rise buildings.¹ Academics and experts within the sector stated that renewable energy technologies are well established and viable for use in Australia, but implementation in apartments is often constrained by technical challenges that are not present in detached housing.²

This chapter outlines the most common technical challenges affecting apartment buildings and considers how targeted policy, regulatory reform and coordinated network planning can help overcome these barriers in an equitable way.

4.1 Legacy constraints are a barrier for older apartment buildings

The Committee heard from a wide range of submitters that older apartment buildings face distinct and compounding technical challenges when seeking to install renewable energy systems or electrify (that is, replace appliances that use fossil fuels, such as gas, with electric technologies).³ Building age, design and physical condition significantly impact the renewable adoption pathways available to residents.⁴ Evidence consistently indicated that older buildings were designed to operate with much lower electrical demand and with the expectation that gas would supply heating, hot water and cooking.⁵ As a result these buildings are often poorly suited to contemporary electrification pathways without costly and complex retrofitting works to address technical challenges.⁶

1 Associate Professor Nicola Willand, et al., *Submission 27*, p. 4; Deakin University, *Submission 16*, p. 1; Strata Community Association Victoria, *Submission 78*, pp. 6–7.

2 Strata Community Association Victoria, *Submission 78*, p. 5; Smart Energy Council, *Submission 32*, p. 2; Deakin University, *Submission 16*, p. 1; Smart Energy Lab, *Submission 26*, p. 1.

3 National Electrical and Communications Association, *Submission 45*, p. 7; Let Me Be Frank, *Working with apartment and strata communities: a handbook for local governments*, report for City of Melbourne, 2025, pp. 73, 75; Owners at 43 Haines Street, *Submission 44*, p. 4.

4 National Electrical and Communications Association, *Submission 45*, p. 7; Energy Efficiency Council, *Submission 58*, p. 2.

5 Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 8; Jane Mavoa, Owners at 43 Haines Street, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 48.

6 Dr Asma Aziz and Nishadi Weerasinghe, Electric Energy Society of Australia, Western Australia Chapter, *Submission 9*, p. 3; National Electrical and Communications Association, *Submission 45*, p. 7.

Legacy constraints refer to the technical, operational and financial restrictions caused by ageing infrastructure and outdated systems that typically stem from incompatible equipment and systems that require replacement.⁷ These constraints inhibit the installation of solar and other integrated renewable technology.⁸ In older buildings, legacy system constraints are rarely isolated or linear, instead they often require coordinated upgrades across multiple interrelated systems. Submitters detailed their experiences with retrofitting projects that spanned issues with internal electrical systems, physical infrastructure, network capacity and supply from the grid, all while adhering to overarching safety and legislative requirements.⁹ As explored in Chapter 2, this process can be onerous for owners corporations (OCs) who are required to plan, coordinate and fund these critical upgrades.¹⁰ Collectively these factors increase project complexity, cost and risk for OCs, often deterring projects from progressing, even when resident support for electrification is strong.¹¹

The following sections unpack the key technical issues caused by outdated electrical infrastructure and how this is impacting the installation process, safety compliance and additional structural barriers in older buildings.

4.1.1 Outdated infrastructure and safety requirements can impede electrification

Within the broader set of legacy constraints impacting uptake in renewable energy usage, outdated electrical infrastructure emerged as a significant technical barrier. Given that gas was commonly used in Victorian homes, especially for heating and cooking, many older apartment buildings were designed without consideration for onsite renewable energy generation or broader electrification, thus increasing the cost and complexity of electrification proposals.¹² Industry peak body the National Electrical and Communications Association (NECA) explained that older buildings often require switchboard upgrades, capacity augmentation or rewiring to enable solar, battery or electrification systems to be installed safely.¹³ National peak body the Australian Sustainable Built Environment Council (ASBEC) added that legacy metering configurations that do not support energy sharing arrangements can further inhibit equitable allocation of energy generation and impede bill savings among residents.¹⁴

Despite these upgrades being essential to progressing electrification projects, many submitters experienced difficulty navigating the process due to unclear costs,

⁷ Energy Sustainability Directory, *Legacy system constraints*, (n.d.), <<https://energy.sustainability-directory.com/area/legacy-system-constraints>> accessed 12 May 2025.

⁸ Ibid.

⁹ Owners at 43 Haines Street, *Submission 44*, p. 3; Vincent Ng, *Submission 35*, p. 2.

¹⁰ Victorian Council of Social Service, *Submission 86*, p. 9.

¹¹ Australian Sustainable Built Environment Council, *Submission 23*, p. 2; Owners Corporation Network of Australia Limited, *Submission 61*, p. 9; Strata Community Association Victoria, *Submission 78*, p. 5.

¹² Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 8; Dr Asma Aziz and Nishadi Weerasinghe, *Submission 9*, p. 3.

¹³ National Electrical and Communications Association, *Submission 45*, p. 7.

¹⁴ Australian Sustainable Built Environment Council, *Submission 23*, p. 2.

long timeframes and ambiguous energy distributor rules, which create systemic bottlenecks.¹⁵ In particular, the high costs associated with electrical infrastructure upgrades can be unaffordable and prohibitive for many owners, renters and OCs seeking to electrify.¹⁶ Cameron Knox, Chief Executive Officer of solar sharing technology company Allume Energy, echoed these sentiments, advising the Committee that meter panel upgrades are the most common reason a project does not proceed in Victoria.¹⁷ He explained that the cost of upgrading metering infrastructure can often be as costly as the solar panel installation itself.¹⁸

Guy Pritchard, the Director of Programs at Solar Victoria within the Department of Energy, Environment and Climate Action (DEECA), also mentioned switchboard issues as a persistent barrier for OCs seeking to participate in the Victorian Government's Solar for Apartments Program (described in Chapter 1). He acknowledged that switchboard upgrades add a significant cost to a project and once OCs find out, they often pull out of the program. He said it is a broader barrier preventing OCs from applying for the program altogether once they realise the high upfront costs associated with the required electrical upgrades.¹⁹ Submitters noted that while there are grants available to cover solar installation costs, there is currently no funding available for whole building electrical system upgrades.²⁰

The peak body for Victoria's OC industry, Strata Community Association Victoria (SCA Vic), emphasised that these challenges are often amplified in smaller apartment buildings. This is because the fixed cost of upgrading shared electrical infrastructure is spread across fewer apartments, resulting in higher per lot cost and increased financial risk for OCs.²¹ Preliminary engineering and feasibility assessments must be funded by OCs before eligibility for grant programs can be established, often excluding older and taller buildings that cannot meet the eligibility requirements for shorter payback periods required by grant programs such as the Solar for Apartments Program.²² The cumulative impact of these constraints means that some buildings may be technically or economically incapable of cost-effective electrification and/or solar installation.²³

Building and electrical safety considerations further compound these challenges. The Committee heard that many older buildings are not wired to safely accommodate plug-in generation or increased electrical loads, raising risks around circuit overloading, unintended reverse flow of electricity back into the grid or internal circuits (known as back-feeding) and non-compliance with contemporary electrical

¹⁵ Vincent Ng, *Submission 35*, p. 1; Deakin University, *Submission 16*, p. 1; Owners at 43 Haines Street, *Submission 44*, p. 2.

¹⁶ Greater Dandenong City Council, *Submission 22*, p. 3.

¹⁷ Cameron Knox, Chief Executive Officer and Co-founder, Allume Energy, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 13.

¹⁸ Ibid.

¹⁹ Guy Pritchard, Director, Programs, Solar Victoria, Department of Energy, Environment and Climate Action, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 4.

²⁰ Dr Valerie Kay, *Submission 57*, p. 5.

²¹ Strata Community Association Victoria, *Submission 78*, p. 7.

²² Associate Professor Nicola Willand, et al., *Submission 27*, p. 4; Strata Community Association Victoria, *Submission 78*, p. 7.

²³ Strata Community Association Victoria, *Submission 78*, p. 7.

standards.²⁴ In many cases, costly upgrades to switchboards, metering infrastructure and common property wiring are required before balcony solar or induction cooktops can be installed legally and safely.²⁵

Adequate fire protection is another consideration. To protect residents from fire, modern buildings use a combination of active and passive safeguards to enable evacuation, limit the spread of fire and facilitate emergency services to enter the property.²⁶ Passive Fire Protection (PFP) systems use purposefully designed construction elements to delay or prevent the spread of fire within a building.²⁷ In older buildings, latent building defects often result in insufficient PFP systems that can create hidden upgrade barriers for OCs.²⁸ The fire risk is further heightened when switchboards, circuit breakers and electrical cable sizes become outdated and are no longer fit for purpose.²⁹

For example, the OC at 43 Haines Street has been forced to cap the amount of power residents can use to 25 amps per apartment in order to mitigate the risk of fire due to outdated internal cabling that cannot safely handle modern appliances, which use higher volumes of power.³⁰ Retrofitting to address fire safety and cabling concerns can be expensive and onerous for OCs who want to cause minimal disruption to residents during the process.³¹ Moreover, older buildings may not be designed to accommodate behind-the-meter installation meaning they would need to pay a higher upfront cost for energy generated in front of the meter.³²

As discussed in Chapter 2, OCs already face many governance challenges when seeking to implement sustainability upgrades. These issues can compound in older buildings requiring electrical infrastructure upgrades as volunteer OC committees must obtain information about their building, understand highly technical electrical systems, educate other OC members about the retrofitting process and justify the expenditure of the OC budget.³³ Furthermore, due to the age of these buildings, documentation can often be incomplete or inaccurate about legacy systems.³⁴ Dr Janette Corcoran, Board Director of the Owners Corporation Network of Australia (OCN), the largest consumer advocacy body for residential strata owners, told the Committee about unmetered

²⁴ Australian Sustainable Built Environment Council, *Submission 23*, p. 2; Sunpal, *Optimizing solar investments: mastering backfeed prevention in grid-tied PV Systems*, 2026, <<https://www.sunpalsolar.com/optimizing-solar-investments-mastering-backfeed-prevention-in-grid-tied-pv-systems>> accessed 5 May 2026.

²⁵ Australian Sustainable Built Environment Council, *Submission 23*, pp. 2–3; Collaboration on Energy and Environmental Markets, University of New South Wales, *Submission 80*, p. 2.

²⁶ Dr Nicole Johnston, *Investigating passive fire protection defects in residential buildings*, Deakin University, 2022, p. 3.

²⁷ Ibid.

²⁸ Strata Community Association Victoria, *Submission 78*, pp. 5–6.

²⁹ Associate Professor Nicola Willand, et al., *Submission 27*, p. 9.

³⁰ Owners at 43 Haines Street, *Submission 44*, p. 3.

³¹ Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 8.

³² Ibid.

³³ Victorian Council of Social Service, *Submission 86*, p. 9.

³⁴ Energy Trade Pty Ltd, *Submission 53*, p. 5; Dr Janette Corcoran, Board Director, Owners Corporation Network of Australia, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 36.

connections and misallocated supplies being discovered once works commenced due to the inaccurate or incomplete documentation available to OCs.³⁵

Moreover, many apartment residents already experience financial pressure from mortgages, rent and/or OC fees in addition to rising energy costs, and are therefore less able to absorb the upfront costs required to address legacy infrastructure constraints.³⁶ The peak body for Victoria's social and community sector, the Victorian Council of Social Service (VCOSS), echoed these concerns following reports from VCOSS member organisations that many Victorians are simply trying to make ends meet to cover existing living expenses and do not have the time or money to consider paying for solar or other appliance upgrades.³⁷

Victoria's independent infrastructure advisory body, Infrastructure Victoria, highlighted the risk of the energy transition exacerbating inequality for low-income households and renters if the benefits and costs are not evenly distributed.³⁸ As more households make the switch from gas to electricity, remaining users who are unable to electrify face rising energy costs.³⁹ These dynamics can reinforce broader inequality as apartment residents with outdated electrical infrastructure are locked out of the benefits of the energy transition.

Case Study 4.1 illustrates the additional complexities and costs that OCs of older buildings can face when trying to electrify.

Case Study 4.1 61 & 61A Haines Street, North Melbourne

The Owners Committee of 61 and 61A Haines Street provided detailed evidence of their experiences seeking to electrify a 33-unit complex constructed in 1963. Given the building was designed with gas as the dominant form of energy, the OC's electrification plans have been significantly constrained by technical barriers stemming from legacy building design and electrical infrastructure. The OC has spent upwards of \$10,000 over the past five years on feasibility studies, inspections and reports, which have identified that internal cabling and external network supply are insufficient to support electrification without major upgrades. An electrical assessment found that apartments are limited to a power capacity of 25 amps, while full electrification would require around 70 amps per dwelling. The report found that common area switchboards also need to be replaced to meet compliance regulations and three-phase network connection upgrades.

(Continued)

³⁵ Dr Janette Corcoran, *Transcript of evidence*, p. 36.

³⁶ James Parnell, *Submission 4*, p. 2; Fiona York, Executive Officer, Housing for the Aged Action Group, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 56.

³⁷ Victorian Council of Social Service, *Submission 86*, p. 4.

³⁸ Infrastructure Victoria, *Submission 20*, p. 2.

³⁹ *Ibid.*, p. 3.

Case Study 4.1 Continued

The OC completed these switchboard upgrades in January 2025 at an out-of-pocket cost of \$4,000 but cannot progress with solar or other electrification projects due to insufficient electricity supply from the grid. The OC has struggled to obtain clear information about network upgrade feasibility from their distribution network service provider (DNSP), Powercor, which charges a \$4,040 application fee, that must be applied for by an electrical contractor, to apply to access information about the area's network supply capacity. The OC would be required to pay the application and contractor fees with no guarantee that additional capacity could be provided. The OC provided a breakdown of estimated costs for the infrastructure upgrades that totalled almost \$28,000 per apartment, with a significant portion of this dedicated to network and mains cable upgrades that are estimated to cost \$330,000.

Sources: Owners Committee 61 & 61A Haines Street, *Submission 21*, pp. 4–8; Richard Keeble, Member, Owners Committee 61 and 61A Haines Street, public hearing, Melbourne, 24 March 2026, *Transcript of Evidence*, p. 49.

Unlike stand-alone dwellings, apartment buildings are governed by statutory obligations that require OCs to maintain and repair shared property through collective decision making and annual levies paid by individual owners.⁴⁰ The levy amount is set based on the anticipated costs for the year, including insurance, essential services, maintenance, utilities and professional strata management.⁴¹ This framework shapes the use of OC budgets and highlights the limited capacity for OCs to pay for additional upgrades that fall outside of planned repairs and standard maintenance. Due to their limited budgets, OCs often prioritise urgent building repairs over renewable upgrades.⁴²

Older buildings in particular have high upfront costs to address technical challenges depending on building type, design and equipment, often involving complex retrofits that can cause disruption to residents and a high financial burden on OCs.⁴³ To address this burden, Allume Energy, VCOSS and the Australian National University (ANU) Centre for Energy Systems suggested no or low-interest loans to assist OCs to pay for essential electrical works and battery installation costs without requiring the OC to raise additional special levies.⁴⁴ Similarly, the not-for-profit clean energy organisation Yarra Energy Foundation and peak clean energy industry body the Smart Energy Council also raised interest-free loans as an option to cover the cost of essential enabling works including meter panel upgrades.⁴⁵ Advocacy and research group Rewiring Australia suggested deferred low-interest loans that can be repaid once the

⁴⁰ Professor Cathy Sherry, *Submission 1, Attachment 1*, p. 5.

⁴¹ Dr Janette Corcoran, *Transcript of evidence*, p. 36.

⁴² Allume Energy, *Submission 31*, p. 1; Rod Fuller, *Submission 3*, p. 2.

⁴³ Energy Efficiency Council, *Submission 58*, p. 2.

⁴⁴ ANU Centre for Energy Systems, *Submission 73*, pp. 1–2; Victorian Council of Social Service, *Submission 86*, pp. 6, 10; Allume Energy, *Submission 31*, p. 2.

⁴⁵ Yarra Energy Foundation, *Submission 48*, p. 3; Smart Energy Council, *Submission 32*, p. 3.

property is sold with the loan amount indexed at the rate of inflation.⁴⁶ Furthermore, VCOS and SCA Vic advocated for expanded funding to cover the costs of enabling infrastructure, including substations and switchboards.⁴⁷

FINDING 27: It is technically difficult and expensive for older buildings to electrify and install solar due to building design, outdated electrical wiring and switchboards, and safety requirements that involve costly and complex retrofitting. In some cases, these barriers are financially prohibitive.

4.1.2 Structural and space constraints can limit renewable energy installation and effectiveness

4

Apartment buildings can face structural and spatial constraints distinct from detached housing that limit electrification pathways and solar project feasibility. These challenges are particularly pronounced in older building stock where ageing roofs, façades and other structural issues require ongoing upkeep and maintenance.

Rooftop solar installation in particular has been delayed or prevented due to issues with roof condition and accessibility, limited sunlight, heritage overlays, roof weight capacity and lack of space for new infrastructure (such as cables, batteries and charging facilities).⁴⁸ Environment Victoria, an independent not-for-profit community group, reported members' difficulties in obtaining approval for external heat pump and air-conditioning units, with cited concerns including aesthetics, noise, heritage requirements and building appearance.⁴⁹ Embedded network operator Energy Trade underscored the impact physical and design constraints can have on solar uptake, including congested roof layouts, structural load limitations and design changes that reduce a building's capacity for solar.⁵⁰ These structural and site-specific constraints limit the feasibility of renewable energy installations and can deter OCs from pursuing options to access clean energy.

Building regulations and OC rules can further limit the installation of renewable energy systems due to concerns about structural loading, wind exposure, fire safety and façade integrity.⁵¹ OCN highlighted that rooftop installations can introduce ongoing maintenance risks and shared liabilities, which must be carefully managed by OCs.⁵² These include restricted roof access for repairs, conflicts with roof membrane warranties and misalignment between the lifespan of solar systems and existing building assets, which may necessitate costly removal and reinstallation.⁵³ In a strata context, where

⁴⁶ Rewiring Australia, *Submission 56*, p. 2.

⁴⁷ Victorian Council of Social Service, *Submission 86*, p. 10; Pernille Cavanough, President, Strata Community Association Victoria, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 41.

⁴⁸ Environment Victoria, *Submission 42*, p. 6; Professor Cathy Sherry, *Submission 1, Attachment 1*, p. 8.

⁴⁹ Environment Victoria, *Submission 42*, p. 6.

⁵⁰ Energy Trade Pty Ltd, *Submission 53*, p. 5.

⁵¹ Australian Sustainable Built Environment Council, *Submission 23*, p. 3.

⁵² Owners Corporation Network of Australia Limited, *Submission 61*, pp. 9–10.

⁵³ Ibid.

maintenance and repair costs are shared across all owners, these factors can increase financial risk and contribute to greater hesitancy in progressing renewable energy projects.⁵⁴

The Committee also heard that many structural constraints only become apparent once OCs have begun investigating projects and incurred the costs of feasibility studies and technical assessments. Social change consultancy group Let Me Be Frank said:

One of the most exhausting and demoralising experiences for owners corporation committees is investing significant time, energy, and money exploring solar only to discover late in the process that their building is not feasible for installation.⁵⁵

Environment Victoria similarly reported that perceived or actual site constraints can discourage OCs from progressing investigations or committing funds to feasibility studies, meaning potentially viable projects may not proceed to a formal proposal or vote.⁵⁶ Moreover, peak body the Energy Efficiency Council highlighted that there is limited public data available about the average costs of apartment building energy upgrades, leading to ‘information asymmetries and higher costs’.⁵⁷

FINDING 28: Owners corporations have limited budgets and are risk averse, meaning they typically prioritise urgent maintenance repairs over renewable energy projects, especially if the building is older and when the economic benefits of solar are uncertain.

FINDING 29: Electrification pathways are unclear for owners corporations, making it difficult for them to determine whether their building is suitable for electrification without paying for costly and time-consuming feasibility assessments.

RECOMMENDATION 9: That the Victorian Government consider establishing means-tested financial assistance to support critical front-of-meter electrical infrastructure upgrades (such as switchboards and wiring, excluding infrastructure behind the meter) that enable rooftop solar, batteries and electrification in apartments. This should include feasibility assessments and technical advice for owners corporations.

4.2 Taller apartment buildings pose height and density challenges

The Committee heard that taller buildings housing more people face a distinct set of technical challenges that can limit access to renewable and affordable energy. According to 2021 Census data, over half a million Australians lived in a building with

⁵⁴ Ibid.

⁵⁵ Let Me Be Frank, *Submission 85*, pp. 4–5.

⁵⁶ Environment Victoria, *Submission 42*, p. 6.

⁵⁷ Energy Efficiency Council, *Submission 58*, p. 2.

nine storeys or more, defined as a high-rise, with this number expected to continue growing.⁵⁸ Research for the City of Sydney found that high-rise buildings consume an average of 38% more electricity per square metre compared with low or mid-rise buildings and 25% more than stand-alone dwellings.⁵⁹ Despite this high energy demand, electrification in medium and high-rise buildings is lagging behind due to compounding technical challenges and policy settings that largely exclude this cohort of residents from the benefits of cheaper and cleaner energy.⁶⁰

Solar Citizens, an independent renewable energy community organisation, surmised that high-rise apartments are more challenging to electrify due to three key factors: higher energy consumption arising from common property and shared facilities (such as lifts, lighting, pools and gyms); lack of available roof space to generate sufficient energy onsite; and governance challenges associated with shared ownership.⁶¹ These factors have contributed to lower rooftop solar penetration in suburbs with a high concentration of high-rise apartments, such as Southbank, Docklands and the central business district (CBD) in the City of Melbourne, compared with suburbs in other local government areas (LGAs).⁶²

As mentioned in Chapter 1, the City of Melbourne has the highest population density in Victoria, yet it has only installed one quarter of its potential solar capacity compared with the average Victorian LGA.⁶³ This growing disparity is impacting residents living in medium and high-rise buildings who are effectively locked out of the bill savings, energy resilience and reduced emissions benefits that come from rooftop solar.⁶⁴

In addition to existing governance issues outlined in Chapter 2, the Committee also heard that the increased number of lot owners in high-rise buildings can make building-wide upgrades more difficult to implement. The City of Melbourne noted the challenge of coordinating agreement among larger buildings, telling the Committee at a public hearing:

You could just imagine the coordination of a 500-lot super high-rise building: how you get 75 per cent of owners to agree on any single thing let alone sustainability is an immense challenge.⁶⁵

A key factor underpinning these technical challenges is the physical limitation of roof space relative to the number of dwellings in taller buildings, as discussed below.

⁵⁸ Solar Citizens, *Submission 72*, p. 2.

⁵⁹ Pitt & Sherry, *Energy Efficiency Master Plan: foundation report*, report for City of Sydney, February 2015, p. 71.

⁶⁰ City of Melbourne, *Submission 84*, p. 13.

⁶¹ Solar Citizens, *Submission 72*, p. 2.

⁶² City of Melbourne, *Submission 84*, p. 5.

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ Liam Henderson, Manager, Zero Carbon Community, City of Melbourne, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 33.

4.2.1 Shading and limited roof space can restrict solar on high-rise buildings

Many submitters identified inadequate rooftop space and shading as fundamental constraints on renewable energy generation. The Green Building Council of Australia, which advocates for the sustainable transformation of the built environment, told the Committee that many existing apartment buildings were not designed to accommodate renewables and have less surface area to utilise compared with stand-alone dwellings.⁶⁶ Submitters argued that available roof space is often occupied by essential infrastructure, including heating, ventilation and air conditioning (HVAC) systems, lift facilities and plant rooms, as well as shared amenities such as rooftop gardens, pools and recreational facilities, leaving limited space for solar installations.⁶⁷

The Committee also heard that shading from surrounding buildings and site-specific conditions can further reduce solar yield and system performance.⁶⁸ Submitters noted that this can limit the cost-effectiveness of installations and make it difficult to achieve outcomes comparable to those available in detached housing.⁶⁹ ASBEC and Professor Rebecca Yang, a renewable energy expert from The University of Melbourne, agreed that as the number of dwellings increases, the potential generation per apartment decreases substantially, reducing the economic benefits available to individual households.⁷⁰ These physical limitations result in apartment residents being far more dependent on offsite renewables and unable to take advantage of opportunities for bill savings from behind-the-meter energy generation and self-consumption.⁷¹ By comparison, the City of Boroondara noted that townhouses typically have more roof space available for solar panels per dwelling, which enables a clearer allocation of rooftop space for each household and allows for more viable generation capacity.⁷²

Many high-rise buildings are currently excluded from participating in the energy transition through conventional pathways as existing government program and policy settings are largely geared towards lower density buildings that can generate enough rooftop solar onsite to supply residents.⁷³

These physical constraints also have implications for meeting regulatory requirements. The Property Council of Australia, which represents the nation's property sector, highlighted that limited roof space in high-rise buildings can make it difficult to meet recently legislated onsite generation requirements for new embedded networks,

⁶⁶ Green Building Council of Australia, *Submission 77*, p. 3.

⁶⁷ Collaboration on Energy and Environmental Markets, *Submission 80*, p. 1; Greater Dandenong City Council, *Submission 22*, p. 3; ClearVue Technologies Ltd, *Submission 68*, p. 6; Smart Energy Lab, *Submission 26*, p. 9.

⁶⁸ Clean Energy Council, *Submission 66*, p. 4; ClearVue Technologies Ltd, *Submission 68*, p. 9; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 15.

⁶⁹ Clean Energy Council, *Submission 66*, p. 4; City of Melbourne, *Submission 84*, p. 11.

⁷⁰ Australian Sustainable Built Environment Council, *Submission 23*, p. 2; Professor Rebecca Yang, *Submission 38*, p. 2.

⁷¹ Professor Rebecca Yang, *Submission 38*, p. 2.

⁷² City of Boroondara, *Submission 71*, p. 11.

⁷³ Guy Pritchard, *Transcript of evidence*, p. 3.

noting a mismatch between policy expectations and the practical capacity of taller buildings.⁷⁴ This is explored further in Chapter 3.

The Collaboration on Energy and Environmental Markets (CEEM) at the University of NSW and VCOSS submitted that rooftop solar systems in high-rise buildings are more suited to supplying common property loads, such as lifts and lighting, if they cannot meet individual household energy consumption.⁷⁵ Moreover, the Energy Efficiency Council believed that energy performance upgrades, electrification and battery storage would be more beneficial for residents in taller buildings.⁷⁶

Despite limited roof space, the Green Building Council of Australia noted that apartment residents can still benefit from policies that improve access to renewable energy, even in high-rise settings.⁷⁷ The City of Melbourne similarly indicated that these constraints highlight the need for more tailored supports for medium and high-rise residents.⁷⁸ The following sections explore these opportunities and outline pathways to overcome the technical challenges identified.

FINDING 30: Limited roof space, poor roof conditions and space trade-offs for shared amenities significantly restrict the capacity of apartment buildings to install conventional rooftop solar systems.

FINDING 31: Residents in high-rise buildings cannot access the same benefits or bill savings from rooftop solar due to limited energy-generation capacity per household compared with stand-alone dwellings or smaller buildings.

4.3 Opportunities to increase renewable energy in older and taller apartment buildings

The Committee heard that without targeted reform, the apartment sector will continue to experience slower progress in emissions reduction and energy transition outcomes compared with detached housing.⁷⁹ Evidence indicated there is no one-size-fits-all approach to overcoming technical challenges; they require a multi-pronged and tailored approach to ensure buildings of all ages and sizes can participate in the energy transformation. David McElrea, Chief Advocacy Officer at the Smart Energy Council, advised that it would be rare that you could not find an innovative

⁷⁴ Property Council of Australia, *Submission 75*, p. 6.

⁷⁵ Collaboration on Energy and Environmental Markets, *Submission 80*, p. 2; Victorian Council of Social Service, *Submission 86*, p. 2.

⁷⁶ Energy Efficiency Council, *Submission 58*, p. 2.

⁷⁷ Green Building Council of Australia, *Submission 77*, p. 5.

⁷⁸ City of Melbourne, *Submission 84*, p. 12.

⁷⁹ HIP V. HYPE and Get Off Gas, *Submission 46*, p. 5.

technological solution to enable apartment residents to access the benefits of renewable energy.⁸⁰

Many submitters recommended expanding existing programs to provide tailored electrification pathways, advice and support that effectively caters to different building heights and number of households.⁸¹ The following section explores how these programs can be improved to expand access and address current gaps.

4.3.1 Current program eligibility settings exclude a large cohort of apartments

Solar Victoria is responsible for the management of the Victorian Government's Solar for Apartments Program. As mentioned in Chapter 1, the program opened in February 2024 and provides eligible applicants rebates of up to \$2,800 per household (up to a maximum of \$140,000 per property) to install rooftop solar systems that supply power to a minimum of five and a maximum of 50 lots.⁸² Many submitters praised the program for recognising the inherent challenges faced by the apartment cohort in accessing renewable energy and addressing the prohibitive installation costs associated with rooftop solar.⁸³ However, current eligibility criteria prohibits buildings over eight storeys tall or more than 50 lots from participating.

Solar Victoria explained to the Committee at a public hearing that eligibility settings are designed to ensure there is sufficient solar being generated per apartment (roughly 1 kilowatt (kW) per apartment).⁸⁴ Guy Pritchard from Solar Victoria said that buildings over eight storeys and more than 50 apartments do not generate the volume or quantity of solar needed to make the installation viable for residents.⁸⁵ Across the three rounds of the program delivered, Solar Victoria found that three-storey buildings with around 20 apartments were the 'sweet spot' for the program, accounting for the majority of the 141 installations to date.⁸⁶ Academics from RMIT University believe that around two in five apartments in Victoria are ineligible for the program due to being in a high-rise building or having pre-existing systems.⁸⁷

Moreover, the program currently requires applicants to demonstrate a 10-year payback period as evidence of demand within the building seeking to add solar.⁸⁸ Some submitters argued that older and larger apartment buildings are unfairly excluded from the program given they do not have the electrical capacity, infrastructure or roof space to utilise/generate higher amounts of energy and meet the payback eligibility

⁸⁰ David McElrea, Chief Advocacy Officer, Smart Energy Council, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 4.

⁸¹ Let Me Be Frank, *Submission 85*, p. 2; City of Melbourne, *Submission 84*, p. 20; Owners Corporation Network of Australia Limited, *Submission 61*, p. 11.

⁸² Solar Victoria, *Solar for Apartments presentation*, supplementary evidence received 30 April 2026, p. 7.

⁸³ Smart Energy Council, *Submission 32*, p. 3; Master Electricians Australia, *Submission 41*, p. 4.

⁸⁴ Guy Pritchard, *Transcript of evidence*, p. 3.

⁸⁵ Ibid.; Solar Victoria, *Solar for Apartments presentation*, p. 11.

⁸⁶ Guy Pritchard, *Transcript of evidence*, p. 4.

⁸⁷ Associate Professor Nicola Willand, et al., *Submission 27*, p. 9.

⁸⁸ Solar Victoria, *Solar for Apartments presentation*, p. 8.

requirements.⁸⁹ As mentioned in Section 4.1.1, the OC at 43 Haines Street had to enforce a 25-amp limit to mitigate electrical safety risks in their ageing building, consequently making them ineligible for the program and further highlighting the paradoxical issues with outdated infrastructure and exclusionary program settings.⁹⁰

4.3.2 How program eligibility can be expanded to reach more apartment buildings

Current eligibility settings have resulted in a large cohort of apartment residents, predominantly living in high-rise, older and complex buildings, being effectively locked out of accessing government support for rooftop solar. As discussed throughout this chapter, many of these excluded buildings are also those facing the greatest technical barriers.

Submitters advocated for the development of programs and incentives that are better tailored to the diversity of the apartment sector, including through broadened eligibility requirements of the Solar for Apartments Program.⁹¹ The Clean Energy Council, which represents renewable energy businesses, emphasised the importance of expanding and scaling the program through targeted incentives, higher grant caps for complex buildings and dedicated renter/social housing streams. It also suggested funding and market arrangements for batteries to enable apartment residents to participate in virtual power plants.⁹² Virtual power plants are further discussed in Chapter 5.

Smart Energy Lab, which provides product evaluation and testing for solar power and energy storage, advocated for creating a ‘high complexity’ stream that builds on the Solar for Apartments Program’s existing exemption pathway to provide tailored advice and assistance to larger buildings.⁹³ It suggested the stream also include buildings that require additional works, including switchboards, electrical wiring, load capacity or specialist engineering, to enable access to renewable energy sources.⁹⁴

Nightingale Housing, a not-for-profit housing developer, recommended the program include new developments that exceed the minimum energy standard, while embedded network operator Energy On submitted that embedded networks should be able to access government supports.⁹⁵ Moreover, to allow more buildings to participate in the program, Allume Energy and Yarra Energy Foundation supported removing caps on the number of apartments and property valuation used for eligibility.⁹⁶ Alongside

⁸⁹ Owners at 43 Haines Street, *Submission 44*, p. 5; Associate Professor Nicola Willand, et al., *Submission 27*, p. 4.

⁹⁰ Owners at 43 Haines Street, *Submission 44*, p. 3.

⁹¹ City of Melbourne, *Submission 84*, pp. 23–24; Associate Professor Nicola Willand, et al., *Submission 27*, p. 9; Smart Energy Council, *Submission 32*, p. 1; Green Building Council of Australia, *Submission 77*, p. 4; Property Council of Australia, *Submission 75*, p. 9.

⁹² Clean Energy Council, *Submission 66*, p. 7; Morgan Rossiter, General Manager, Distributed Energy, Clean Energy Council, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 12.

⁹³ Smart Energy Lab, *Submission 26*, p. 9.

⁹⁴ Ibid.

⁹⁵ Nightingale Housing, *Submission 28*, p. 1; Energy On, *Submission 59*, p. 1.

⁹⁶ Allume Energy, *Submission 31*, p. 2; Yarra Energy Foundation, *Submission 48*, p. 3.

calls to widen eligibility, many submitters emphasised the importance of extending the program beyond the end of round three in April 2027. The Smart Energy Council advocated for a stepped-down incentive model from 2027 to 2030—where the level of rebate reduces each year—to create market urgency and provide a clear transition pathway for the industry.⁹⁷ The Green Building Council of Australia also supported increasing the number of rebates available and including larger buildings in the program; it also suggested allowing participation from community housing organisations and public housing providers.⁹⁸

In addition to expanding existing programs, the City of Melbourne reiterated the importance of trials, pilots and active research projects that consider the unique factors present in the apartment sector to inform future programs, including:

- building size (low, medium, high, super-high rise)
- building age and remaining asset life
- OC tier (category based on number of lots, as explained in Chapter 1)
- configuration of building services (centralised vs individual) and asset life cycle
- embedded network infrastructure
- OC governance capacity and financial reserve.⁹⁹

FINDING 32: The design and eligibility criteria of the Solar for Apartments Program are excluding residents in older, larger and more complex apartment buildings from accessing support to install residential solar.

RECOMMENDATION 10: That the Victorian Government extend the Solar for Apartments Program beyond April 2027 with expanded eligibility criteria and program settings that target larger and more complex apartment buildings.

4.3.3 Battery storage systems are essential to maximise the benefits of rooftop solar

The Committee heard that while rooftop solar provides an important foundation for renewable energy uptake in apartment buildings, its effectiveness is significantly constrained without complementary systems that can store excess energy for later use.¹⁰⁰ This issue is particularly pronounced in larger and taller buildings where roof space and solar generation is already limited.

⁹⁷ Smart Energy Council, *Submission 32*, p. 1.

⁹⁸ Green Building Council of Australia, *Submission 77*, p. 4.

⁹⁹ City of Melbourne, *Submission 84*, p. 20.

¹⁰⁰ Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 13; Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 5; Master Electricians Australia, *Submission 41*, p. 4.

Submitters agreed there is a mismatch in energy demand and generation. Solar panels generate the most electricity during the middle of the day when sunlight is strongest, but demand is typically lowest because many people are at work, school or out of the house, therefore using less energy.¹⁰¹ Battery systems enable households to bridge the gap between generation and consumption by storing excess energy produced during the day for use later at night when energy consumption typically peaks.¹⁰²

In stand-alone dwellings, Solar Victoria found households that have rooftop solar use around 25% of energy generated, whereas systems with a battery use around 50–60%.¹⁰³ Certain batteries can also be managed to send excess energy to the grid during peak times, simultaneously supporting network stability and optimising individual consumption during the day to lower household energy bills.¹⁰⁴ Independent environmental not-for-profit organisation, the Climate Council, asserted that including batteries alongside rooftop solar can boost bill savings by up to \$800 per year, compared with stand-alone solar systems.¹⁰⁵

While freestanding houses use individual household batteries, the Committee heard that shared systems are more effective in an apartment context. Professor Rebecca Yang noted that batteries are most financially effective when they are deployed as shared infrastructure at a whole building or neighbourhood scale.¹⁰⁶ The Commissioner for Residential Tenancies supported this approach, emphasising that neighbourhood or building-wide batteries can increase consumption by storing excess energy generated during the day in communal batteries that can be used during peak demand periods.¹⁰⁷ Case study 4.2 provides a Melbourne example detailing the benefits of community batteries.

¹⁰¹ Solar Victoria, *Is a solar battery right for your home?*, <<https://www.solar.vic.gov.au/solar-battery-right-your-home>> accessed 1 June 2026; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. ii.

¹⁰² Solar Victoria, *Is a solar battery right for your home?*

¹⁰³ Ibid.

¹⁰⁴ Francis Vierboom, Chief Executive Officer, Rewiring Australia, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 20; Master Electricians Australia, *Submission 41*, p. 4.

¹⁰⁵ Climate Council, *Home batteries in Australia explained*, 30 June 2025, <<https://www.climatecouncil.org.au/resources/home-batteries-in-australia-explained>> accessed 1 June 2026.

¹⁰⁶ Professor Rebecca Yang, *Submission 38*, p. 6.

¹⁰⁷ Commissioner for Residential Tenancies, *Submission 82*, p. 2.

Case Study 4.2 Power Melbourne community battery project

The City of Melbourne's Power Melbourne Project has installed a network of three community batteries around the city to increase access to renewable energy. The batteries are located at the Library at the Dock, Docklands; the Boyd Community Hub, Southbank; and Council House on Russell Place, Melbourne CBD.

Each battery unit is about the size of four single-door fridges. These Pixii Powershaper 2 batteries are networked to provide 1.1 MWh storage capacity. This is equivalent to approximately 85 home batteries.

The batteries are connected to onsite solar panels and the grid. They absorb energy on sunny days and release it back into the grid when it is needed most, to generate revenue and reduce emissions.

In its current pilot phase, revenue generated by the batteries will go towards a community benefit fund that will support local renewable projects. Following this, the batteries will be linked to a retail electricity plan to help renters and people living in apartments to access cheaper and cleaner energy.

Sources: Community Housing Industry Association Victoria, *Submission 69*, p. 7; City of Melbourne, *Power Melbourne community batteries*, factsheet, pp. 1–2.

According to Solar Victoria metrics, 65% of Solar for Apartments Program projects opted for solar sharing technology, underscoring the potential benefit of whole-building storage systems.¹⁰⁸

The Committee heard that community and building-level batteries are well suited to larger and older apartments that face physical and technical constraints. NECA highlighted that community batteries are particularly suited to buildings that cannot install solar at sufficient scale or host their own battery storage system.¹⁰⁹ Moreover, shared battery systems can enable participation without requiring individual household infrastructure, lowering barriers to entry for residents and enabling broader participation for a mixed tenure of strata households.¹¹⁰

Analysis from the Electric Energy Society of Australia's Western Australia Chapter found that centralised battery systems at a building level outperform individual systems by improving self-consumption and grid independence by aggregating demand.¹¹¹ Evidence also demonstrated that shared storage systems can deliver significant system-wide benefits by reducing exposure to peak demand pricing and lowering operational costs.¹¹²

¹⁰⁸ Solar Victoria, *Solar for Apartments presentation*, p. 11.

¹⁰⁹ National Electrical and Communications Association, *Submission 45*, p. 6.

¹¹⁰ Ibid.

¹¹¹ Dr Asma Aziz and Nishadi Weerasinghe, *Submission 9*, p. 2.

¹¹² Ibid., p. 4; National Electrical and Communications Association, *Submission 45*, p. 6.

Despite the benefits of community batteries and shared storage systems, they are often not financially viable for apartment residents without subsidies. The Electric Energy Society of Australia noted that:

both front of the meter (FTM) and behind the meter (BTM) battery storage models currently require substantial financial support ... FTM systems ... necessitate external grants covering approximately 75% to 95% of initial investment costs.¹¹³

FINDING 33: Shared battery storage systems are more effective in apartment settings than individual batteries and can maximise self-consumption, support grid stability and equitably reduce household bills when deployed at a building and precinct level.

4

Stakeholders advocated for regulatory and market reform to facilitate ‘smart’ collective energy sharing models and financial support to scale up the deployment of batteries for apartment buildings.¹¹⁴ Professor Yang told the Committee that current market and regulatory frameworks are largely geared towards individual households, rather than collective energy sharing models.¹¹⁵ She advocated for developing financial tools that support investment in alternative technology pathways that can be scaled for individual building and precinct levels.¹¹⁶

Multiple stakeholders highlighted the potential benefits of shared energy storage for apartment buildings, particularly when utilised at community scale to deliver demand reduction and grid support.¹¹⁷ CEEM at the University of NSW and Professor Yang advocated for expanding government programs to provide targeted financial support for shared batteries and energy management systems.¹¹⁸ Academics from RMIT University similarly advocated for additional resources to fund research and incentives into emerging battery technology and demand management systems that can harness energy storage across whole buildings.¹¹⁹

Deakin University urged the Victorian Government to implement targeted pilot programs that combine rooftop solar, shared battery storage, smart load management systems and streamlined network connection guidelines.¹²⁰ This pilot evidence could then be used to inform scalable solutions and reduce the perceived risk for OCs and energy distributors.¹²¹

¹¹³ Dr Asma Aziz and Nishadi Weerasinghe, *Submission 9*, p. 2.

¹¹⁴ Professor Rebecca Yang, Department of Infrastructure Engineering, University of Melbourne, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 23; Collaboration on Energy and Environmental Markets, *Submission 80*, p. 4; Associate Professor Nicola Willand, School of Property, Construction and Project Management, RMIT University, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 22; Infrastructure Victoria, *Submission 20*, p. 3; Smart Energy Lab, *Submission 26*, p. 14; Master Electricians Australia, *Submission 41*, p. 4.

¹¹⁵ Professor Rebecca Yang, *Transcript of evidence*, p. 23.

¹¹⁶ Ibid.

¹¹⁷ Infrastructure Victoria, *Submission 20*, p. 3; Smart Energy Lab, *Submission 26*, p. 14; Master Electricians Australia, *Submission 41*, p. 4; Visionary Design Development, *Submission 54*, p. 3.

¹¹⁸ Collaboration on Energy and Environmental Markets, *Submission 80*, p. 4; Professor Rebecca Yang, *Submission 38*, p. 9.

¹¹⁹ Associate Professor Nicola Willand, et al., *Submission 27*, p. 4.

¹²⁰ Deakin University, *Submission 16*, p. 2.

¹²¹ Ibid.

RECOMMENDATION 11: That the Victorian Government incorporate battery storage systems into the Solar for Apartments Program to maximise the effectiveness of rooftop solar.

RECOMMENDATION 12: That the Victorian Government develop future programs that are explicitly designed to encourage building-level and precinct-scale renewable energy storage and shared energy management solutions for apartment buildings.

Beyond the use of shared storage systems, the Committee heard about the emerging use of building integrated photovoltaics (BIPV) to provide complementary generation options for buildings unable to rely on traditional rooftop solar. This is covered in the next section.

4.3.4 How building integrated photovoltaics can expand access

The Committee heard that expanding renewable energy generation beyond rooftop systems is critical for apartment buildings where building characteristics constrain space or have shading impacts. Complementary technologies, including BIPV and façade-mounted solar, can expand generation capacity by utilising additional building surfaces.¹²²

As Chapter 1 described, BIPV are materials that can generate solar electricity as well as serve construction functions such as window glazing, weatherproofing, insulation and architectural finishes.¹²³ Examples include solar windows, skylights, roof tiles and external cladding.¹²⁴ BIPV often utilise flexible photovoltaic materials, which can be less efficient and require replacing sooner than traditional rooftop solar panels.¹²⁵ However, the efficiency and cost of BIPV are continuing to improve through technological innovation.¹²⁶

BIPV can be integrated with rooftop solar or installed independently. Stand-alone BIPV have advantages over traditional rooftop solar, including extending the building surfaces that can be used to generate electricity, potentially lowering the cost of construction and providing aesthetic or architectural benefits.¹²⁷ As building height increases, the potential benefits of BIPV also increase.¹²⁸ As BIPV retailer ClearVue Technologies observed, 'façades present orders-of-magnitude more surface area for

¹²² Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, pp. 4–5.

¹²³ ClearVue Technologies Ltd, *Submission 68*, p. 6; Associate Professor Nicola Willand, et al., *Submission 27*, p. 3.

¹²⁴ Associate Professor Nicola Willand, et al., *Submission 27*, pp. 3, 15; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 4.

¹²⁵ Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 6.

¹²⁶ ClearVue Technologies Ltd, *Submission 68*, p. 10.

¹²⁷ Associate Professor Nicola Willand, et al., *Submission 27*, pp. 3, 15; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 4.

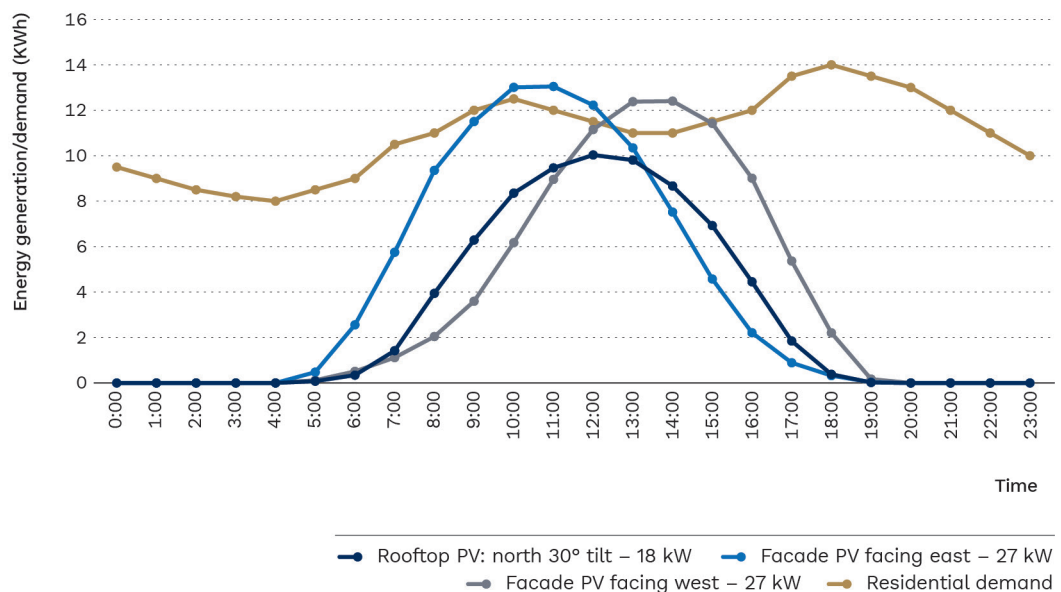
¹²⁸ Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 4.

harvesting solar energy as buildings grow taller'.¹²⁹ It also noted that the roof space of taller buildings is typically crowded with infrastructure such as cooling towers and lift overruns.¹³⁰

Where BIPV are integrated with rooftop solar, they can significantly increase the amount of solar electricity generated. Professor Yang explained that vertically installed BIPV, facing east and west, increase electricity yields by capturing early morning, late afternoon and winter sunlight when the altitude of the sun is lower.¹³¹ ClearVue Technologies said that other benefits of BIPV include, 'reduced peak demand contributions, improved alignment of generation with daytime consumption patterns, and reduced reliance on grid imports during working hours when common-area loads are highest'.¹³²

Figure 4.1 outlines the energy generation profiles of different systems (rooftop, east facing façade and west facing façade) and compares these with the residential demand for energy over 24 hours.

Figure 4.1 Rooftop and façade solar energy generation and residential energy demand at each hour of the day (average over a whole year)



Source: Adapted from Professor Rebecca Yang, *Submission 38*, p. 2

Professor Jian Zuo and his colleagues from Adelaide University emphasised that rooftop and façade systems must be combined with storage to address the mismatch between generation and demand and ensure equitable outcomes for residents.¹³³ Figure 4.1 illustrates this mismatch where energy consumption peaks after 7 pm but

¹²⁹ ClearVue Technologies Ltd, *Submission 68*, p. 6.

¹³⁰ Ibid.

¹³¹ Professor Rebecca Yang, *Submission 38*, p. 2.

¹³² ClearVue Technologies Ltd, *Submission 68*, pp. 12–13.

¹³³ Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 13.

generation levels fall as the panels are no longer producing energy, underscoring the need for battery storage systems.

BIPV can be incorporated into existing buildings by replacing the existing façade or by installing it over the top. However, submitters noted that retrofitting is complicated and costly.¹³⁴ The City of Boroondara suggested that BIPV are better suited to new builds where the design and construction phase can ensure that the dual functions of BIPV (as construction and solar material) are better utilised.¹³⁵

While the Committee predominately heard about BIPV, some submitters also mentioned façade-mounted (rather than façade-integrated) solar as an alternative to conventional rooftop solar. In particular, façade-mounted solar is more viable as a retrofitting option and can enable residents to continue benefiting from existing infrastructure that occupies the rooftop like pools, communal facilities or gardens.¹³⁶ Figure 4.2 is a photo of a 1970s apartment building in Berlin, Germany, which shows façade-mounted solar.

Figure 4.2 Apartment building with façade-mounted solar, Wohnpark Mariendorf, Berlin, Germany



Source: George & Fethers, *Submission 79*, p. 22.

¹³⁴ Collaboration on Energy and Environmental Markets, *Submission 80*, p. 3; City of Boroondara, *Submission 71*, p. 9; George Fethers & Co., *Submission 79*, p. 16; Property Council of Australia, *Submission 75*, p. 4.

¹³⁵ City of Boroondara, *Submission 71*, p. 9.

¹³⁶ Professor Rebecca Yang, *Submission 38*, p. 2; George Fethers & Co., *Submission 79*, pp. 13–16.

In Victoria (and Australia more broadly), the use of BIPV in residential buildings is still maturing with uptake primarily confined to commercial applications, including ‘curtain walls’, balustrades and other façade elements in office buildings.¹³⁷ Academics from RMIT University reported that as of February 2026, BIPV have been incorporated into 18 commercial buildings and two residential buildings in Australia.¹³⁸ Case Study 4.3 presents a Melbourne example.

Stakeholders argued that increasing the use of BIPV in residential buildings would significantly increase apartment residents’ access to renewable energy, particularly those living in mid- and high-rise buildings.¹³⁹ ClearVue Technologies provided an example:

A typical 10-storey apartment tower may have 8 to 10 times more façade surface area than roof area, making the vertical envelope the dominant generation opportunity ... The modelling ... demonstrates that for a standard 75 sqm [square metre] Melbourne apartment, a generating surface area of approximately 29.6 sqm across vision glass, cladding and balustrades can supply 100 per cent of household energy demand.¹⁴⁰

Professor Yang also argued that coupled rooftop solar and BIPV ‘offers a realistic pathway to materially scale on-site generation for high-rise precincts’.¹⁴¹ She observed that the complementary generation profiles of these technologies ‘aligns well with typical residential electricity demand patterns in apartment buildings, which commonly exhibit higher demand during morning and evening periods’.¹⁴²

Other stakeholders noted that BIPV is successfully deployed in residential buildings internationally, for example, in Germany, the Netherlands and Denmark.¹⁴³ Professor Jian Zuo et al. argued that scaling up BIPV in residential buildings will substantially increase the renewable energy being generated by Australia’s apartment buildings and townhouses:

If BIPV were adopted for apartments and townhouses, the effective PV collection area could be further increased by 39.0 million m² (100%) and 28.6 million m² (136%), respectively.¹⁴⁴

¹³⁷ Associate Professor Nicola Willand, et al., *Submission 27*, p. 16; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 4; ClearVue Technologies Ltd, *Submission 68*, p. 5; George Fethers & Co., *Submission 79*, p. 3; Property Council of Australia, *Submission 75*, p. 4.

¹³⁸ Associate Professor Nicola Willand, et al., *Submission 27*, p. 16.

¹³⁹ Professor Rebecca Yang, *Submission 38*, pp. 2–3, 5; ClearVue Technologies Ltd, *Submission 68*, p. 12.

¹⁴⁰ ClearVue Technologies Ltd, *Submission 68*, p. 12.

¹⁴¹ Professor Rebecca Yang, *Submission 38*, p. 5.

¹⁴² *Ibid.*, p. 3.

¹⁴³ George Fethers & Co., *Submission 79*, pp. 9–11; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 5; Associate Professor Nicola Willand, et al., *Submission 27*, p. 16.

¹⁴⁴ Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 5.

Case Study 4.3 Building integrated photovoltaics in a Melbourne commercial setting

An office building at 550 Spencer Street in West Melbourne was one of the first in Australia to incorporate BIPV when it was completed in 2024.

Designed by Pete Kennon, the building incorporates a 144 kWp (kilowatt peak) solar system containing 1,200 solar panels into a curtain wall façade. The system produces 76,000 kWh (kilowatt hours) annually, which is enough to meet 100% of the onsite demand for energy, or the energy requirements of 22–23 average Australian apartments.

Figure 4.3 550 Spencer St, West Melbourne with curtain wall façade solar



Source: George Fethers & Co, *Submission 79*, p. 18.

Sources: George Fethers & Co, *Submission 79*, p. 18; Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 6; Australian Institute of Architects, *550 Spencer Street—catching the sun: Kennon*, <<https://www.architecture.com.au/archives/awards/550-spencer-street-catching-the-sun-kennon>> accessed 1 June 2026.

Evidence suggested that better regulatory recognition of BIPV and accreditation as both a construction and renewable energy product will support its wider use in residential buildings and across the commercial sector.¹⁴⁵ Academics from RMIT

¹⁴⁵ Associate Professor Nicola Willand, et al., *Submission 27*, p. 6; ClearVue Technologies Ltd, *Submission 68*, p. 14; Professor Rebecca Yang, *Submission 38*, p. 9.

University reported that a lack of standardised procedures for incorporating BIPV into new buildings is currently ‘resulting in largely bespoke projects with varying integration methods’.¹⁴⁶ BIPV building supplier George Fethers & Co said that this is driving inconsistent National Construction Code (NCC) compliance processes.¹⁴⁷ It reported that projects with similar BIPV installations are not being consistently assessed by building surveyors, often resulting in varying NCC compliance outcomes. Some projects were immediately approved by building surveyors, while others were only accepted after an appeals process or rejected altogether despite following the same compliance assessments that were previously approved.¹⁴⁸

Professor Yang called for BIPV to be ‘explicitly’ recognised in planning and building regulations as ‘permissible and encouraged renewable infrastructure’. She argued that clearer regulation should address the performance, electrical and fire safety of BIPV to smooth approval processes for incorporating them into new builds.¹⁴⁹ ClearVue Technologies and RMIT University academics also called for clearer BIPV product standards, the latter specifically noting the need for guidelines to improve the fire safety performance of BIPV.¹⁵⁰

Academics from RMIT University also recommended funding industry training and pilot projects to improve industry awareness of, and confidence using, BIPV in apartment buildings.¹⁵¹ They submitted that these reforms would help overcome the current shortage of specialised consultants, manufacturers and engineers and low sector engagement with BIPV.¹⁵²

ClearVue Technologies suggested that BIPV are not properly credited in energy performance frameworks.¹⁵³ It recommended the development of a streamlined certification pathway for BIPV that recognises their dual construction and renewable energy functions. It called for the NCC and building energy efficiency rating tools (such as the Nationwide House Energy Rating Scheme (NatHERS) and the National Australian Built Environment Rating System (NABERS), discussed in Chapter 3) to ‘properly credit’ these functions to ensure BIPV are treated equivalent to rooftop solar in compliance and building ratings.¹⁵⁴

Other stakeholders noted that the high upfront cost of BIPV is impeding their widespread uptake. CEEM asserted that developers are not incentivised to invest in building features, such as BIPV, that deliver energy savings for future residents. It said that this means that BIPV are often a low priority and can be discarded to reduce the

¹⁴⁶ Associate Professor Nicola Willand, et al., *Submission 27*, p. 16.

¹⁴⁷ George Fethers & Co., *Submission 79*, p. 17.

¹⁴⁸ Ibid.

¹⁴⁹ Professor Rebecca Yang, *Submission 38*, p. 9.

¹⁵⁰ ClearVue Technologies Ltd, *Submission 68*, p. 3; Associate Professor Nicola Willand, et al., *Submission 27*, p. 16.

¹⁵¹ Associate Professor Nicola Willand, et al., *Submission 27*, pp. 4, 6, 16.

¹⁵² Ibid., p. 17.

¹⁵³ ClearVue Technologies Ltd, *Submission 68*, p. 14.

¹⁵⁴ Ibid., p. 3.

cost of a build.¹⁵⁵ Serjana Sadeq, Chief Strategy Officer at ClearVue Technologies, noted that BIPV are not currently eligible for Victorian Government solar subsidies.¹⁵⁶ ClearVue Technologies recommended that the Solar for Apartments Program and the Victorian Energy Upgrades program (VEU, discussed in Chapter 5) be expanded to explicitly include BIPV.¹⁵⁷

Stakeholders also supported establishing safe disposal and end-of-life recycling schemes for BIPV now before uptake becomes more widespread.¹⁵⁸

FINDING 34: Rooftop solar systems coupled with building integrated photovoltaics increase the energy-generation capacity of apartment buildings both in terms of daily generating period and total energy generated. This enables them to meet the energy demands of mid- and high-rise apartment buildings where roof space is constrained and the number of lots requiring energy is higher.

RECOMMENDATION 13: That the Victorian Government work with the Australian Government and industry to develop clear product standards and energy performance accreditation for building integrated photovoltaics, which recognise their dual construction and renewable energy purpose. Furthermore, the Victorian Government should revise building and planning regulations to encourage the use of building integrated photovoltaics in residential buildings.

4.3.5 Targeted education, technical advice and planning support is needed

As outlined earlier in this chapter, there are many technical challenges that impact households' ability to access renewable energy sources. The Committee heard that these challenges are exacerbated by gaps in knowledge, planning capabilities and access to trusted expert advice within the apartment sector.

As discussed in Chapter 2, OC committees can lack the governance and technical expertise to progress sustainability upgrades. Figure 4.4 illustrates the complex and multistage process required for OCs to plan, approve and deliver renewable energy projects. It shows that these projects encompass a broad range of technical, legal and financial considerations, as well as sustained engagement from residents and owners throughout, especially given that 75% of OC members need to formally support the project.

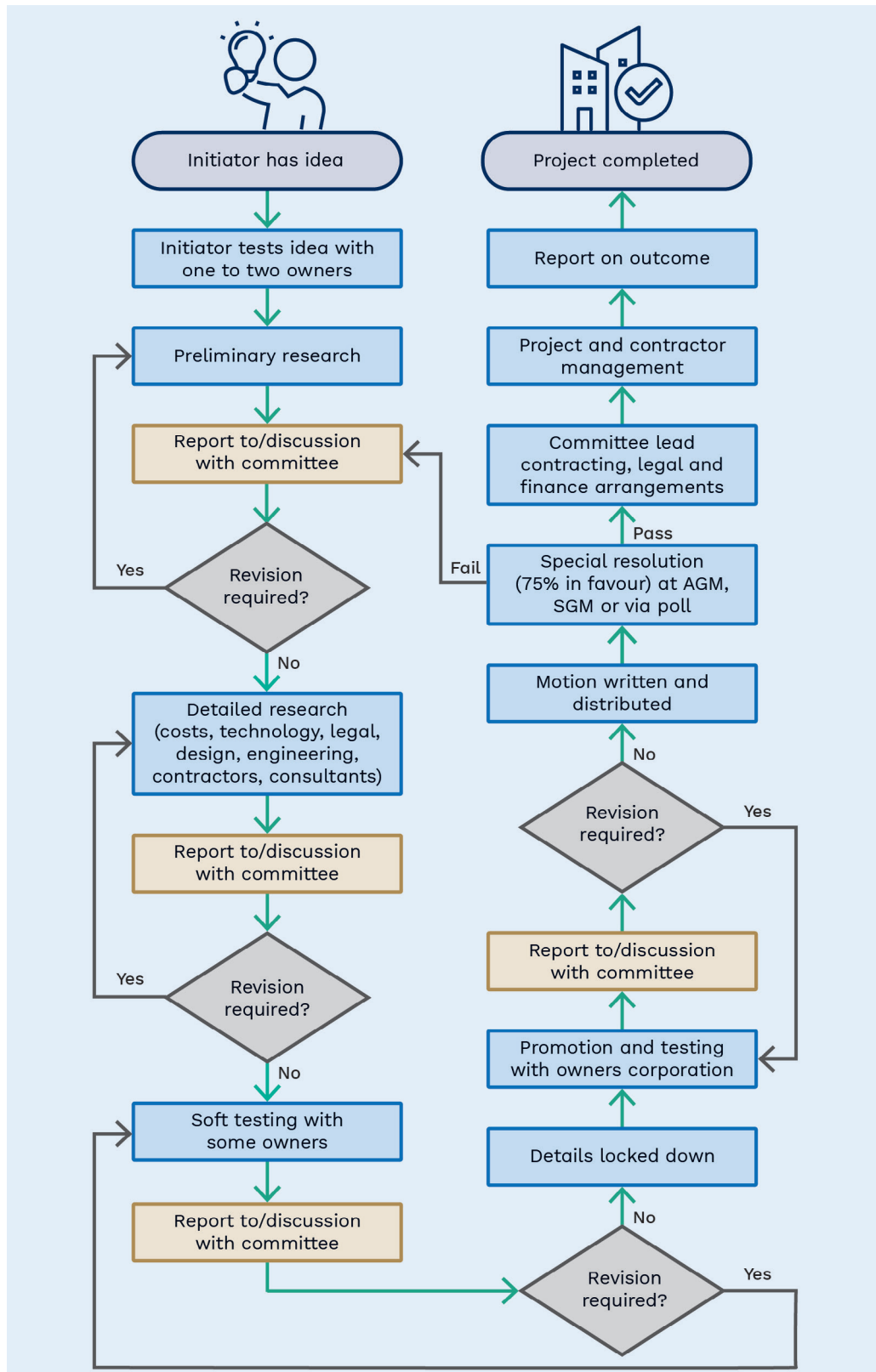
¹⁵⁵ Collaboration on Energy and Environmental Markets, *Submission 80*, pp. 3–4.

¹⁵⁶ Serjana Sadeq, Chief Strategy Officer, ClearVue Technologies, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 32.

¹⁵⁷ ClearVue Technologies Ltd, *Submission 68*, p. 3.

¹⁵⁸ Professor Jian Zuo, Kehao Chen and Zhuocheng Duan, *Submission 91*, p. 11.

Figure 4.4 Typical process for delivering a renewable energy project in an apartment building



Note: AGM = annual general meeting; SGM = special general meeting

Source: Adapted from Let Me Be Frank, *Working with apartment and strata communities: a handbook for local governments*, report for City of Melbourne, 2025, p. 60.

Although government grants assist in overcoming financial barriers to install solar, they do not adequately address the complex and coordinated effort required by OCs and residents to deliver projects. Submitters emphasised that many electrification projects would not proceed without a dedicated individual (often referred to as a solar champion) to bear the organisational load and drive the project.¹⁵⁹ Sustainability consultancies HIP V. HYPE and Get Off Gas noted in their joint submission that the responsibility to lead and coordinate renewable energy projects often falls on volunteer OC committees and residents who can run out of steam, contributing to delays and stalled projects.¹⁶⁰

The Committee heard that while some guidance and support is currently provided, it is often fragmented and insufficient. Solar Victoria advised that it works with retailers and OCs to 'smooth out' understanding by providing guidance materials and information to progress projects.¹⁶¹ Guy Pritchard from Solar Victoria acknowledged that projects remain dependent on a champion in the building to drive progress, and believed it would be too resource intensive for Solar Victoria to provide one-on-one support.¹⁶² This highlights a key limitation of current program settings that place the onus on OCs to conduct independent research into solar and electrification pathways and rely on ad-hoc support mechanisms during the process.¹⁶³

Moreover, Let Me Be Frank argued that existing electrification information and messaging from the government often focus on freestanding dwellings.¹⁶⁴ This was echoed by OCN, which maintained that technical avenues for retrofit are often adapted from detached housing models.¹⁶⁵ The lack of dedicated retrofit and electrification pathways for apartment buildings is further worsened by the absence of a trusted, independent advisory framework for OCs to turn to for guidance.¹⁶⁶ Allume Energy noted that there are significant education and knowledge gaps for owners that do not have the technical expertise to navigate the process of a solar project.¹⁶⁷ The City of Melbourne stated the lack of information and support continues to limit the ability of apartment communities across Australia to undertake building retrofits, implement new technologies and achieve broader sustainability, wellbeing and affordability outcomes.¹⁶⁸

As discussed in Chapter 2, several submitters recommended expanding the definition of sustainability in the *Owners Corporation Act 2006* (Vic) to empower OCs to pursue broader electrification initiatives. However, without access to adequate data and

¹⁵⁹ Jeff Sykes, Chief Executive Officer, Solar Choice, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 20; Heidi Lee Douglas, Chief Executive Officer, Solar Citizens, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 18.

¹⁶⁰ HIP V. HYPE and Get Off Gas, *Submission 46*, p. 4.

¹⁶¹ Guy Pritchard, *Transcript of evidence*, p. 9.

¹⁶² *Ibid.*, pp. 9–10.

¹⁶³ Owners Corporation Network of Australia Limited, *Submission 61*, p. 17.

¹⁶⁴ Let Me Be Frank, *Submission 85*, p. 3.

¹⁶⁵ Owners Corporation Network of Australia Limited, *Submission 61*, p. 17.

¹⁶⁶ *Ibid.*

¹⁶⁷ Allume Energy, *Submission 31*, p. 2.

¹⁶⁸ City of Melbourne, *Submission 84*, pp. 14–15.

expert technical advice to inform OCs, sustainability expert Alan Pears AM cautioned that, “[I]ike-for-like’ replacement based on limited data can lead to expensive over-sizing and ongoing inefficiency due to oversizing of replacement equipment’.¹⁶⁹

To combat higher implementation risks and ensure electrification is tailored to the building’s existing assets, OCs require increased technical support and information to effectively plan energy upgrades.¹⁷⁰ Allume Energy suggested additional funding to increase the pool of qualified specialist educational consultants to provide OCs with assessment support and options.¹⁷¹ Let Me Be Frank advocated for dedicated funding to conduct whole-building trials to generate templates, tools and case studies to be disseminated to the wider community.¹⁷² Furthermore, it emphasised the importance of providing real world examples of both the successes and failures that happened during a project to normalise electrification processes and build community confidence within the sector.¹⁷³ Merri-bek City Council advised there is already a desire for early mover OCs to share resources and learnings so that OCs working on future energy projects do not have to start from scratch.¹⁷⁴

In the long term, developing a centralised online repository that is regularly updated with relevant case studies can enshrine them as a trusted source of guidance for OCs seeking to undertake similar works.¹⁷⁵ Russell Williams, the Deputy Chair of community energy group Electrify Boroondara, noted that NSW is leading the way in this space by publishing case studies outlining successful electrification projects.¹⁷⁶

In addition to the strata hub discussed in Chapter 2, submitters called for the development of apartment-specific guidance that can be relied upon by OCs and residents throughout renewable energy projects. The Committee heard these support mechanisms should incorporate:

- state or council-supported advice for standard contract templates and procurement guidance¹⁷⁷
- independent technical advice to ensure OCs are not locked into legacy infrastructure due to misinformation¹⁷⁸
- case studies from successful electrification projects, categorised by building typology¹⁷⁹

¹⁶⁹ Alan Pears AM, *Submission 65*, p. 22.

¹⁷⁰ Owners Corporation Network of Australia Limited, *Submission 61*, p. 11.

¹⁷¹ Allume Energy, *Submission 31*, p. 2.

¹⁷² Let Me Be Frank, *Submission 85*, p. 3.

¹⁷³ Ibid.

¹⁷⁴ Merri-bek City Council, *Submission 76*, p. 8.

¹⁷⁵ Ibid., p. 35.

¹⁷⁶ Russell Williams, Deputy Chair, Electrify Boroondara, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 16.

¹⁷⁷ Owners Corporation Network of Australia Limited, *Submission 61*, p. 17.

¹⁷⁸ Ibid.

¹⁷⁹ City of Melbourne, *Submission 84*, p. 20; Let Me Be Frank, *Submission 85*, p. 3.

- information about additional financial support mechanisms¹⁸⁰
- connection to qualified providers experienced in working within strata settings¹⁸¹
- building-specific energy assessment tools, load profiling and implementation pathways¹⁸²
- clear information, mentoring and mediation services for OCs to navigate the retrofitting process¹⁸³
- access to long-term electrification planning tools (including feasibility studies and energy ratings)¹⁸⁴
- energy usage data to inform realistic electrification pathways and planning, particularly for larger buildings where common areas have high consumption.¹⁸⁵

The Victorian Government is continuing to expand the offerings of the State Electricity Commission (SEC) to support renewable energy projects and household electrification. It recently launched the Easy Electric SEC online tool as a 'one-stop-shop' to assist households to understand the different electric options available, estimate bill savings, create a pathway to electrification and connect people with SEC-endorsed local installers.¹⁸⁶

The Committee also heard that existing programs could be strengthened through a more coordinated delivery model, particularly by leveraging the role of local governments. The City of Melbourne noted that local governments are uniquely positioned to engage, inform and assist residents within their LGA to access government programs and deliver tailored outreach and education.¹⁸⁷ Moreover, they have access to property data and insights that could be used to inform and support program delivery and uptake.¹⁸⁸ For example, the City of Melbourne could use its Census of Land Use and Employment data to identify and target specific building typologies within the city suitable for renewable energy deployment.¹⁸⁹

Moreover, several submitters highlighted the success of the City of Sydney's Smart Green Apartments program, which commenced in 2016 to provide tailored electrification advice and energy upgrade suggestions for strata buildings in its municipality.¹⁹⁰ So far the Smart Green Apartments program has provided assistance

¹⁸⁰ City of Melbourne, *Submission 84*, p. 20.

¹⁸¹ Ibid.

¹⁸² National Electrical and Communications Association, *Submission 45*, p. 11.

¹⁸³ Victorian Council of Social Service, *Submission 86*, p. 10.

¹⁸⁴ City of Melbourne, *Submission 84*, p. 11.

¹⁸⁵ Liam Henderson, *Transcript of evidence*, p. 31.

¹⁸⁶ Hon Jacinta Allan MP, *The SEC is powering up and helping you save*, media release, 26 May 2026; State Electricity Commission of Victoria, *Going electric at home is now 'easy as' with SEC*, 2026, <<https://www.secvictoria.com.au/news/going-electric-at-home-is-now-easy-as-with-sec>> accessed 30 June 2026.

¹⁸⁷ City of Melbourne, *Submission 84*, p. 21.

¹⁸⁸ Ibid.

¹⁸⁹ Ibid.

¹⁹⁰ Yarra City Council, *Submission 50*, p. 3; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 4.

to 279 buildings and saved residents \$14,205,725 in energy and water bills.¹⁹¹ Some local councils and environmental groups suggested mirroring this model for apartments in Victoria. Yarra City Council, City of Melbourne, Victorian Greenhouse Alliances and the Council Alliance for a Sustainable Built Environment suggested the program be delivered in collaboration with local councils. Based on the NSW model, they suggested the Victorian program incorporate ‘NABERS-style whole-building assessments, tailored technical guidance ... feasibility studies, and implementation support’ that is designed explicitly for apartment buildings.¹⁹² The Yarra City Council further recommended:

integrat[ing] and streamlin[ing] existing programs including Solar for Apartments, VEU, and future SEC services ensuring that these offerings are redesigned for apartment applicability.¹⁹³

The Committee also heard about a Sustainability Concierge service being developed by the City of Melbourne and DEECA to support apartment electrification. Liam Henderson, Manager of Zero Carbon Community at the City of Melbourne, told the Committee buildings located in metropolitan LGAs will be eligible for the pilot program, which will provide electrification feasibility assessments, energy ratings and energy efficiency reports.¹⁹⁴ Completed assessments will assist OCs to create long-term electrification roadmaps that can be integrated into building maintenance planning.¹⁹⁵ The program is also expected to produce a publicly available tool to enable buildings to complete self-assessments.¹⁹⁶ Details about the full range of services offered by the Sustainability Concierge service have not yet been confirmed. However, the City of Melbourne advised it will include measures that ‘support apartment residents around energy efficiency, affordability, renewables, resilience, electrification, and net zero goals’.¹⁹⁷

In addition to new programs, OCN mentioned the importance of collaboration and knowledge sharing initiatives that already exist within the apartment sector. For example, the Strata and Apartments Community of Practice and the Sustainable Strata Advocacy Group bring together interdisciplinary teams and different local councils to share knowledge, experiences and practical approaches to increase sustainability in strata buildings.¹⁹⁸ These initiatives demonstrate growing efforts to build sector capability and improve coordinated support for apartment communities.

However, OCN indicated these groups remain ‘voluntary, localised and limited in scale,’ and are not sufficient to address systemic barriers across the sector.¹⁹⁹ The OCN

¹⁹¹ Ibid.

¹⁹² Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 5; Yarra City Council, *Submission 50*, p. 4; City of Melbourne, *Submission 84*, p. 21.

¹⁹³ Yarra City Council, *Submission 50*, p. 4.

¹⁹⁴ Liam Henderson, *Transcript of evidence*, p. 34; Kate Nicolazzo, Director, Let Me Be Frank, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 21.

¹⁹⁵ Liam Henderson, *Transcript of evidence*, p. 34.

¹⁹⁶ Ibid.

¹⁹⁷ City of Melbourne, *Submission 84*, p. 8.

¹⁹⁸ Owners Corporation Network of Australia Limited, *Submission 61*, p. 4.

¹⁹⁹ Ibid.

reiterated that, '[s]upport must be ongoing rather than grant-based or project-specific. Without a stable advisory ecosystem, decision paralysis and misinformation will persist'.²⁰⁰

The inherent complexity of renewable energy projects reinforces submitters' calls for additional support, tailored guidance and specialist advice to support OCs and solar champions during a building's journey to electrification.

FINDING 35: Apartment residents can find it difficult to navigate technically complex renewable energy projects because they lack access to tailored education, technical advice and planning support.

RECOMMENDATION 14: That the Victorian Government work closely with the strata sector to develop standardised tools, templates and case studies to support owners corporations to plan and deliver renewable energy and electrification projects.

4.4 Electricity grid security and capacity are impeding solar uptake and broader electrification

The Committee heard that electricity network capacity constraints are a significant barrier to renewable energy uptake and electrification in apartment buildings. While rooftop solar, electric vehicle (EV) chargers and electric major appliances are increasingly common, their deployment can be constrained by the ability of the local distribution network to support additional demand and generation.

Distribution network service providers (DNSPs) are the organisations responsible for operating Victoria's electricity networks, including the poles, wires, transformers and substations that distribute electricity to homes and businesses.²⁰¹ DNSPs operate within defined geographic areas, with each provider being responsible for maintaining network infrastructure in its region.

In Australia, different DNSPs operate across each state. Victoria's DNSPs are:

- CitiPower—responsible for Melbourne CBD and inner suburbs
- Powercor—western suburbs and western Victoria
- Jemena—northern and north-western suburbs
- AusNet—outer northern and eastern suburbs and eastern Victoria
- United Energy—southern suburbs and the Mornington Peninsula.²⁰²

²⁰⁰ Ibid., p. 11.

²⁰¹ Solar Victoria, *Distributors—what are they and why are they important?*, 9 September 2025, <<https://www.solar.vic.gov.au/dsnps-what-are-they-and-why-are-they-important>> accessed 11 June 2026.

²⁰² Department of Energy, Environment and Climate Action, *Find your energy distributor*, 2025, <<https://www.energy.vic.gov.au/households/find-your-energy-distributor>> accessed 16 June 2026.

DNSPs play a central role in the uptake of renewable energy as they are responsible for assessing connection requests for solar systems and planning upgrades to ensure the network can safely accommodate additional demand. In the combined submission from jointly owned DNSPs, CitiPower, Powercor and United Energy, they acknowledged that electrification is a complex process and they are working to make network connection more transparent and simpler.²⁰³

An electrification factsheet developed by CitiPower reiterated the importance of apartment building OCs planning electrification projects with a registered electrical contractor and engaging with local energy providers early in the process.²⁰⁴ OCs are required to consult with DNSPs when electrification could impact shared infrastructure to ensure there is sufficient electrical capacity to the site, and that the shared infrastructure can accommodate increased power loads.²⁰⁵ According to CitiPower, there is usually a single point of supply that feeds an agreed amount of energy to the entire building and the OC is responsible for the power distribution.²⁰⁶ In circumstances where a proposed project requires an increased supply of energy, OCs need to submit an application to the DNSP formally requesting an increase in supply, pay an application fee based on the amount of load requested, and then the DNSP will assess the impact to the network and whether the proposed project can proceed with or without network augmentation.²⁰⁷

The Committee heard from stakeholders who had varied experiences engaging in this process, with common issues and areas for reform outlined in the following sections.

4.4.1 Electrical networks currently lack capacity to accommodate widespread electrification or solar projects

As households continue to transition away from gas, electricity consumption will increase, requiring building infrastructure and local networks to adapt to meet higher demand.²⁰⁸ The Committee heard that even where there is strong resident support to electrify, insufficient grid capacity and outdated internal cabling continue to prevent projects from progressing.²⁰⁹

Evidence from residents and OCs demonstrated that switching to electric appliances significantly increases household electricity consumption, with some buildings lacking sufficient grid supply to support this transition.²¹⁰ Apartment owner Robert Davis

²⁰³ CitiPower, Powercor and United Energy, *Submission 92*, p. 1.

²⁰⁴ CitiPower, *Electrification*, factsheet, April 2026, p. 1.

²⁰⁵ *Ibid.*, p. 2.

²⁰⁶ *Ibid.*, p. 1.

²⁰⁷ *Ibid.*, p. 2.

²⁰⁸ Jane Mavoa, *Transcript of evidence*, p. 48; Robert Davis, *Submission 30*, p. 1; Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 8.

²⁰⁹ Jane Mavoa, *Transcript of evidence*, p. 48; Richard Keeble, Member, Owners Committee 61 and 61A Haines Street, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 49.

²¹⁰ Robert Davis, *Submission 30*, p. 1.

detailed his experience transitioning away from gas for cooking, hot water supply and heating in 2022:

[W]e doubled our average power consumption over a year from 200 to 400 kW ... in winter months ... it is close to tripling at 565 kW ... [A]n electrical engineer ... concluded that we do not have sufficient power supply to electrify the whole site. Our apartment is the only one of 94 apartments that is fully electrified.²¹¹

This experience is not unique, but indicative of a broader mismatch between historical network design and contemporary energy use fuelled by households looking to electrify.²¹²

Case Study 4.4 outlines anecdotal evidence from apartment owners in North Melbourne navigating legacy infrastructure and grid constraints when seeking to electrify. It illustrates that upgrading supply from the network requires substantial monetary investment and coordination among the members of the OC.

In the past, DNSP planning was relatively straightforward and typically involved a single customer wanting to upgrade electricity supply to individual premises or a large commercial space.²¹³ Increasing supply to a strata building is inherently more complex, requiring volunteer OC committees to coordinate large-scale and interrelated network upgrades with DNSPs, despite having limited time and technical capacity.²¹⁴ These issues are worsened by a lack of data transparency from the DNSP and OCs having no bargaining power during the process.²¹⁵ These issues are explored further below.

FINDING 36: Areas of the electricity grid that were not designed to support modern electricity loads are a significant barrier to electrification.

²¹¹ Ibid.

²¹² City of Melbourne, *Submission 84*, p. 16.

²¹³ Ibid.

²¹⁴ Ibid.

²¹⁵ Ibid.

Case Study 4.4 43 Haines Street, North Melbourne

The OC of a 1960s walk-up apartment block located in North Melbourne provided detailed evidence of their experiences trying to overcome technical and information barriers to electrify. Despite strong resident support to transition away from gas, mitigate energy costs and improve overall efficiency, the complex faces multiple interconnected electrical infrastructure constraints.

At the street level, all buildings in the area are supplied by a single ageing electrical cable installed in the 1960s that cannot support modern electrical demand. The OC estimates the cable would need to be ten times larger than its current size to support residents switching to induction stovetops and electric heat pumps and installing EV charging infrastructure.

Due to the shared nature of the cable, the OC has been advised that any attempt to upgrade electricity supply for an individual building would trigger a requirement to upgrade the entire shared network connection.

A neighbouring complex connected to the same network cable was told by Powercor that increasing energy supply to the area would require installation of a new on-site substation and high voltage connection at an estimated cost of \$750,000.

The OC described being faced with two unviable pathways to secure this upgrade. The first would require coordinating 75% agreement between 288 owners across multiple OCs to jointly fund and deliver a precinct-wide infrastructure upgrade, including agreement on the location of a new substation. The second would require a single building to fund the entire cost of the upgrade, despite the infrastructure benefiting multiple neighbouring properties.

The OC also highlighted the knowledge gap and information asymmetry making it difficult for them to access information from their DNSP related to network capacity and upgrade feasibility. Key technical data is behind a 'paywall' that requires the OC to pay an application fee between \$2,700 and \$4,000 to obtain preliminary assessments of network capacity through an electrical contractor, with no guarantee that additional supply could be provided.

This cost and information barrier has prevented the OC from progressing formal electrification planning, as it is not possible to determine whether upgrades are technically feasible without incurring significant upfront costs. The OC estimates the cost of upgrading internal cabling, installing solar and augmenting the grid capacity would be in the ballpark of \$1 million, excluding battery storage.

Source: Owners at 43 Haines Street, *Submission 44*, pp. 1–3, 5.

4.4.2 Accessing network capacity information is costly, time consuming and complicated

The Committee heard that OCs are currently struggling to access clear, timely and affordable information about network capacity and upgrade requirements from DNSPs.²¹⁶ OCs require this information to assess whether electrification is feasible and to plan for any upgrades required to accommodate the proposed system.²¹⁷

The City of Melbourne expressed that the process is often 'opaque, costly, slow and highly uncertain' for OCs seeking to make informed decisions about electrification.²¹⁸

Merri-bek City Council similarly reported receiving complaints from apartment owners in their LGA about the lack of publicly available information regarding network capacity and considerable costs associated with obtaining this information from local DNSPs.²¹⁹

The Committee heard from neighbouring Haines Street OC members who detailed their experiences seeking to access simple information about network capacity, describing current processes as a paywall that promotes information asymmetry between volunteer OC committees and DNSPs.²²⁰ Richard Keeble, an OC committee member at 61 and 61A Haines Street, highlighted the reality that grid planning decisions made in the 1960s mean that his building cannot begin to design and cost internal upgrades without paying up to \$4,000 for network information that should be accessible and affordable.²²¹

Merri-bek City Council stated that many households in its municipality will require transformer upgrades to support electrification and EV charging infrastructure. However, it highlighted that accessing this information is itself a significant barrier, requiring owners to pay considerable costs to determine whether additional capacity is available and what upgrades may be required.²²²

Solar Citizens also pointed to the lack of accessible spatial energy mapping to explain information gaps and planning inefficiencies impacting local governments and commercial operators that cannot access critical information about energy flow and network congestion.²²³ Heidi Lee Douglas, the CEO of Solar Citizens, highlighted successful models implemented in Great Britain to embed network mapping data into urban masterplans.²²⁴ Since 2016, comprehensive network data and spatial energy mapping has been publicly available, which has enabled local councils and authorities

²¹⁶ Ibid.; Merri-bek City Council, *Submission 76*, p. 11; Owners Committee 61 & 61A Haines Street, *Submission 21*, p. 7; Owners at 43 Haines Street, *Submission 44*, p. 5.

²¹⁷ Let Me Be Frank, *Submission 85*, p. 5.

²¹⁸ City of Melbourne, *Submission 84*, p. 16.

²¹⁹ Merri-bek City Council, *Submission 76*, p. 11.

²²⁰ Owners Committee 61 & 61A Haines Street, *Submission 21*, p. 7; Owners at 43 Haines Street, *Submission 44*, p. 5; Richard Keeble, *Transcript of evidence*, pp. 47–49.

²²¹ Richard Keeble, *Transcript of evidence*, pp. 47, 49.

²²² Merri-bek City Council, *Submission 76*, p. 11.

²²³ Heidi Lee Douglas, *Transcript of evidence*, p. 19; Solar Citizens, *Submission 72*, p. 6.

²²⁴ Heidi Lee Douglas, *Transcript of evidence*, p. 19.

to integrate network data into effective energy planning.²²⁵ The National Energy System Operator in Great Britain is currently developing a strategic energy plan to help accelerate and optimise electrification by mapping potential locations for renewable energy generation and storage sites.²²⁶

By contrast, councils in Victoria do not have access to detailed grid capacity and hosting information held by DNSPs.²²⁷ The lack of practical data means local councils cannot strategically plan urban projects around grid optimisation, often leading to delayed upgrades, increased costs and missed opportunities to integrate equitable access to clean energy in their LGAs.²²⁸ Solar Citizens advocated for accurate information and datasets held by DNSPs related to network capacity and spatial mapping to be made publicly available and updated regularly.²²⁹

The Committee heard that there are often lengthy and uncertain timeframes for obtaining network information, which can further delay or prevent projects from progressing.²³⁰ Current processes are often too complex for volunteer OC committees to navigate, largely due to the costly and reactive nature of DNSP practices when they respond to individual requests on an ad hoc basis without clear procedure.²³¹ Merri-bek City Council recommended requiring DNSPs to provide free network capacity assessments for buildings within 20 business days.²³² The City of Melbourne advocated for 'clear service standards, transparent pricing and better guidance on when upgrades costs will be site-specific and when they involve shared network infrastructure across multiple buildings'.²³³

FINDING 37: Limited access to affordable, timely and transparent network capacity information is preventing effective electrification planning, increasing costs and delaying renewable energy projects in apartment buildings.

Even once OCs obtain the critical information about network capacity and supply to their building, if augmentation work is required to enable electrification, the associated costs charged to undertake this work can be insurmountable, as discussed below.

²²⁵ Ibid.; Solar Citizens, *Submission 72*, p. 6.

²²⁶ Solar Citizens, *Submission 72*, p. 6.

²²⁷ Ibid.

²²⁸ Ibid., pp. 6–7.

²²⁹ Ibid., p. 7.

²³⁰ City of Melbourne, *Submission 84*, p. 16.

²³¹ Ibid., p. 20.

²³² Merri-bek City Council, *Submission 76*, p. 2.

²³³ City of Melbourne, *Submission 84*, p. 20.

4.4.3 Network upgrade costs are often prohibitive and inequitable for first movers

Another major barrier stifling renewable energy uptake is the current cost allocation for network augmentation works.²³⁴ The Property Council of Australia argued there is a systemic cost barrier for apartment owners that is dissuading proactive electrification across the sector.²³⁵ During the assessment phase, when a DNSP determines that network infrastructure upgrades are required, these works are typically considered a 'customer-driven upgrade' with the full cost of augmentation assigned to the OC that initiated the connection application.²³⁶ Given network upgrades can cost hundreds of thousands of dollars and encompass a broad range of augmentation works, the Property Council of Australia argued that it is 'unreasonable' and 'unrealistic' to expect apartment owners to pay for the enabling works.²³⁷

Current cost allocation principles are also causing a first mover disincentive, whereby buildings are delaying electrification projects as they do not want to be responsible for paying costly shared network upgrades.²³⁸ Yarra City Council described the current approach as a 'fee dartboard', where network upgrade costs are applied inconsistently and unpredictably across buildings depending on the timing and location of their electrification project.²³⁹

Case Study 4.4 above about the experience of the OC at 43 Haines Street, North Melbourne illustrates the prohibitive nature of unexpected and costly network upgrades, as the OC cannot justify the estimated \$750,000 substation and cabling upgrade required.²⁴⁰ Despite working with Solar Victoria and other community energy consultants to try and find a solution, residents at Haines Street are still unable to electrify due to the network constraints.²⁴¹

Solar Victoria also identified large-scale electrical infrastructure upgrades required to enable electrification projects as a key barrier impacting the effectiveness and uptake of the Solar for Apartments Program.²⁴² The program can support the installation of rooftop solar but cannot assist when buildings require costly enabling infrastructure upgrades.²⁴³ Solar Victoria confirmed they do not have access to information about the prevalence or location of buildings that have constrained electricity supply, and

²³⁴ Ibid., p. 17; Property Council of Australia, *Submission 75*, p. 9.

²³⁵ Property Council of Australia, *Submission 75*, p. 9.

²³⁶ Ibid.; Solar Victoria, Inquiry into renewable and affordable energy for apartments hearing, response to questions on notice received 1 June 2026, p. 1.

²³⁷ Property Council of Australia, *Submission 75*, p. 9.

²³⁸ Ibid.; City of Melbourne, *Submission 84*, p. 17.

²³⁹ Katy Daily, Lead, Energy Innovation, Yarra City Council, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 32.

²⁴⁰ Owners at 43 Haines Street, *Submission 44*, pp. 1–3.

²⁴¹ Kate Barnes, Acting Chief Executive Officer, Solar Victoria, Department of Energy, Environment and Climate Action, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 7; Liam Henderson, *Transcript of evidence*, p. 32; Let Me Be Frank, *Working with apartment and strata communities*, pp. 27–28.

²⁴² Solar Victoria, response to questions on notice, p. 1.

²⁴³ Ibid.

suggested DNSP operators and the Australian Energy Market Operator may be best placed to provide this critical information at a micro and macro level.²⁴⁴

The City of Melbourne warned that without reform, residents in areas with incompatible network design will be locked into paying higher costs for gas and miss out on the opportunity to benefit from renewable energy options.²⁴⁵ Yarra City Council, City of Melbourne and Let Me Be Frank all recommended incorporating the cost of infrastructure upgrades into DNSPs' regulatory asset base, which would enable the costs to be recovered over time across all users instead of individual building applicants.²⁴⁶

The Committee also heard from stakeholders concerned about electricity pricing reform and its potential impact on apartment residents, renters and low-income households.²⁴⁷ Social justice organisation the Brotherhood of St. Laurence believed that proposals to shift network costs into increased fixed charges may disproportionately impact low energy consumption households, including many apartment dwellers who would incur higher bills.²⁴⁸ Similarly, community climate action groups Lighter Footprints and Darebin Climate Action Now argued that increasing fixed charges could reduce investment in self-generation and energy efficiency systems, while increasing costs for those least able to adapt, including households unable to access rooftop solar or other consumer energy resources.²⁴⁹

The Committee notes that the Australian Energy Market Commission, which makes the rules for the national electricity and gas markets, released its 2026 Pricing Review final report in June 2026. The review found that current pricing frameworks are complex, inconsistent and difficult for consumers to navigate and understand.²⁵⁰ Especially as more households generate their own energy, the review found that 'the cost of maintaining the poles and wires network is falling disproportionately on a subset of customers ... despite the fact that we all still rely on the shared grid'.²⁵¹ The report made four recommendations that set out a roadmap for reform that will enable a simpler, fairer pricing framework that supports consumer participation while harnessing the benefits of renewable energy technology.²⁵² The Committee understands the importance of effective electricity pricing reform that considers the impact on vulnerable households, including apartment residents and renters, while ensuring future pricing reforms incentivise electrification and support equitable participation in the energy transition.

²⁴⁴ Ibid., p. 2.

²⁴⁵ City of Melbourne, *Submission 84*, p. 17.

²⁴⁶ Yarra City Council, *Submission 50*, p. 4; City of Melbourne, *Submission 84*, p. 20; Let Me Be Frank, *Submission 85*, p. 4.

²⁴⁷ Brotherhood of St. Laurence, *Submission 83*, p. 3; Dr Valerie Kay, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 48; Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 4.

²⁴⁸ Brotherhood of St. Laurence, *Submission 83*, p. 3.

²⁴⁹ Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 4.

²⁵⁰ Australian Energy Market Commission, *The pricing review: electricity pricing for a consumer-driven future, final report*, 2026, p. i.

²⁵¹ Ibid., p. iv.

²⁵² Ibid., p. ii.

FINDING 38: The current approach to funding electricity network upgrades places a disproportionate cost burden on individual apartment buildings, particularly first movers, creating inequitable outcomes and discouraging electrification.

RECOMMENDATION 15: That the Victorian Government require distribution network service providers to implement a standardised approach for providing network information to owners corporations, including free preliminary capacity assessments for electrification within 20 business days.

RECOMMENDATION 16: That the Victorian Government encourage the Australian Energy Market Commission and the energy sector to develop transparent pricing models for grid augmentation that address the inequitable financial burden on first mover apartment buildings.

4.4.4 Proactive grid augmentation and data transparency are needed

The Committee heard that the combined uncertainty, costs and delays associated with accessing network information is creating an unmovable roadblock for many residents seeking to electrify.

All Victorian DNSPs have published interactive network maps online that are publicly available and provide an overview of the electricity network within their area. Users can apply customisable filters to show the location of substations, electricity lines, system limitations and electrical load data for areas located in their region to help increase understanding of the network.²⁵³ However, the Committee heard these maps do not provide information about the low-voltage network, which is critical for OCs to assess electrification feasibility at the building level.²⁵⁴

Jointly owned DNSP providers CitiPower, Powercor and United Energy (the networks) recently provided evidence to the Legislative Council Economy and Infrastructure Committee's Inquiry into electricity supply for electric vehicles. The General Manager of Regulation at the networks, Renate Vogt, acknowledged customers are increasingly seeking data about the low-voltage network to understand any thermal and voltage constraints and determine whether renewable technologies can be installed.²⁵⁵

²⁵³ AusNet, *AusNet GridView Portal*, 31 December 2025, <<https://www.ausnetservices.com.au/electricity/network-information/gridview-portal>> accessed 15 June 2026; CitiPower and Powercor, *Network Visualisation Portal*, 2025, <<https://dapr.powercor.com.au>> accessed 15 June 2026; United Energy, *United Energy Network Visualisation Portal*, 2025, <<https://dapr.unitedenergy.com.au>> accessed 15 June 2026; Jemena, *Jemena distribution annual planning report*, 2025, <<https://dapr.jemena.com.au>> accessed 15 June 2026.

²⁵⁴ City of Melbourne, *Submission 84*, p. 16; Energy Consumers Australia, *Why distribution network planning rules need to change*, 2025, <<https://energyconsumersaustralia.com.au/news/why-distribution-network-planning-rules-need-change>> accessed 16 June 2026.

²⁵⁵ Renate Vogt, General Manager of Regulation, CitiPower, Powercor and United Energy, Legislative Council Economy and Infrastructure Committee, public hearing, 12 March 2026, *Transcript of evidence*, p. 3.

She confirmed the networks have heard the complaints and calls for more granular network data ‘loud and clear’, and have asked for additional investment from the Australian Energy Regulator (AER), which regulates the nation’s energy networks and markets, to improve data granularity.²⁵⁶

Compared with other jurisdictions, the networks advised the Legislative Council Committee that smart meters, which are mandatory in Victoria and automatically record electricity use every 30 minutes, position Victoria ahead of other states to provide customers with real-time data at the low-voltage network level.²⁵⁷ The networks advised they are aiming to provide granular-level network detail in a couple of years using smart meters as a key tool but require additional investment from the AER to put the appropriate systems in place.²⁵⁸ The Legislative Council Committee recommended:

That the Victorian Government require Victorian DNSPs to develop the necessary data infrastructure to create network plans that show fine-grained capacity data and provide an indication of connection costs.²⁵⁹

The Victorian Government has identified the importance of improving access to low-voltage network data and supported trials led by the AER.²⁶⁰ As outlined in *Cheaper, cleaner, renewable: our plan for Victoria’s electricity future*, the Victorian Government committed to continue advocating for the regulated provision of low-voltage network data.²⁶¹

The issue of network planning was raised by stakeholders in this Inquiry too. Rather than waiting for demand to increase, Krista Milne, Director of Climate Change and City Resilience at the City of Melbourne, reiterated the importance of DNSPs undertaking proactive network planning to understand where the constraints are to provide accurate forecasting and infrastructure investment.²⁶² This is particularly important in regional areas that are already more exposed to network constraints and outages due to extreme weather events and climate-related risks.²⁶³ NECA and the Green Building Council of Australia emphasised the importance of regulatory reform to improve grid reliability and resilience in regional Victoria to enable batteries and renewable

²⁵⁶ Ibid.

²⁵⁷ Ibid.; Department of Energy, Environment and Climate Action, *Smart meters: smart meters help you understand and manage your energy use and costs*, 2025, <<https://www.energy.vic.gov.au/households/save-energy-and-money/smart-meters>> accessed 15 June 2026.

²⁵⁸ Renate Vogt, *Transcript of evidence*, pp. 4, 12.

²⁵⁹ Parliament of Victoria, Legislative Council Economy and Infrastructure Committee, *Inquiry into electricity supply for electric vehicles*, 2026, p. 126.

²⁶⁰ City of Melbourne, *Submission 84*, p. 17; Department of Energy, Environment and Climate Action, *Cheaper, cleaner, renewable: our plan for Victoria’s electricity future*, 2024, p. 29.

²⁶¹ Ibid.

²⁶² Krista Milne, Director, Climate Change and City Resilience, City of Melbourne, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 32.

²⁶³ National Electrical and Communications Association, *Submission 45*, p. 7; Green Building Council of Australia, *Submission 77*, p. 5.

energy systems to be deployed.²⁶⁴ Moreover, the number of apartments and multi-unit dwellings is set to increase in regional areas under Plan for Victoria objectives, which outline long-term housing targets across all Victorian LGAs coupled with planning reforms to enable more high-density housing in regional areas.²⁶⁵ The Department of Transport and Planning asserts that it will:

support regional and rural Victoria to lead the way in Victoria's energy transition ... and prioritis[e] access to affordable, reliable energy supply that underpins local businesses and communities.²⁶⁶

To achieve Plan for Victoria targets, proactive grid planning and augmentation will be needed in regional areas to ensure all Victorians have equitable access to renewable and affordable energy.

The Legislative Council Committee heard that current regulatory settings can limit proactive investment, particularly in regional areas as the AER requires DNSPs to demonstrate a clear economic benefit to justify investment, meaning that the cost of grid upgrade proposals in regional areas with fewer customers can be more difficult to justify.²⁶⁷ This can constrain proactive investment in regional areas and underscores the importance of maximising existing infrastructure to prevent unnecessarily expensive upgrades.²⁶⁸

Current approaches to network planning and data provision are not sufficient and instead DNSPs should be required to implement a more coordinated and proactive planning approach that identifies network constraints in advance.²⁶⁹ Let Me Be Frank argued that DNSPs need to:

transparently map where real grid constraints exist (as distinct from perceived barriers) so that electrification programs can be sequenced to start where barriers are fewest and momentum can be built.²⁷⁰

Yarra City Council also advocated for systematic and localised planning principles, and echoed calls from Let Me Be Frank to utilise smart meter data and locational forecasting to better understand demand and prioritise upgrades.²⁷¹

²⁶⁴ National Electrical and Communications Association, *Submission 45*, p. 11; Green Building Council of Australia, *Submission 77*, p. 5.

²⁶⁵ Government of Victoria, *More homes for regional living*, 2026, <<https://www.vic.gov.au/more-homes-for-regional-living>> accessed 20 July 2026; Department of Transport and Planning, *Housing targets: learn about why we are setting housing targets and how we are doing this*, 2025, <<https://www.planning.vic.gov.au/planforvictoria/housing-for-all-victorians/housing-targets>> accessed 20 July 2026.

²⁶⁶ Department of Transport and Planning, *A long-term plan for all of Victoria*, 2025, <<https://www.planning.vic.gov.au/planforvictoria/about-plan-for-victoria/the-long-term-plan-for-victoria>> accessed 20 July 2026.

²⁶⁷ Parliament of Victoria, Legislative Council Economy and Infrastructure Committee, *Inquiry into electricity supply for electric vehicles*, p. 125.

²⁶⁸ Ibid.

²⁶⁹ Let Me Be Frank, *Submission 85*, p. 4; Yarra City Council, *Submission 50*, p. 4.

²⁷⁰ Let Me Be Frank, *Submission 85*, p. 4.

²⁷¹ Yarra City Council, *Submission 50*, p. 4; Let Me Be Frank, *Submission 85*, p. 4.

Furthermore, the City of Melbourne found that existing processes rely on DNSPs having ad-hoc engagement with individual OCs; instead they emphasised the importance of precinct-level planning to identify constraints and plan network upgrades across entire neighbourhoods.²⁷² It recommended that DNSPs adopt a more proactive and localised approach to support electrification in apartment-dense areas such as the CBD, Southbank and Docklands.²⁷³ Similarly, Let Me Be Frank suggested DNSPs work collaboratively with OCs and local governments to prioritise grid upgrades sequentially by identifying areas with the lowest infrastructure barriers to electrify first.²⁷⁴

Submitters also suggested DNSPs consider implementing alternative solutions to address network constraints in addition to traditional network augmentation.²⁷⁵ The City of Melbourne recommended non-network options including ‘demand management, managed EV charging and on-site storage’, alongside traditional infrastructure upgrades to reduce costs and improve efficiency.²⁷⁶ Yarra City Council noted that community batteries and flexible demand strategies can help defer costly upgrades and improve utilisation of existing infrastructure.²⁷⁷

FINDING 39: Distribution network service providers are failing to provide sufficient data to customers about low-voltage networks while engaging in largely reactive planning practices that are inhibiting electrification.

RECOMMENDATION 17: That the Victorian Government require distribution network service providers to publish granular low-voltage electricity network data and undertake proactive network planning that is publicly accessible to enable apartment electrification.

FINDING 40: Under the Plan for Victoria, apartments will become more common in regional hubs, therefore regional Victorians stand to benefit from proactive grid planning and increased access to renewable energy and battery storage, particularly during power outages and extreme weather events. However, smaller populations make it harder for distribution network service providers to justify investment to improve electricity grid capacity.

RECOMMENDATION 18: That the Victorian Government advocate to the Australian Energy Regulator to support distribution network service providers to systematically augment grid capacity in areas with a high density of apartments and in regional areas with existing network constraints, to ensure these cohorts are not left behind in the energy transition.

²⁷² City of Melbourne, *Submission 84*, p. 20.

²⁷³ Ibid.

²⁷⁴ Let Me Be Frank, *Submission 85*, p. 4.

²⁷⁵ City of Melbourne, *Submission 84*, p. 25; Yarra City Council, *Submission 50*, p. 4.

²⁷⁶ City of Melbourne, *Submission 84*, p. 25.

²⁷⁷ Yarra City Council, *Submission 50*, p. 4.

4.5 Workforce and technical capacity constraints

The Committee heard that workforce shortages and technical capacity constraints are emerging as significant barriers to electrification and renewable energy uptake in apartment buildings. These issues extend beyond how many electricians are available to include whether the workforce has the right skills, training and support to deliver complex electrification and solar projects, particularly in older buildings that require retrofitting.²⁷⁸

President of SCA Vic, Pernille Cavanough, highlighted that apartment buildings need to be treated as a distinct housing category, requiring specialised policy and industry capability to support electrification at scale.²⁷⁹ This section explores current workforce and skill shortages that are impacting electrification targets and program delivery in Victoria.

4.5.1 There are not enough electricians and apprentices to meet demand

NECA advised the Committee that structural constraints within the training system are limiting the number of new electricians entering the workforce.²⁸⁰ In particular, they discussed the impact of enrolment caps that regulate the number of new apprentices each training provider can accept.²⁸¹ Rob Selymes, a qualified electrician and Victorian Board Member at NECA, explained that as a not-for-profit training provider, NECA is capped to 500 new apprentices per calendar year because TAFE is allocated 70% of total enrolments, with the residual amount allocated to smaller providers.²⁸² NECA noted it is reaching these caps quickly and believes that the industry is barely keeping up with the number of electricians retiring due to enrolment caps and low course completion rates.²⁸³ It told the Committee these issues stem from a lack of support mechanisms and pastoral care practices within the industry, particularly during the early stages of the apprenticeship.²⁸⁴

Further to this, Kate Raymond, Chief Executive Officer of Master Electricians Australia, the peak body for electrical contractors, explained the cost and regulatory burden placed on employers can discourage them from hiring apprentices, particularly in small

²⁷⁸ Victorian Trades Hall Council, *Submission 60*, p. 8; Neil Roberts, Technical Director, National Electrical and Communications Association, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, pp. 63–64.

²⁷⁹ Pernille Cavanough, *Transcript of evidence*, pp. 40–41.

²⁸⁰ Rob Selymes, Board Member, Victoria, National Electrical and Communications Association, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 61.

²⁸¹ Ibid.

²⁸² Ibid., pp. 60–61; Kent Johns, Head, Government Relations and Regulatory Affairs, National Electrical and Communications Association, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 61; National Electrical and Communications Association, Inquiry into renewable and affordable energy for apartments hearing, response to questions on notice received 1 June 2026, p. 1.

²⁸³ Rob Selymes, *Transcript of evidence*, pp. 60–61; Kent Johns, *Transcript of evidence*, pp. 61–62; National Electrical and Communications Association, response to questions on notice, p. 1.

²⁸⁴ Rob Selymes, *Transcript of evidence*, pp. 60–62; Kent Johns, *Transcript of evidence*, pp. 62–63.

and medium-sized businesses.²⁸⁵ She noted that more employers may be willing to take on an electrical apprentice if they were provided with additional incentives and assistance to do so.²⁸⁶

Victorian Trades Hall Council (VTHC), which coordinates 41 affiliated unions, expressed similar concerns and warned that workforce shortages will undermine Victoria's ability to meet its emissions reduction targets.²⁸⁷ They cited 2023 research indicating that Australia will need an additional 32,000 electricians by 2030, and a further 85,000 by 2050 based on projected growth rates.²⁸⁸ Furthermore, VTHC reported that while apprenticeship completion rates have increased across all trades, targeted action is needed to ensure there are enough qualified electricians to complete electrification projects, as well as plumbers to disconnect existing gas infrastructure and facilitate the decommissioning of the gas network.²⁸⁹

In its Inquiry into electricity supply for electric vehicles, the Legislative Council Economy and Infrastructure Committee also explored the impact of workforce shortages and recommended that:

The Victorian Government must create pathways for young people to undertake electrical apprenticeships, especially groups that are underrepresented in these cohorts, such as women and mature-aged learners, and incentivise improved apprenticeship completion rates.²⁹⁰

Although overall female participation in trades remains low (11.5%), the 2025 Jobs and Skills report, prepared by Jobs and Skills Australia to provide independent insight and advice into Australia's workforce trends, found that there were around four times as many female electricians enrolled as apprentices in 2025 than in 2015. This signals that promotional activities and incentives to attract women to the sector are working.²⁹¹

The Victorian Government also announced in May 2026 that it will offer 2,000 electrical trade apprenticeships across the next four years through a newly created Apprenticeship Academy delivered by the SEC.²⁹² The Academy will open in January 2027 and enable the SEC to become the largest employer of electrical apprentices in Victoria.²⁹³ Although this is an important step to address current workforce shortages, evidence suggested that electrifying apartment buildings requires additional technical expertise, experience and skills, as explored in the following section.

²⁸⁵ Kate Raymond, Chief Executive Officer, Master Electricians Australia, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 62.

²⁸⁶ Ibid.

²⁸⁷ Victorian Trades Hall Council, *Submission 60*, p. 8.

²⁸⁸ Ibid.

²⁸⁹ Ibid.

²⁹⁰ Parliament of Victoria, Legislative Council Economy and Infrastructure Committee, *Inquiry into electricity supply for electric vehicles*, p. 114.

²⁹¹ Jobs and Skills Australia, *Connecting for impact: aligning productivity, participation and skills*, Jobs and Skills report 2025, 2025, p. 9.

²⁹² Hon Jacinta Allan MP, *SEC will hire 2,000 apprentices to secure our future*, media release, 23 May 2026.

²⁹³ Ibid.

4.5.2 Apartment electrification requires a more specialised workforce

The Committee heard that from an installer's perspective, undertaking rooftop solar projects and broader electrification works is far more complex in apartments compared with stand-alone dwellings, requiring an additional set of technical skills and knowledge.²⁹⁴ Neil Roberts, Technical Director at NECA, explained that retrofitting older apartment buildings is particularly challenging and often requires engineering expertise in addition to standard electrical knowledge.²⁹⁵

The Committee heard that the current workforce is not fully equipped to meet the additional complexity demands.²⁹⁶ OCN noted there is a limited number of retailers experienced in delivering energy retrofits in multi-storey and strata environments, which is contributing to higher costs and limited supply.²⁹⁷ Dr Janette Corcoran from OCN explained this lack of experience can result in OCs paying a 'complexity premium' for apartment electrification projects, which end up costing far more because fewer providers have the capability to deliver them.²⁹⁸ NECA argued that '[s]teamlined and predictable pathways would materially reduce transaction costs and remove avoidable administrative barriers'.²⁹⁹

Let Me Be Frank argued that there are unique technical and governance intricacies present in a strata setting that require additional workforce development to understand.³⁰⁰ It advocated for additional upskilling and training for 'assessors, consultants, and tradespeople' to strengthen industry capacity and knowledge needed for OCs and electricians to engage confidently with DNSPs.³⁰¹

OCN told the Committee there is a shortage of tailored market solutions and skilled suppliers who are experienced working within strata environments.³⁰² To address current workforce gaps, submitters proposed:

- greater availability of post-trade solar and battery accreditation courses³⁰³
- targeted workforce upskilling to enable strata electrification at scale³⁰⁴
- specialised training and accreditation for installers working in apartments³⁰⁵
- increased understanding and standardised measures for asset lifecycles³⁰⁶

²⁹⁴ Neil Roberts, *Transcript of evidence*, p. 64; Owners Corporation Network of Australia Limited, *Submission 61*, p. 17.

²⁹⁵ Neil Roberts, *Transcript of evidence*, p. 64.

²⁹⁶ Ibid.; Owners Corporation Network of Australia Limited, *Submission 61*, p. 17; Master Electricians Australia, *Submission 41*.

²⁹⁷ Owners Corporation Network of Australia Limited, *Submission 61*, p. 17.

²⁹⁸ Dr Janette Corcoran, *Transcript of evidence*, p. 36.

²⁹⁹ National Electrical and Communications Association, *Submission 45*, p. 8.

³⁰⁰ Let Me Be Frank, *Submission 85*, pp. 4–5.

³⁰¹ Ibid., pp. 3–4.

³⁰² Owners Corporation Network of Australia Limited, *Submission 61*, p. 9.

³⁰³ Kate Raymond, *Transcript of evidence*, p. 64.

³⁰⁴ Strata Community Association Victoria, *Submission 78*, pp. 7, 10; Energy Efficiency Council, *Submission 58*, p. 4.

³⁰⁵ Owners Corporation Network of Australia Limited, *Submission 61*, p. 12.

³⁰⁶ Ibid.

- assistance to access independent feasibility assessments³⁰⁷
- introducing a high school subject focusing on fundamental electrical skills.³⁰⁸

OCN warned that without targeted workforce development, apartments will continue to face higher costs, limited competition between installers and generic solutions adapted from stand-alone homes instead of apartment-specific innovation.³⁰⁹

In July 2026, the Victorian Government announced additional funding for the expansion of the Electrification Skills Program.³¹⁰ The program offers free specialised training and upskilling for plumbers, electricians and energy workers to boost workforce capacity and in-demand skills needed for the transition to renewable energy.³¹¹ The 2026–27 program expansion includes additional training for switchboard upgrades and the installation of EV chargers, heat pump hot water systems and reverse cycle air conditioners.³¹² Additionally, the program is providing technical support and training for installers working on larger- sized systems to mitigate fire risks and ensure wiring compliance.³¹³

The Committee also heard that electrification in apartment buildings requires strong communication and engagement skills from tradespeople, in addition to formal technical qualifications.³¹⁴ Apartment owner Dr Valerie Kay's submission highlighted the importance of electricians being able to explain complex systems to a broad range of residents with varying degrees of prior knowledge and build trust with the OC throughout the installation process.³¹⁵

FINDING 41: Through the recent expansion of the Electrification Skills Program, the Victorian Government recognises the need to continue increasing the number of qualified electricians and energy workers equipped with specialised skills, training and experience to meet future electrification demands. However, it is unclear if the program offerings will cover electrification in strata environments.

In addition to workforce shortages, apartment electrification projects can take longer than detached housing installations due to the many technical, governance and structural constraints discussed throughout this report. The protracted and often unpredictable timelines associated with strata projects can create cashflow challenges

³⁰⁷ Ibid.

³⁰⁸ Kate Raymond, *Transcript of evidence*, p. 63.

³⁰⁹ Owners Corporation Network of Australia Limited, *Submission 61*, p. 12.

³¹⁰ Hon Jacinta Allan MP, *Free skills training for plumbers and electricians*, media release, 10 July 2026.

³¹¹ Solar Victoria, *Free skills training a boost for Victoria's renewable energy future*, 2026, <<https://www.solar.vic.gov.au/free-skills-training-boost-victorias-renewable-energy-future>> accessed 14 July 2026.

³¹² Hon Jacinta Allan MP, *Free skills training for plumbers and electricians*, media release; Solar Victoria, *Electrification Skills Program in 2026–27*, 2026, <<https://www.solar.vic.gov.au/electrification-skills-program-2026-27>> accessed 14 July 2026.

³¹³ Solar Victoria, *Electrification Skills Program in 2026–27*.

³¹⁴ Dr Valerie Kay, *Submission 57*, p. 4; Greater Dandenong City Council, *Submission 22*, p. 3.

³¹⁵ Dr Valerie Kay, *Submission 57*, p. 4.

for some businesses that rely on government grant programs to fund OC solar installation projects.³¹⁶ These issues are further explored in the next section.

4.5.3 Complex project delivery and long timeframes are limiting industry participation

The Committee heard that the complexity of apartment electrification projects, combined with long and uncertain delivery timelines, is discouraging industry participation and limiting market capacity.³¹⁷ The Solar for Apartments Program disburses the sum of the grant directly to the retailer upon completion of the project.³¹⁸ However, due to the unpredictable and long timeframes associated with these projects, Solar Victoria identified that many retailers are struggling to maintain a sustainable cashflow as the installation process often takes 12 months or longer to complete.³¹⁹ Neil Roberts from NECA echoed Solar Victoria's findings, adding that:

one of the difficulties with existing strata schemes is getting those projects raised, because trying to get a project proposed, adequate advice, the strata managers and the strata committee—getting all of that in line so that electricians can actually get their teeth into those jobs is a significant hurdle.³²⁰

These issues are compounded by late-stage feasibility issues where retailers have spent a significant amount of time and effort with an OC to develop the project proposal, only to discover late into the project that additional enabling works are required (like a switchboard or meter upgrade).³²¹ As outlined in Section 4.1.1, infrastructure upgrades can stall a project or cause an OC to abandon electrification completely if it cannot afford to pay the enabling infrastructure costs.³²² Guy Pritchard from Solar Victoria explained this has led to a shift in retailer behaviour as there is no way for installers to recover costs for the time and resources put into a project that could not proceed. While there is still a high level of engagement from retailers to help OCs get projects over the line, many have become more selective about the projects they pursue and the time and/or resources they dedicate to them, especially once a building has been notified that it requires infrastructure upgrades.³²³

Moreover, the Committee was told that some retailers are targeting buildings that are newer and less complex, meaning that installation paths are more predictable and faster.³²⁴ Solar Victoria also highlighted cost variations between quote and installation stages, further contributing to cashflow pressure for some retailers.³²⁵

³¹⁶ Department of Energy, Environment and Climate Action (DEECA), *Submission 89*, p. 2.

³¹⁷ Guy Pritchard, *Transcript of evidence*, p. 8.

³¹⁸ Solar Victoria, *Solar for Apartments*, 2026, <<https://www.solar.vic.gov.au/apartments#process-for-applying>> accessed 16 June 2026.

³¹⁹ Guy Pritchard, *Transcript of evidence*, p. 8.

³²⁰ Neil Roberts, *Transcript of evidence*, p. 64.

³²¹ Guy Pritchard, *Transcript of evidence*, p. 8.

³²² Deakin University, *Submission 16*, p. 1; Owners at 43 Haines Street, *Submission 44*, p. 2; Greater Dandenong City Council, *Submission 22*, p. 3.

³²³ Guy Pritchard, *Transcript of evidence*, pp. 5, 8–9.

³²⁴ *Ibid.*, p. 5.

³²⁵ Solar Victoria, response to questions on notice, p. 2.

Solar Victoria has tried to adjust eligibility processes so that OCs know whether their building is eligible before they speak with retailers and get quotes, but it is difficult for OCs to ascertain feasibility without obtaining advice from a professional.³²⁶

Adding to the existing workforce strain is the fact that qualified electricians and retailers involved in electrification are in high demand.³²⁷ Solar Victoria noted some retailers are turning to ‘easier markets’ to avoid the complexities of strata electrification, including installing residential batteries through the Australian Government’s Cheaper Home Batteries Program.³²⁸ Moreover, Brendan Lang, the Founder and Chief Executive Officer of Get Off Gas, who is also an electrician, expressed difficulty in knowing where to turn for information as a tradesperson and strata resident trying to navigate the current system and programs to find one source of truth:

Is it your tradie, is it the state government, the local government? There are all these different programs happening in different areas. There needs to be a coordinated effort with a single source of trusted information.³²⁹

Get Off Gas proposed leveraging the role of the SEC to provide reliable information about the different programs offered by Solar Victoria, the VEU (discussed in Chapter 5) and the SEC.³³⁰

As recommended earlier in this chapter, providing additional financial support to assist OCs with the costs of enabling works and integrating feasibility assessments early into existing programs can mitigate some of the cash-flow issues being experienced by retailers.

Guy Pritchard signalled there is an opportunity for retailers to specialise in apartments as the industry continues to mature and retailers can share best practice installation knowledge and learnings from the program, telling the Committee:

We have had about three or four [installers] who are just concentrating on apartments at the moment ... When we get a new retailer interested now, we onboard them, so we are pulling them across all the information and all the learnings we have had to help them establish themselves in there. Yes, it is an immature market, if you like, so that industry and workforce development is pretty important as well.³³¹

The Committee also notes that uptake of the Solar for Apartments Program has been largely concentrated in Melbourne’s inner city LGAs, with the highest participation occurring in Merri-bek, Yarra and Port Phillip.³³² This trend suggests that workforce capacity and market maturity are stronger in metropolitan areas, while regional areas

³²⁶ Guy Pritchard, *Transcript of evidence*, p. 8.

³²⁷ *Ibid.*, p. 6.

³²⁸ *Ibid.*, p. 5.

³²⁹ Brendan Lang, Founder, Get Off Gas, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 21.

³³⁰ *Ibid.*

³³¹ Guy Pritchard, *Transcript of evidence*, p. 6.

³³² *Ibid.*, p. 4.

face additional barriers to program delivery. Solar Victoria advised that expanding the program into regional Victoria will be challenging without greater industry capacity, particularly among retailers.³³³ Guy Pritchard explained that apartment installations are more complex and carry greater financial risk for providers, which can deter participation in less established markets:

For the retailers, it is much more complicated. They are harder installations, they carry more risk, if you like, and they have to carry more cash flow. So it has been a bit of an issue in those areas for us, but we are trying to push more to get retailers on in regional areas at the moment.³³⁴

FINDING 42: Installers can face cashflow challenges with strata electrification and solar projects due to long timelines and late-stage feasibility issues leading many to pursue easier renewable energy projects in detached housing.

RECOMMENDATION 19: That the Victorian Government continue to work closely with industry to overcome cashflow challenges and workforce shortages to improve the capability of installers and retailers working on apartment solar and electrification projects, particularly in regional areas.

³³³ Ibid.

³³⁴ Ibid.

Chapter 5

Embracing complementary measures

As described throughout the report, the many barriers to retrofitting residential solar in apartment buildings make this a long-term or unrealistic prospect for some buildings. That is why it is important that Victoria embraces alternative approaches, which can supplement or augment a physical connection to residential solar.

This chapter explores how home electrification can empower households living in apartment buildings to independently manage their energy consumption. It highlights the importance of building energy-efficient and renewable-ready apartment buildings to ensure future residents can participate in the state's transition to renewable energy. It concludes with an exploration of complementary measures that are already gaining popularity in Victoria and internationally, such as portable plug-in solar systems and virtual power sharing models.

5.1 Apartment electrification helps reduce energy costs

Electrification refers to the gradual replacement of all fossil-fuel appliances (primarily gas) with more modern and energy-efficient substitutes powered by electricity. This can include gas cooking appliances, water and space heaters, and even cars.¹

Apartment electrification delivers important household and societal benefits. More efficient electric appliances can reduce apartment household energy consumption and costs, particularly when paired with a residential solar and/or battery system.² For example, clean energy expert Alan Pears AM noted that '[a] reverse cycle air conditioner uses around a fifth as much electricity as an electric fan heater or gas heater to deliver the same amount of heat'.³ Government advisory body Infrastructure Victoria submitted that '[s]witching from gas to efficient electric appliances when they need replacing can save households around \$1,200 to \$1,300 a year'.⁴

1 Solar Victoria, *From cutting costs to carbon emissions: 5 powerful reasons to electrify your home*, 2026, <<https://www.solar.vic.gov.au/reasons-to-electrify-your-home>> accessed 4 June 2026.

2 Ibid.; Alan Pears AM, *Submission 65*, pp. 10–11; ANU Centre for Energy Systems, *Submission 73*, p. 1; Green Building Council of Australia, *Submission 77*, p. 2; Victorian Council of Social Service, *Submission 86*, p. 2; Infrastructure Victoria, *Submission 20*, p. 1.

3 Alan Pears AM, *Submission 65*, p. 10.

4 Infrastructure Victoria, *Submission 20*, p. 2.

Modern electric appliances can also promote the energy autonomy of households by empowering residents to schedule use when energy is cheapest.⁵ For example, during the middle of the day, which the Victorian Government's Midday Power Saver offer (commencing 1 October 2026) will take advantage of (see Box 5.1).

However, the Australian National University Centre for Energy Systems highlighted the importance of supporting apartment households to change their energy consumption 'behaviours, practices and routines' to maximise the benefits of more efficient appliances.⁶ The Victorian Council of Social Service (VCOSS), the peak body for the social and community sector, pointed out that households can switch the energy usage of some appliances (such as clothes dryers or dishwashers) but not others. For example, households are unlikely to change their heating or cooling patterns, especially if the thermal performance of their apartment is poor.⁷

Box 5.1 Midday Power Saver

From 1 October 2026, the Midday Power Saver will be available to Victorian households that have a smart meter and are customers of a retailer with at least 1,000 customers (including those living in apartment buildings). By offering free power between 11 am and 2 pm every day, it aims to reduce household energy bills and ease demand on the electricity grid during peak periods.

Households can save on their electricity bill by using appliances during the free three-hour window. However, electricity prices outside these hours may be slightly higher and actual savings will depend on how usage is shifted from more expensive peak periods to the middle of the day.

To get the most savings from the Midday Power Saver, households must use energy intensive appliances like electric hot water systems, dishwashers, washing machines, clothes dryers and electric vehicle (EV) chargers during the free power period instead of during more expensive peak times.

The Victorian Government estimates that households could save between \$149 and \$428 depending on their living situation and assuming they shift 5–30% of their energy use to the three-hour free period.

Source: Department of Energy, Environment and Climate Action, *Victorian Midday Power Saver*, 2025, <<https://www.energy.vic.gov.au/households/save-energy-and-money/victorian-midday-power-saver>> accessed 4 June 2026.

5 Solar Victoria, *From cutting costs to carbon emissions*; Dr Asma Aziz and Nishadi Weerasinghe, Electric Energy Society of Australia, Western Australia Chapter, *Submission 9*, p. 2; Department of Energy, Environment and Climate Action, *Victorian Midday Power Saver*, 2025, <<https://www.energy.vic.gov.au/households/save-energy-and-money/victorian-midday-power-saver>> accessed 4 June 2026; ANU Centre for Energy Systems, *Submission 73*, p. 2.

6 ANU Centre for Energy Systems, *Submission 73*, p. 2.

7 Victorian Council of Social Service, *Submission 86*, p. 12.

Switching to modern electrical appliances can increase the health and comfort of homes. Gas appliances can produce harmful fumes or emissions, which can exacerbate childhood asthma. They can also pose hazards such as open flames and gas or carbon monoxide leaks.⁸ Kitchens with gas cooktops and ovens are also hotter to be in, as the heat from the gas flames increases the room temperature as well as heating the pans.⁹

Apartment electrification is also an important step towards achieving Victoria's carbon emission reduction targets. As energy generation transitions from fossil fuels to renewables, all electric homes will also become zero emissions homes.¹⁰ As not-for-profit housing developer Nightingale Housing submitted, '[r]enewable generation without electrification limits emissions reduction'.¹¹ Moreover, as more households switch from gas to electric appliances, the financial burden of maintaining gas infrastructure will be shared among fewer households. This increases the importance of apartment electrification as households that cannot upgrade will have more expensive energy bills.¹²

However, the electrification of apartments is much more complicated than transitioning freestanding homes.¹³ There are several reasons for this (as explored throughout the report), including:

- the prevalence of shared gas appliances that are technically complex, capital intensive and time consuming for owners corporations (OCs) to upgrade (see Chapter 4)
- high energy consumption, particularly in high-rises, that can sometimes surpass the capacity of the local electricity grid (see Chapter 4)
- technical constraints such as low-capacity electrical wiring, outdated switchboards and inadequate roof or plant room space (see Chapter 4)
- complex governance arrangements, which require collective decision-making by diverse stakeholders with competing interests (see Chapter 2)
- the split incentive, as almost half of all apartment households are tenants (see Chapter 3)
- significant upfront cost of purchasing modern, efficient electrical appliances, which can be prohibitive for low-income households (see Chapter 3).

⁸ Solar Victoria, *From cutting costs to carbon emissions*; Brotherhood of St. Laurence, *Submission 83*, p. 3; Victorian Council of Social Service, *Submission 86*, p. 2; Green Building Council of Australia, *A practical guide to electrification: for existing buildings*, 2023, p. 9; Infrastructure Victoria, *Submission 20*, p. 2.

⁹ Green Building Council of Australia, *A practical guide to electrification*, p. 9.

¹⁰ Solar Victoria, *From cutting costs to carbon emissions*; Victorian Council of Social Service, *Submission 86*, p. 2; Infrastructure Victoria, *Submission 20*, p. 1.

¹¹ Nightingale Housing, *Submission 28*, p. 2.

¹² Infrastructure Victoria, *Submission 20*, pp. 2–3; Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 6.

¹³ Brotherhood of St. Laurence, *Submission 83*, p. 3; Dr Wendy Russell, *Apartment electrification is complex, but could apartments lead the way?*, <<https://energysystems.anu.edu.au/apartment-electrification-complex-could-apartments-lead-way>> accessed 4 June 2026.

FINDING 43: It is more complicated and expensive to electrify apartment buildings than freestanding homes due to technical and governance challenges arising from building density, age and resident diversity.

In recognition of these challenges and the important household and societal benefits of home electrification, the Victorian Government has developed several programs to support households (including apartment residents and social housing tenants) to electrify, including:

- *Victoria's Gas Substitution Roadmap*
- the Victorian Energy Upgrades program.

The next two sections examine options for tailoring these programs to better support the electrification of apartments.

5.1.1 Victoria's Gas Substitution Roadmap

In 2022, the Victorian Government launched *Victoria's Gas Substitution Roadmap* (the roadmap) to provide a pathway for ending the use of fossil gas and mandating the full electrification of homes (including apartments) and businesses. It seeks to ensure that all Victorians can take advantage of the renewable and more affordable energy being generated as Victoria's electricity system transitions to renewables. Annual updates have ensured the roadmap stays current.¹⁴ Key reforms underpinning its implementation include:

- from July 2023, capping gas abolishment fees at \$220 (ex GST) to lower the cost of electrification
- from July 2023, all new government buildings are to be built all-electric, including new schools and hospitals
- from May 2024, mandatory 7-star efficiency standards for new homes
- from April 2024, prohibiting Victorian gas distribution businesses from offering inducements to connect to gas or purchase and install gas appliances
- from 1 January 2025, requiring customers to pay the full upfront costs of a new gas connection instead of the cost being shared by all gas users under the Essential Services Commission's updated *Gas Distribution Code of Practice* (bringing gas in line with the practice for new electricity and water connections)
- ongoing expansion of the Victorian Energy Upgrades program (described below)
- from 1 January 2027, new homes are required to be all-electric

¹⁴ Department of Energy, Environment and Climate Action, *Victoria's Gas Substitution Roadmap*, 2026, <<https://www.energy.vic.gov.au/renewable-energy/victorias-gas-substitution-roadmap>> accessed 4 June 2026; Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 5.

- from 1 January 2027, the phased introduction of new building electrification regulations, as well as expanded minimum energy efficiency standards for rental homes (discussed in Chapter 3).¹⁵

Since the introduction of the roadmap and various supporting subsidy programs, the voluntary electrification of homes and businesses has driven down gas use in Victoria (see Figure 5.1).

Figure 5.1 Annual gas use of the average customer, by gas distributor, 2011 to 2024



Source: Victorian Government, *Gas substitution roadmap: update 2025*, 2025, p. 12.

Inquiry stakeholders welcomed the strategic direction set by the roadmap, noting that home electrification is critical to Victoria's clean energy future. However, many felt that it offered little direction or support to overcome the apartment sector's reliance on fossil gas and the many challenges that make electrification more difficult in higher density residential buildings.¹⁶ For example, social change agency Let Me Be Frank said that 'the roadmap and associated policy settings have largely addressed standalone homes or commercial and industrial premises, leaving apartment communities without a clear pathway' to electrification.¹⁷ The City of Melbourne made a similar observation:

State and Federal government policies and programs related to renewables, energy efficiency and electrification have historically focussed on standalone homes, rather than apartment buildings. In many instances, government policy and programs are not

¹⁵ Department of Energy, Environment and Climate Action, *Victoria's Gas Substitution Roadmap*; Department of Energy, Environment and Climate Action, *New electrification and efficiency standards and regulations for Victorian buildings*, 2025, <<https://www.energy.vic.gov.au/households/electric-and-efficiency-standards-for-buildings>> accessed 1 July 2026.

¹⁶ Let Me Be Frank, *Submission 85*, p. 2; City of Melbourne, *Submission 84*, pp. 14–15; Merri-bek City Council, *Submission 76*, p. 11.

¹⁷ Let Me Be Frank, *Submission 85*, p. 2.

fit-for-purpose and lack an understanding of the apartment sector—the legal, technical, and governance requirements.¹⁸

The Committee heard that the varied nature of apartment buildings and the broad range of technical and governance challenges inhibiting their electrification merits a specific policy focus on electrification in this sector. This must include pathways tailored to low-, mid- and high-rise buildings.¹⁹ Pernille Cavanough, President of OC industry peak body the Strata Community Association Victoria (SCA Vic), argued that without specific support for apartment electrification, ‘structural barriers will continue to limit participation by a growing share of [Victoria’s] population’.²⁰

Merri-bek City Council recommended the development of an apartment electrification strategy as part of the roadmap, to ‘ensure that apartment residents are not left behind in the electrification transition’.²¹ The City of Melbourne and Let Me Be Frank called for policy, support and transition timeframes tailored to different building typologies and tiers of OCs.²² The latter argued that this is necessary because ‘a small low-rise walk-up building faces very different challenges to a large high-rise tower with shared gas boiler infrastructure’.²³

The City of Melbourne suggested that policy and support ‘designed with typology-specific pathways ... will have a far greater likelihood of success’.²⁴ It also argued that an apartment electrification strategy should engage all apartment stakeholders and ‘include typology-specific case studies of successful projects, assessment tools and resources, financial support, guidance and connection to suitably qualified service providers that have experience working with apartment buildings’.²⁵

Owners Corporation Network of Australia (OCN), the peak body for strata owners, stated ‘[c]lear guidance on electrification pathways (for example, transitions from centralised gas hot water systems), reduc[es] uncertainty that can lock schemes into outdated technologies’.²⁶ It noted that it is working with Let Me Be Frank on a project focused on developing ‘practical pathways to electrification in apartment buildings, including common property considerations and governance challenges’.²⁷

SCA Vic noted that ‘long-term funding and clear statutory authority for implementation’ are also needed to underpin the success of an apartment electrification strategy.²⁸

¹⁸ City of Melbourne, *Submission 84*, pp. 14–15.

¹⁹ Merri-bek City Council, *Submission 76*, p. 11; Pernille Cavanough, President, Strata Community Association Victoria, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, pp. 40–41; City of Melbourne, *Submission 84*, p. 23; Let Me Be Frank, *Submission 85*, p. 2; Strata Community Association Victoria, *Submission 78*, p. 6.

²⁰ Pernille Cavanough, *Transcript of evidence*, p. 41.

²¹ Merri-bek City Council, *Submission 76*, p. 11.

²² Let Me Be Frank, *Submission 85*, p. 2; City of Melbourne, *Submission 84*, p. 23.

²³ Let Me Be Frank, *Submission 85*, p. 2.

²⁴ City of Melbourne, *Submission 84*, p. 20.

²⁵ *Ibid.*, pp. 20, 23.

²⁶ Owners Corporation Network of Australia Limited, *Submission 61*, p. 17.

²⁷ *Ibid.*, p. 3.

²⁸ Strata Community Association Victoria, *Submission 78*, p. 6.

While not specifically addressing the need for an apartment electrification strategy, several submitters highlighted the importance of supporting OCs to plan sustainability upgrades for their unique building characteristics through building assessments and expert advice.²⁹ Chapter 4 explores how building-specific information and tailored advice assists OCs to navigate building electrification.

FINDING 44: The varied age and typology of apartment buildings combined with the broad range of technical and governance challenges inhibiting their electrification merits a specific policy focus on electrification in this sector.

RECOMMENDATION 20: That the Victorian Government establish an apartment electrification strategy with gas substitution pathways tailored to each building typology (size and age) and owners corporation tier. It should also account for the various shared-gas appliances in use across apartment buildings.

5

5.1.2 Victorian Energy Upgrades program

The Victorian Government has also established programs providing financial support for home electrification. Key among these is the Victorian Energy Upgrades program (VEU), which assists homeowners and renters (including apartment residents), OCs and businesses to improve the energy efficiency of their appliances and buildings by offering discounts and rebates on replacements and upgrades. In doing so, it aims to support the electrification of Victorian homes and businesses, and reduce their carbon emissions, energy use and energy costs.³⁰

Activities eligible under the VEU include:

- replacing gas appliances (such as cooktops and water heaters) with electrical alternatives
- replacing or upgrading the glazing on windows
- installing ceiling insulation
- replacing inefficient electrical appliances with more efficient models (such as fridges, freezers, televisions, washers and dryers).³¹

The VEU does not subsidise the installation of residential solar on apartment buildings.

The Victorian Government is funding VEU discounts and rebates through the sale of Victorian Energy Efficiency Certificates (VEECs). When homeowners and businesses

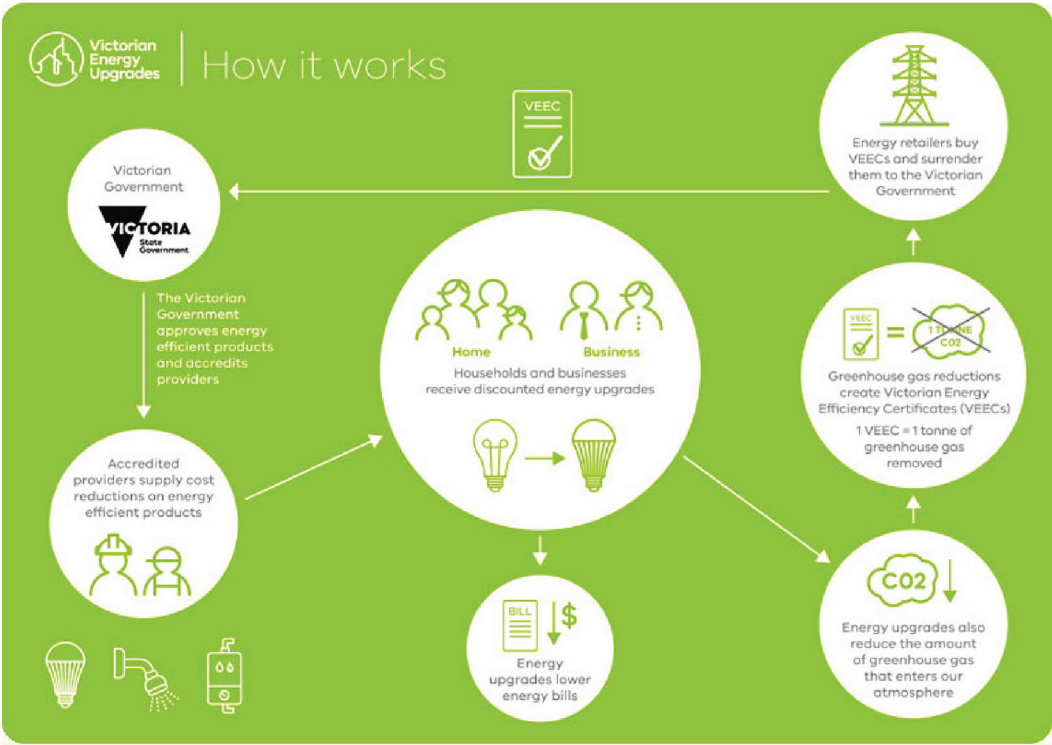
²⁹ City of Melbourne, *Submission 84*, pp. 11, 24; Yarra City Council, *Submission 50*, p. 4.

³⁰ Department of Energy, Environment and Climate Action (DEECA), *About Victorian Energy Upgrades*, 2025, <<https://www.energy.vic.gov.au/victorian-energy-upgrades/about>> accessed 29 May 2026.

³¹ Essential Services Commission, *Overview of VEU activities*, <<https://www.esc.vic.gov.au/victorian-energy-upgrades-program/about-victorian-energy-upgrades-program/overview-veu-activities>> accessed 29 May 2026.

upgrade the energy efficiency of their buildings, a VEEC is created. Each VEEC represents one tonne of avoided greenhouse gas emissions. VEECs can be sold to energy retailers to offset their emissions. The profits of selling VEECs fund the discounts and rebates offered through the VEU. Figure 5.2 provides an overview of these transactions.³²

Figure 5.2 How does the Victorian Energy Upgrades program work?



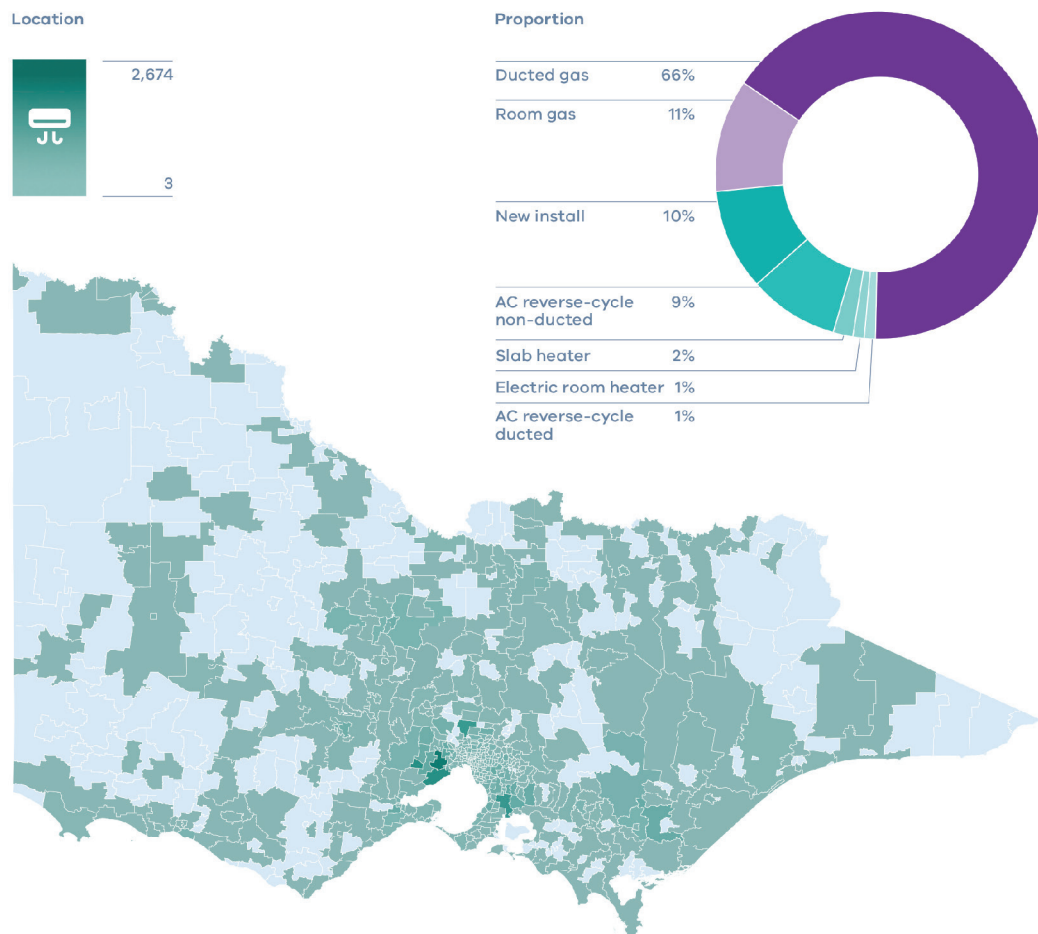
Source: Energy Makeovers, *VEET upgrades to the Victorian Energy Upgrades program*, <<https://energymakeovers.com.au/blog/veet-upgrades-victorian-energy-upgrades-program>> accessed 29 May 2026.

From May 2023 to April 2025, the VEU assisted 73,000 households and businesses to replace gas space heaters with efficient electrical appliances (see Figure 5.3). Another 62,000 households have switched from gas hot water to electric heat pump systems.³³

³² DEECA, *About Victorian Energy Upgrades*.

³³ Victorian Government, *Gas substitution roadmap: update 2025*, 2025, p. 16.

Figure 5.3 Proportion and location of different heaters replaced through the Victorian Energy Upgrades program, to April 2025



Source: Victorian Government, *Gas substitution roadmap: update 2025*, 2025, p. 16.

As with *Victoria's Gas Substitution Roadmap*, Inquiry stakeholders supported the objectives of the VEU but felt that it was ill-suited to supporting electrification in the apartment sector.³⁴ The City of Melbourne described it as a 'positive and foundational' initiative but asserted that 'much more is needed to unlock apartment sector energy upgrades at scale'. It suggested that the uptake of VEU discounts and rebates has been low in the apartment sector.³⁵ Let Me Be Frank said that the VEU does 'not adequately serve the needs of owners corporations or apartment residents'.³⁶

Stakeholders were particularly critical of VEU support for replacing gas or upgrading outdated electrical hot water systems in apartment buildings.³⁷ Environmental advocacy group Environment Victoria said VEU incentives for shared hot water

³⁴ City of Melbourne, *Submission 84*, pp. 14–15, 20; Let Me Be Frank, *Submission 85*, p. 4; Jeremy Sung, Head of Policy, Energy Efficiency Council, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 6; Environment Victoria, *Submission 42*, pp. 5, 9.

³⁵ City of Melbourne, *Submission 84*, pp. 15, 20.

³⁶ Let Me Be Frank, *Submission 85*, p. 4.

³⁷ City of Melbourne, *Submission 84*, p. 15; Environment Victoria, *Submission 42*, p. 5; Energy Efficiency Council, *Submission 58*, p. 3.

systems have been designed for industrial facilities and are not appropriate for apartment buildings.³⁸ The City of Melbourne also reported that these subsidies do not ‘properly consider apartment buildings’ unique challenges relating to built form, strata governance and shared facilities’. For example:

the design of the Victorian Energy Upgrades (VEU) Activity 44 relating to heat pump hot water heating is problematic as it groups apartment buildings in with other industrial energy users such as dairy farms. In practice, the needs of apartment buildings with respect to water heating is very different. The low uptake of this activity by apartment communities is a clear sign that the program is not currently well-suited to the needs and challenges of the apartment sector.³⁹

FINDING 45: The Victorian Energy Upgrades program offers important support for the electrification of freestanding homes and businesses; however, it provides limited offerings specifically tailored to apartment buildings.

The Committee heard that the significant technical and governance challenges, as well as the high cost, of replacing shared-gas heating and hot water systems in apartment buildings merit targeted subsidies and support under the VEU.⁴⁰ Let Me Be Frank recommended that the Victorian Government work with the apartment sector to codesign a VEU stream specifically for apartment buildings (of various typologies) to support OCs to install efficient electric heating, ventilation, air conditioning and hot water systems.⁴¹ Yarra City Council made a similar recommendation and argued that local governments should also be involved in its development as they ‘work most closely with local communities and have proven and ongoing expertise and outcomes in delivering energy and other programs’.⁴²

Environment Victoria argued that the VEU ‘has great potential for apartments’ but should include streams tailored to installing shared solar or hot water systems in different sized and aged apartment buildings.⁴³

The City of Melbourne also called for improving apartment residents’ and OCs’ access to discounts and rebates under the VEU, starting with those for electric hot water systems.⁴⁴ It recommended expanding electrification incentives ‘that are relevant and tailored to the needs and constraints of apartment residents and Owners Corporations’.⁴⁵ For example, advocacy and research group Rewiring Australia

³⁸ Environment Victoria, *Submission 42*, p. 5.

³⁹ City of Melbourne, *Submission 84*, p. 15.

⁴⁰ Ibid.; Environment Victoria, *Submission 42*, p. 5; Let Me Be Frank, *Submission 85*, p. 4; Jeremy Sung, *Transcript of evidence*, p. 6; Yarra City Council, *Submission 50*, p. 4.

⁴¹ Environment Victoria, *Submission 42*, p. 9; Let Me Be Frank, *Submission 85*, p. 4.

⁴² Yarra City Council, *Submission 50*, pp. 1, 4.

⁴³ Environment Victoria, *Submission 42*, p. 9.

⁴⁴ City of Melbourne, *Submission 84*, p. 24.

⁴⁵ Ibid., p. 15.

contemplated VEU funding for apartment residents to install an electrical timer enabling them to schedule their appliance use to take advantage of discount power periods.⁴⁶

Other stakeholders also advocated for targeted government support for the electrification of apartment buildings without specifically referencing the VEU.⁴⁷ Community climate action groups Lighter Footprints and Darebin Climate Action Now suggested ‘widening grants, subsidies and loans to enable more apartments to participate in the transition’ to renewable energy.⁴⁸

There was also some support for low-interest and/or deferred loans, to help OCs to fund electrical infrastructure upgrades (such as wiring or switchboards) necessary to electrify apartment buildings.⁴⁹ For example, Rewiring Australia proposed a government-backed financing initiative it dubbed the ‘Strata Energy Upgrades Scheme’ to help apartment owners fund energy efficiency upgrades without upfront costs or ongoing repayment pressure. The scheme would provide low-interest loans to cover owners’ contributions to special levies for approved energy upgrades, with repayment deferred until the property is sold and indexed to inflation. By removing the need for income-based loan assessments and regular repayments, the scheme would make upgrades more accessible to apartment residents, who often have lower incomes. This approach could reduce financial stress, limit conflict within strata communities, protect the minority of apartment owners who did not support energy upgrades in their building from hardship, and enable more buildings to collectively agree on and implement energy improvements.⁵⁰

The Committee recognises the need to assist apartment owners with the high upfront costs of energy upgrades in Chapter 4 of this report and considers options for reducing financial barriers.

RECOMMENDATION 21: That the Victorian Government work with the apartment sector and local governments to develop means-tested financial support tailored to enable the electrification of apartment buildings of all ages and typologies.

5.1.3 Supporting home charging of electric vehicles in apartment buildings

An important component of apartment electrification is the installation of an electric vehicle (EV) charger to enable residents to easily access this more affordable and

⁴⁶ Rewiring Australia, *Submission 56*, p. 7.

⁴⁷ Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 4; Nightingale Housing, *Submission 28*, p. 2.

⁴⁸ Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 4.

⁴⁹ Ibid., p. 12; Victorian Council of Social Service, *Submission 86*, p. 4.

⁵⁰ Rewiring Australia, *Submission 56*, pp. 2, 4–7; Calum Harvey-Scholes, Head of Research, Rewiring Australia, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, pp. 17–18.

environmentally friendly transport.⁵¹ EV charging facilities are becoming more common in apartment buildings, but about 1 in 4 Victorians live in a strata building that is not set up with access to these facilities.⁵² Those apartment buildings that do have charging facilities are often limited in the number of chargers that can be used simultaneously due to the building's electrical infrastructure.⁵³ As Lighter Footprints and Darebin Climate Action Now submitted, the financial imperative for switching to an EV is reduced for households that cannot charge at home.⁵⁴

OCs may be reluctant to install EV charging facilities due to concerns about fire risk. A lack of power points in car parking spaces, low-capacity electrical wiring and outdated switchboards also prevent some buildings from installing EV chargers.⁵⁵ The high upfront cost of installation is also a barrier to uptake and, as community advocacy group Solar Citizens observed, Victoria 'lacks a targeted program to fund the adoption of EV charging solutions in apartments'.⁵⁶

Stakeholders supported expanding apartment residents' access to EV chargers by funding retrofit programs and mandating this technology in new buildings.⁵⁷ Renewable energy equipment manufacturer NOX Energy recommended legislative reform to establish apartment residents' 'right to charge' an EV. It also called for building regulations to recognise a wider range of charging solutions and for subsidies to support installation.⁵⁸ Solar Citizens recommended subsidising EV chargers in apartment buildings (including funding any necessary electrical upgrades).⁵⁹

Several stakeholders highlighted the potential of EVs to function as a home battery through bi-directional charging.⁶⁰ Bi-directional charging technology allows an EV to both draw electricity from the grid to charge its battery and discharge stored energy outward to power external devices, a home or the electricity grid. It enables EVs to store renewable energy generated by residential solar to power a home during periods of low energy generation (such as the evenings).⁶¹ Lighter Footprints and Darebin Climate Action Now suggested that bi-directional charging could be transformative in apartment buildings as the volume of cars parked at any given time is likely to provide significant storage capacity.⁶² Science advocacy group the Australian Academy

⁵¹ Yarra Energy Foundation, *Submission 48*, p. 2.

⁵² Energy Consumers Australia, *Submission 87*, p. 2.

⁵³ Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 7.

⁵⁴ Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 9.

⁵⁵ *Ibid.*, pp. 7–9.

⁵⁶ Solar Citizens, *Submission 72*, pp. 4, 13.

⁵⁷ Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 11; Yarra Energy Foundation, *Submission 48*, p. 2; Master Electricians Australia, *Submission 41*, pp. 3, 5; NOX Energy Pty Ltd, *Submission 6*, p. 4.

⁵⁸ NOX Energy Pty Ltd, *Submission 6*, p. 4.

⁵⁹ Solar Citizens, *Submission 72*, p. 13.

⁶⁰ Alan Pears AM, *Submission 65*, p. 10; Master Electricians Australia, *Submission 41*, p. 7; Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 9.

⁶¹ RACV, *Guide to bidirectional charging in Australia: V2G, V2H & V2L*, 2025, <<https://www.racv.com.au/royalauto/transport/electric-vehicles/bidirectional-charging-explained.html>> accessed 15 June 2026.

⁶² Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 10.

of Technological Sciences and Engineering (AATSE) suggested that bi-directional charging supplants the need for a home battery by providing similar capabilities:

A typical EV battery holds around 60 kWh of energy—three times the daily usage of an average household and six times that of a typical household battery. This substantial energy storage could be used to help manage household energy use, storing energy during minimum demand periods and using it during peak demand periods.⁶³

It noted that enabling this technology would be especially beneficial to renters who face additional barriers to accessing home battery systems.⁶⁴

However, bi-directional EV charging is not yet widely available in Victoria, although steps toward this are progressing (such as new technology standards). Bi-directional charging requires home chargers and the EV itself to have this capability specifically built in. Very few EVs currently offer bi-directional charging, and Victoria currently lacks the regulatory framework permitting this technology to be used.⁶⁵

Portable battery manufacturer Smartizer called for the adoption of clear technology standards and market rules to realise the benefits of bi-directional charging. It argued Victoria must plan for incorporating this technology into new apartment buildings today.⁶⁶

Inquiry into electricity supply for electric vehicles

The Victorian Legislative Council's Economy and Infrastructure Committee received similar evidence as part of its 2026 Inquiry into electricity supply for electric vehicles. The Legislative Council Committee was tasked with examining how EVs can be 'harmonise[d]' with broader electricity supply and demand, including better aligning charging with peaks in supply, rolling out chargers to meet demand and strategies to increase EV ownership, including the facilitation of bi-directional charging.⁶⁷

The Legislative Council Committee found that '[a]n effective electric vehicle charging infrastructure rollout will support greater renewable energy integration and improved management of peak electricity demand in Victoria'.⁶⁸ It also observed that '[t]here is a strong preference for home-based charging among EV drivers in Australia'.⁶⁹ The Legislative Council Committee made several recommendations aimed at accelerating the roll out of EV chargers (both privately owned and public), including

⁶³ Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 9.

⁶⁴ Australian Academy of Technological Sciences and Engineering, *Submission 47*, p. 1.

⁶⁵ Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 9; Master Electricians Australia, *Submission 41*, p. 3.

⁶⁶ Smartizer Pty Ltd, *Submission 37*, pp. 6, 8.

⁶⁷ Parliament of Victoria, *Inquiry into electricity supply for electric vehicles*, <<https://www.parliament.vic.gov.au/electricvehicleinquiry#terms>> accessed 15 June 2026.

⁶⁸ Parliament of Victoria, Legislative Council Economy and Infrastructure Committee, *Inquiry into electricity supply for electric vehicles*, 2026, p. 47.

⁶⁹ *Ibid.*, p. 93.

‘[t]hat the Victorian [G]overnment implement policy settings that speed and scale up the deployment of public EV charging’.⁷⁰

The Legislative Council Committee also received evidence highlighting the potential of bi-directional charging. It heard that increased regulatory clarity, consistent national standards and initiatives to build market confidence are needed to increase uptake of bi-directional charging.⁷¹

The Legislative Council Committee found that bi-directional charging offers ‘significant benefits to consumers and Victoria’s electricity system, enabling electric vehicles to act as mobile energy assets that can strengthen grid reliability and capacity’.⁷² It recommended that ‘the Victorian Government fund targeted programs, trials, research or demonstration projects for bidirectional technologies to build market and consumer confidence’.⁷³

FINDING 46: Apartment electrification that incorporates electric vehicle charging can support households to access more affordable and renewable transport. It may also supplant the need for residential batteries as bi-directional charging becomes more common.

5.2 Planning for environmentally sustainable apartment buildings

Stakeholders noted that Victoria’s planning system plays a critical role in ensuring new apartment buildings are energy efficient, equipped with residential solar or are renewable ready, to avoid the need for costly and complicated retrofits later.⁷⁴ A joint submission from the Victorian Greenhouse Alliances (VGAs), a climate action advocacy body, and the Council Alliance for a Sustainable Built Environment (CASBE), an association of local governments, noted that the Committee’s Inquiry highlights the complexity of retrofitting renewable energy systems on existing apartment buildings. They asserted that:

This means it’s critical that on-site renewable energy for new developments is addressed upstream, and designed into the development through the planning and building approvals processes. The early design stage ... is when careful consideration can be given to roof design, including pitch and orientation for efficient solar as well as competing demands on roof space such as for other plant and equipment or communal areas.⁷⁵

⁷⁰ Ibid., p. 98.

⁷¹ Ibid., pp. 86–87.

⁷² Ibid., p. 87.

⁷³ Ibid.

⁷⁴ Merri-bek City Council, *Submission 76*, p. 12; Heidi Lee Douglas, Chief Executive Officer, Solar Citizens, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 19; Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 5.

⁷⁵ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 5.

In Victoria, planning and decision-making in relation to development occurs under the *Planning and Environment Act 1987* (Vic) (the Planning Act). The Planning Act:

- sets out objectives for development
- establishes the roles of the Minister, government departments and local governments in relation to development
- provides the legal basis for policies, procedures and controls for developing land (such as the Victoria Planning Provisions).⁷⁶

The Victoria Planning Provisions are a key component of the planning framework. They provide a statewide template from which all local planning schemes are constructed. They set out statewide planning policies and a complete set of standard planning provisions, such as zones and overlays. In doing so, the Victoria Planning Provisions ensure that all local planning schemes across the state take the same format and include consistent policy objectives, provisions and controls for development.⁷⁷ The importance of sustainable land use and development is referenced throughout the Victoria Planning Provisions and, as a result, is included throughout all local planning schemes.⁷⁸

In addition to the standard sustainability requirements of the Victoria Planning Provisions, many local governments have incorporated a specific environmentally sustainable development (ESD) policy into their local planning scheme.⁷⁹ ESD policies are typically the same in each municipality except for variations in the size and scale of development, which must comply with policy requirements.⁸⁰ Energy performance is a key component of these policies and encourages developers to '[r]educe both energy use and energy peak demand through design measures'.⁸¹ Design measures can include elements like the orientation of the development, shading, and the '[i]nclusion of or space allocation for renewable technologies'.⁸²

The Committee heard that incorporating ESD policies into local planning schemes has delivered more energy-efficient apartments and multi-unit dwellings, and increased access to renewable and affordable energy.⁸³ For example, Banyule City Council noted that in the 2024–25 financial year, its ESD policy delivered:

- A 40% reduction in the number of developments using gas.

⁷⁶ Department of Transport and Planning, *Legislation and regulations*, 2024, <<https://www.planning.vic.gov.au/guides-and-resources/legislation-regulation-and-fees/legislation-and-regulations>> accessed 21 May 2026.

⁷⁷ Department of Transport and Planning, 2. *The VPP and planning schemes*, 2025, <<https://www.planning.vic.gov.au/guides-and-resources/guides/practitioners-guide-to-victorias-planning-schemes/the-vpp-and-planning-schemes>> accessed 21 May 2026.

⁷⁸ Council Alliance for a Sustainable Built Environment, *State and local planning policy*, <<https://www.casbe.org.au/what-we-do/state-local-planning-policy>> accessed 21 May 2026.

⁷⁹ For example, Yarra City Council, Greater Dandenong City Council, Knox City Council, Brimbank City Council.

⁸⁰ Council Alliance for a Sustainable Built Environment, *State and local planning policy*; Merri-bek City Council, *Submission 76*, p. 12.

⁸¹ For example, see: *Banyule planning Scheme*, c 15.01-2L-02.

⁸² For example, see: *Banyule planning Scheme*, c 15.01-2L-02.

⁸³ Merri-bek City Council, *Submission 76*, p. 12; Banyule City Council, *Submission 29*, p. 2.

- An increase in average NatHERS [home energy] ratings for Class 2 buildings from 7.10 to 7.12 Stars (above minimum standards).
- A reduction in greenhouse gas emissions produced by developments from 53% to 28% (this excludes the beneficial impact of onsite solar PV).
- Solar PV systems installed on more than 54% of the projects assessed.
- Growth in total installed solar PV capacity from 0.73 MW to 1.13 MW, and an increase in annual solar PV system installations from 120 to 246.⁸⁴

Merri-bek City Council also asserted that the ‘energy efficiency of new apartments and townhouses [has] greatly improved’ due to its ESD policy, delivering cost savings for residents.⁸⁵ VGAs and CASBE noted that while ESD policies have delivered solar in apartments, it is typically limited to supplying energy to the common areas of a building.⁸⁶

FINDING 47: Incorporating high environmentally sustainable development standards in planning schemes has helped to ensure that future apartment buildings incorporate access to renewable energy generation.

Several local governments drew the Committee’s attention to a joint planning scheme amendment moved in 2022 to raise ESD standards across all Victorian planning schemes.⁸⁷ The amendment, known as the ‘Elevating ESD Targets Planning Policy Amendment’, is described in Box 5.2.

Some local governments called for the Victorian Government to approve the Elevating ESD Targets Planning Policy Amendment.⁸⁸ Merri-bek City Council argued that until the amendment progresses, ‘apartment developments continue to be approved without adequate sustainability measures, necessitating costly future retrofits for apartment owners’.⁸⁹ The City of Boroondara suggested that the amendment offers a ‘straightforward pathway’ for mandating residential solar as part of all new units, townhouses and apartment buildings as well as high standards for energy efficiency.⁹⁰

The Committee appreciates that the Elevating ESD Targets Planning Policy Amendment sets high standards for energy efficiency and renewable energy, which would be transformative for the apartment sector. However, it also recognises that the impact of the amendment is much broader than the apartment sector and may have implications for the development of affordable housing. The Victorian Government should carefully consider the merits of this proposal, balancing increasing apartment residents’ access to renewable energy with increasing affordable housing.

⁸⁴ Banyule City Council, *Submission 29*, p. 2.

⁸⁵ Merri-bek City Council, *Submission 76*, p. 12.

⁸⁶ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 5.

⁸⁷ Banyule City Council, *Submission 29*, p. 2; Merri-bek City Council, *Submission 76*, p. 13; City of Boroondara, *Submission 71*, p. 11.

⁸⁸ Merri-bek City Council, *Submission 76*, p. 13; Banyule City Council, *Submission 29*, p. 3; City of Boroondara, *Submission 71*, p. 11.

⁸⁹ Merri-bek City Council, *Submission 76*, p. 13.

⁹⁰ City of Boroondara, *Submission 71*, p. 11.

Box 5.2 Elevating ESD Targets Planning Policy Amendment

On 21 July 2022, CASBE led 24 councils to jointly lodge a planning scheme amendment—the Elevating ESD Targets Planning Policy Amendment—seeking to increase environmentally sustainable development standards for new buildings. The amendment aims to better protect the natural environment, reduce energy and resource consumption, and support the health and wellbeing of future occupants.

The amendment proposed higher standards for energy efficiency and generation in new developments (all residential and some commercial) including:

- requiring net zero carbon emissions from operation use
- supporting the inclusion of renewable energy generation onsite
- requiring higher standards of energy efficiency
- reducing pressure on energy networks
- supporting local energy management and storage.

A Victorian Government response to the amendment remained outstanding as of May 2026, around four years after lodgement.

Sources: Council Alliance for a Sustainable Built Environment, *Elevating ESD targets*, 2026, <<https://factsheets.bess.net.au/buildings/elevating-esd-targets.html>> accessed 21 May 2026; Council Alliance for a Sustainable Built Environment, *Elevating ESD targets planning policy amendment*, <<https://www.casbe.org.au/elevating-esd-targets>> accessed 21 May 2026.

The Committee also heard that new streamlined planning approval pathways established through the new Mid-Rise Code and the Townhouse and Low-Rise Code (described in Chapter 1) allow developers to circumvent local governments' existing ESD policies.⁹¹ Building proposals that meet these codified development standards are 'deemed to comply' and do not need to go through a full merit assessment by the responsible local government.⁹² VGAs and CASBE noted that while the two codes require some buildings to set aside roof space for solar, they fall short of requiring onsite residential solar or any supporting infrastructure.⁹³ They were concerned that these codes are delivering townhouses and apartment buildings that are not renewable ready:

For example, one council reported that in a recent planning application for a residential development, which included over 100 apartments in duplex arrangement (two-storey buildings), each pair of duplexes had access to over 80sqm of roof, but there was no mechanism to consider appropriate roof form or orientation for future solar.⁹⁴

⁹¹ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 5; Amaya de Silva, Coordinator, Climate Action, City of Boroondara, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 35; Merri-bek City Council, *Submission 76*, p. 12; City of Boroondara, *Submission 71*, pp. 6–8.

⁹² Department of Transport and Planning, *Introducing the Mid-Rise Code*, 2026, <<https://www.planning.vic.gov.au/news/articles/introducing-the-mid-rise-code>> accessed 21 April 2026.

⁹³ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 5.

⁹⁴ Ibid.

Banyule City Council provided similar evidence.⁹⁵ The City of Boroondara noted that the Mid-Rise Code also fails to prevent development from overshadowing the pre-existing residential solar systems of neighbouring buildings. It said that this will discourage others in the community from installing residential solar as their future solar access (that is, access to direct sunlight without obstruction) is not protected.⁹⁶

The Merri-bek City Council compared planning applications submitted in 2024–25 before the Townhouse and Low-Rise Code was introduced with current (2025–26) applications and found that ‘the energy performance of new townhouses have reduced significantly’:

- Average NatHers rating [of dwellings was] down 0.7%
- Solar PV [photovoltaic] provided down 86.2%
- EV charging spaces down 83.4%
- Gas-free development up 4.8%
- Natural ventilation down 77.3%
- Double-glazed windows down 77.6%.⁹⁷

Several local governments called for reestablishing and strengthening ESD requirements for townhouses and apartments, including mandating residential solar.⁹⁸ The City of Greater Dandenong suggested that stronger planning requirements are needed to meet Victoria’s renewable energy generation targets.⁹⁹ The City of Boroondara argued for requiring solar, rather than just solar friendly roofs.¹⁰⁰ This would avoid all the challenges involved in retrofitting solar, such as the high OC approval threshold. VGAs and CASBE argued that planning controls should require onsite renewable energy generation on new apartment buildings.¹⁰¹ Other stakeholders also called for mandating residential solar in all new apartment buildings without specifically referring to Victoria’s planning controls.¹⁰²

Banyule City Council and community organisation the Banyule Ratepayers Action Group Inc. also suggested that planning controls specifically for activity centres could be revised to embed ESD requirements into higher density development and could ‘mandate or incentivise’ renewable-ready apartment buildings.¹⁰³

⁹⁵ Banyule City Council, *Submission 29*, p. 2; Merri-bek City Council, *Submission 76*, pp. 12–13; Pene Winslade, Director, Place and Environment, Merri-bek City Council, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 35; Amaya de Silva, *Transcript of evidence*, p. 35; Victoria Hart, Manager, Sustainability and Climate, Merri-bek City Council, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 35.

⁹⁶ City of Boroondara, *Submission 71*, p. 7.

⁹⁷ Merri-bek City Council, *Submission 76*, pp. 12–13.

⁹⁸ Greater Dandenong City Council, *Submission 22*, p. 5; City of Boroondara, *Submission 71*, pp. 11–12; Banyule City Council, *Submission 29*, p. 3.

⁹⁹ Greater Dandenong City Council, *Submission 22*, p. 5.

¹⁰⁰ City of Boroondara, *Submission 71*, p. 11.

¹⁰¹ Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment, *Submission 43*, p. 5.

¹⁰² Associate Professor Nicola Willand, et al., *Submission 27*, pp. 6, 10; Australian Academy of Technological Sciences and Engineering, *Submission 47*, p. 1.

¹⁰³ Banyule Ratepayers Action Group Inc., *Submission 14*, p. 2; Banyule City Council, *Submission 29*, p. 3.

The Committee appreciates that requiring residential solar from the design and construction phase avoids the complexity and costs of retrofitting energy generation and storage. However, these objectives must be carefully balanced against the importance of increasing the supply of affordable housing close to amenities and services. The new codified planning approval pathways were introduced to make it faster and more affordable to build new homes in activity centres across Victoria.¹⁰⁴ New requirements should not be inserted without careful consideration of how it will impact housing supply. Moreover, the higher density development permitted in activity centres may mean that offsite renewable energy generation is more viable than rooftop solar.

5.3 Better solar access under the National Construction Code

The Committee heard some advocacy for raising the renewable energy requirements for new apartment buildings beyond those established by the current National Construction Code (NCC).¹⁰⁵

The NCC is a national framework that sets out the technical requirements for the ‘safety, health, amenity, accessibility and sustainability’ of certain buildings. It is maintained and updated by national regulatory body the Australian Building Codes Board and given legal effect through state and territory legislation.¹⁰⁶ In Victoria, this occurs through the *Building Act 1993* (Vic) and the *Building Regulations 2018* (Vic). While the NCC is a national framework, Victoria applies variations, additions and deletions that override the national technical requirements where necessary.¹⁰⁷

The most current NCC, known as ‘NCC 2025’ was released and adopted by Victoria on 1 May 2026 with some variations from the national framework.¹⁰⁸ NCC 2025 mandates rooftop solar on buildings where there is roof space that is appropriately pitched and not excessively shady. It does not specify whether this should be connected to common areas, individual lots or both.¹⁰⁹

The NCC is typically updated every three years based on industry research, public feedback and policy directions set by Australian governments.¹¹⁰ However, on 22 October 2025, Australian federal, state and territory Building Ministers agreed to pause further residential changes to the NCC until mid-2029 (except for essential

¹⁰⁴ Victorian Government, *Automatic approvals for townhouses and mid-rise apartments*, 2026, <<https://www.vic.gov.au/automatic-approvals-townhouses>> accessed 21 May 2026.

¹⁰⁵ Solar Citizens, *Submission 72*, pp. 4, 8–9; City of Boroondara, *Submission 71*, p. 12.

¹⁰⁶ Australian Building Codes Board, *About the NCC*, <<https://ncc.abcb.gov.au/about-ncc/about-ncc>> accessed 21 May 2026; Australian Building Codes Board, *National Construction Code*, <<https://ncc.abcb.gov.au>> accessed 14 July 2026.

¹⁰⁷ Building and Plumbing Commission, *NCC 2025 amended variations*, <<https://www.vba.vic.gov.au/building/regulatory-framework/ncc-2022/ncc-2025-amended-variations>> accessed 21 May 2026; Department of Transport and Planning, *Understanding standards and regulations*, <<https://www.building.vic.gov.au/before-you-start-building/building-standards-in-victoria>> accessed 14 July 2026.

¹⁰⁸ Australian Building Codes Board, *NCC 2025 state and territory adoption information*, <<https://ncc.abcb.gov.au/ncc-2025/ncc-2025-state-and-territory-adoption-information>> accessed 21 May 2026.

¹⁰⁹ *National Construction Code 2025*, Part J9D5.

¹¹⁰ Australian Building Codes Board, *Lifecycle of the NCC*, <<https://ncc.abcb.gov.au/about-ncc/ncc-lifecycle>> accessed 21 May 2026.

quality and safety measures) to ‘provide certainty to industry, allowing builders to invest with confidence in workforce development and innovation-related activities’.¹¹¹ The NCC will also be streamlined ‘to improve useability’ during the pause.¹¹²

Solar Citizens expressed concern that NCC 2025 omits any requirement to connect residential solar to individual lots in apartment buildings. It suggested that when solar is limited to supplying building common areas, apartment residents ‘often receive little to no direct reduction in their individual electricity bills’.¹¹³ It was not alone in recommending that the Victorian Government require solar in apartments to be connected to individual lots ‘wherever technically feasible’.¹¹⁴ Solar retailer Allume Energy suggested that this will also help ensure residents of buildings with embedded networks have access to more affordable and renewable energy.¹¹⁵

The City of Boroondara advocated for amending NCC 2025 to require higher energy efficiency in apartment buildings ahead of the next NCC update.¹¹⁶

The Committee acknowledges that residential solar delivers the biggest energy cost savings to apartment residents when it is connected to both common areas and individual homes. However, it also recognises that rooftop solar is often inadequate for this purpose in tall buildings where roof space is limited and there are many households. While building integrated photovoltaics have the potential to overcome this challenge, this technology is still maturing in the Victorian apartment sector (as explored in Chapter 4). The Committee believes it is too early to mandate that all solar installed on apartment buildings be connected to both individual lots and common areas.

5.4 Plug-in solar to supplement apartment tenants’ access

Many stakeholders were enthusiastic about the potential for portable plug-in solar and batteries to expand access to renewables for apartment residents, particularly renters and social housing tenants.¹¹⁷

As described in Chapter 1, plug-in solar and batteries are small portable systems that can be set up on balconies to supply electricity to households via a standard power point.¹¹⁸ They do not require professional installation or access to roof space, are more affordable than rooftop solar and can be packed up and moved to another location

¹¹¹ Australian Government, *Meeting communiqué: building ministers’ meeting, October 2025*, 2025, <<https://treasury.gov.au/media-release/meeting-communique-building-ministers-meeting-october-2025>> accessed 21 May 2026.

¹¹² Ibid.

¹¹³ Solar Citizens, *Submission 72*, p. 9.

¹¹⁴ Ibid.; Smart Energy Council, *Submission 32*, pp. 2, 4; Allume Energy, *Submission 31*, p. 3.

¹¹⁵ Allume Energy, *Submission 31*, p. 3.

¹¹⁶ City of Boroondara, *Submission 71*, p. 12.

¹¹⁷ Glen Morris, General Manager, Smart Energy Lab, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 24; Associate Professor Nicola Willand, et al., *Submission 27*, pp. 3, 13, 20; Solar Citizens, *Submission 72*, p. 11; Victorian Trades Hall Council, *Submission 60*, p. 7; Smartizer Pty Ltd, *Submission 37*, pp. 1–8; Smart Energy Lab, *Submission 26*, pp. 2, 4–5.

¹¹⁸ Commissioner for Residential Tenancies, *Submission 82*, p. 2; Associate Professor Nicola Willand, et al., *Submission 27*, p. 12; Owners Corporation Network of Australia Limited, *Submission 61*, p. 3; Victorian Council of Social Service, *Submission 86*, p. 13; Neil McFarlane, Head, Business Development and Government, Smartizer, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, pp. 30–31.

if required.¹¹⁹ Plug-in systems can also provide a back-up source of power during outages.¹²⁰

Stakeholders argued that plug-in systems could empower renters, improving their energy security, independence and control over their energy costs.¹²¹ Technology field testing company Smart Energy Lab said that plug-in systems would help provide renters with an affordable and credible ‘entry point’ into the state’s energy transition and improve energy equity.¹²²

Apartment residents can maximise the benefits of a portable plug-in system by combining solar panels with a battery. Batteries allow solar-generated energy and energy purchased at discounted rates (wholesale, off peak or solar tariffs) to be stored for use during periods of peak consumption and cost (such as the evening when solar generation is low).¹²³ The incorporation of artificial intelligence into some plug-in solar and battery systems is also enhancing their efficiency by optimising charging and discharging to meet demand.¹²⁴ Some plug-in systems have modular components that enable several panels or batteries to be combined to create a larger system.¹²⁵

Neil McFarlane, Head of Business Development and Government at Smartizer, argued that plug-in systems could be quickly implemented for the almost immediate benefit of apartment residents:

we cannot ask renters to wait for years for complex strata agreements or limit our focus to new luxury developments. We need a solution for the existing legacy housing stock today. The immediate answer is portable plug-and-play innovation ... because they do not require permanent building modifications. It simply plugs into the three-pin plug in the home—it is that simple.¹²⁶

Smartizer also suggested that plug-in systems could support apartment residents to participate in virtual power plants (explored in Section 5.5) without requiring property ownership.¹²⁷

Other organisations consulted throughout the Inquiry were more measured about the potential of plug-in solar to increase apartment residents’ access to more affordable and renewable energy. They argued that plug-in systems are a supplementary option, not a solution to equitable access, as the benefits can be marginal when systems are used incorrectly or on poorly situated balconies.¹²⁸ Consumer advice and advocacy

¹¹⁹ Associate Professor Nicola Willand, et al., *Submission 27*, pp. 3, 12–14.

¹²⁰ Alan Pears AM, *Submission 65*, p. 10.

¹²¹ Yarra Energy Foundation, *Submission 48*, p. 2.

¹²² Smart Energy Lab, *Submission 26*, pp. 6, 12.

¹²³ Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 10; City of Melbourne, *Submission 84*, p. 11; David McElrea, Chief Advocacy Officer, Smart Energy Council, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 7; Smartizer Pty Ltd, *Submission 37*, p. 4.

¹²⁴ Associate Professor Nicola Willand, et al., *Submission 27*, p. 20.

¹²⁵ Ibid.

¹²⁶ Neil McFarlane, *Transcript of evidence*, p. 30.

¹²⁷ Smartizer Pty Ltd, *Submission 37*, p. 5.

¹²⁸ Collaboration on Energy and Environmental Markets, University of New South Wales, *Submission 80*, p. 3; Victorian Council of Social Service, *Submission 86*, p. 13; Financial Counselling Victoria, *Submission 36*, p. 2.

body Financial Counselling Victoria was concerned that low-income rental households 'already experiencing financial stress' may invest in plug-in solar and batteries and find that they do not materially reduce their energy costs. It also argued that individual households shouldn't bear the responsibility and cost of Victoria's transition to renewable energy and called for 'systemic reform' to increase access:

Renewable energy access should not depend on individual households purchasing and managing their own small-scale equipment, but should instead be addressed through building design, regulation, and shared renewable infrastructure.¹²⁹

Lighter Footprints and Darebin Climate Action Now also pointed out in a joint submission that renters may hesitate to invest in plug-in systems due to the 'short and uncertain' nature of rental leases. Renters' next apartment might not be appropriately orientated for solar or may have outdated electrical infrastructure unsuitable for a plug-in system.¹³⁰ The Committee also heard that balcony-mounted systems are not appropriate for high-rise apartments where stronger winds increase the risk of dislodgement.¹³¹

At the moment, plug-in solar and batteries are not permitted in Victoria (and Australia more broadly).¹³² Current regulations require residential solar and battery systems to be installed by a qualified electrician, permanently fixed to a property, and subjected to safety inspections and testing to ensure compliance with Australian Standards and Victorian safety regulations.¹³³

Glen Morris, General Manager of Smart Energy Lab, noted that in addition to the lack of suitable regulation, there are also some questions about the safety of deploying plug-in solar and batteries in Victoria's unique electrical system. For example, older safety switches (which monitor and turn off electricity if it is unsafe) may not work when electricity is being supplied to (rather than drawn from) a household power point.¹³⁴ The Committee also heard that plug-in solar cannot be safely used in older apartment buildings with outdated meter boxes or wiring ill-equipped for the higher electrical loads delivered by plug-in solar.¹³⁵

However, the widespread adoption of plug-in solar and batteries internationally shows that their technical and safety challenges can be successfully managed.¹³⁶ Case Study 5.1 describes the popularity of plug-in systems in Germany.

¹²⁹ Financial Counselling Victoria, *Submission 36*, p. 2.

¹³⁰ Lighter Footprints and Darebin Climate Action Now, *Submission 51*, pp. 10, 12.

¹³¹ City of Melbourne, *Submission 84*, p. 11; Robert Heron, *Submission 8*, p. 1.

¹³² Owners Corporation Network of Australia Limited, *Submission 61*, p. 3; Smart Energy Lab, *Submission 26*, p. 4; Glen Morris, *Transcript of evidence*, p. 24.

¹³³ Smart Energy Lab, *Submission 26*, p. 4; Associate Professor Nicola Willand, et al., *Submission 27*, p. 20.

¹³⁴ Glen Morris, *Transcript of evidence*, pp. 24–25.

¹³⁵ Owners at 43 Haines Street, *Submission 44*, p. 5; Dr Mike Roberts, Senior Research Fellow, Collaboration on Energy and Environmental Markets, University of New South Wales, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, pp. 27–28.

¹³⁶ Associate Professor Nicola Willand, School of Property, Construction and Project Management, RMIT University, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 5; Smart Energy Lab, *Submission 26*, pp. 4–5.

Case Study 5.1 ‘Balkonkraftwerke’ (plug-in solar and battery systems) in Germany

Plug-in solar and battery systems, known as ‘balkonkraftwerke’ in Germany (translated to ‘balcony power plant’), are already mainstream in many European countries and in parts of the United States.

Germany was an early adopter of the technology and has national technical standards for plug-in products to ensure user safety. Community education and simulation tools assist apartment residents to assess the potential benefit of investing in plug-in solar and batteries in terms of energy output and cost savings. Apartment residents can purchase an 800-watt system ‘off-the-shelf’ in stores such as Aldi and IKEA, which also assist users to register their system. Systems such as the IKEA product pictured below typically cost between €500–€1,500. Some local governments offer subsidies to assist low-income households to make this investment.

Figure 5.4 Balkonkraftwerk for sale in IKEA



Source: IKEA, *Balkonkraftwerke*, 2026, <<https://www.ikea.com/de/de/energy-services/plug-in-solar>> accessed 28 May 2026.

(Continued)

Case Study 5.1 Continued

To date, there are over 1.2 million registered plug-in systems in operation in Germany. Payback times in Europe are typically 3.5 to 7 years, and legislation safeguards the right of tenants and owner-occupiers to install this technology on their apartment balcony. Installation is restricted to one system per household, but this can be in addition to rooftop solar. Households can generate their own power for self-consumption, saving on purchasing costs and carbon emissions.

In Germany, apartment residents can also buy standardised balcony mounting systems to safely deploy plug-in solar panels on a balcony.

Sources: Owners Corporation Network of Australia Limited, *Submission 61*, p. 3; Glen Morris, General Manager, Smart Energy Lab, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 3; Smart Energy Lab, *Submission 26*, pp. 3, 12; Associate Professor Nicola Willand, School of Property, Construction and Project Management, RMIT University, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 7; Associate Professor Nicola Willand et al., *Submission 27*, pp. 13–14; Alan Pears AM, *Submission 65*, p. 9; Property Council of Australia, *Submission 75*, p. 4; Solar Citizens, *Submission 72*, p. 11; Victorian Trades Hall Council, *Submission 60*, p. 7; Smartizer Pty Ltd, *Submission 37*, p. 4.

A group of interdisciplinary researchers at RMIT University, led by Associate Professor Nicola Willand, also pointed out that uptake in Germany has demonstrated the potential for large private landlords (such as community housing organisations) to share in the benefits of deploying plug-in solar and batteries in apartments:

A recent study in Germany explored the economics of large private landlords providing their tenants with these and sharing the profits equally. The study found that an initial investment of €3,000 would provide a social housing provider a “net present value cumulative gain of more than €32,000 in 20 years”.¹³⁷

FINDING 48: Plug-in solar and battery systems installed on well-situated balconies can provide apartment residents with a modest source of renewable electricity and power storage, reducing their reliance on the grid and their energy costs. However, Australia currently lacks the technical and safety standards, and regulation to enable their deployment.

FINDING 49: Plug-in solar and battery systems are more affordable than larger, permanent rooftop systems on apartment buildings. While this makes them more accessible to rental households than a permanent system, their limited energy-generation capacity means they are more suitable as a supplementary solution.

¹³⁷ Associate Professor Nicola Willand, et al., *Submission 27*, p. 13.

Stakeholders called for technical and regulatory reform to facilitate the use of plug-in solar and batteries in Victorian apartment buildings.¹³⁸ Smart Energy Lab argued that the proliferation of plug-in systems in Germany shows that this technology is not ‘speculative’ and Victoria ‘now needs a ... safety, consumer, and grid-integration pathway if Australia is to capture renter-access benefits without compromising electrical safety’.¹³⁹ Stakeholders recommended working with industry to establish:

- technical standards for plug-in solar and battery products with reference to the Australian Standards for inverters, grid connections, solar panels, wiring and battery installation¹⁴⁰
- safety standards and compliance requirements for plug-in solar and batteries with reference to Victorian electrical safety regulations¹⁴¹
- a registration scheme to ensure distribution network service providers are aware of plug-in solar and battery devices connected to the grid¹⁴²
- a pilot program to assess technical, safety, network and consumer outcomes before scaling up adoption of plug-in solar and batteries¹⁴³
- whether the liability for any damage to property (or person) arising from a plug-in solar system lies with the property owner or tenant and the implications for insurance.¹⁴⁴

RECOMMENDATION 22: That the Victorian Government investigate the development of technical standards, safety regulations and a registration scheme to enable plug-in solar and batteries in Victorian apartments and multi-unit dwellings.

Stakeholders also suggested that Victoria should legislate a ‘right to plug-in’ solar and batteries (unless it is unsafe to do so), to support the widespread use of this technology by apartment residents including rental households.¹⁴⁵ This is needed to prevent OCs from creating by-laws that prevent the installation of solar and batteries on balconies (with a view to protecting the aesthetics of an apartment building).¹⁴⁶ It is also required to ensure apartment residents living in embedded electricity networks can install and use plug-in solar and batteries.¹⁴⁷

¹³⁸ Smart Energy Lab, *Submission 26*, pp. 2, 5, 11; Lighter Footprints and Darebin Climate Action Now, *Submission 51*, p. 13; Property Council of Australia, *Submission 75*, p. 5; Victorian Trades Hall Council, *Submission 60*, p. 7.

¹³⁹ Smart Energy Lab, *Submission 26*, p. 5.

¹⁴⁰ Ibid., pp. 11–12; Associate Professor Anne Kallies, School of Law, RMIT University, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 25; Associate Professor Nicola Willand, et al., *Submission 27*, pp. 13, 20.

¹⁴¹ Smart Energy Lab, *Submission 26*, pp. 2, 11–12; Associate Professor Nicola Willand, et al., *Submission 27*, pp. 13, 20; Professor Rebecca Yang, Department of Infrastructure Engineering, University of Melbourne, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 27; Victorian Trades Hall Council, *Submission 60*, p. 7; Rewiring Australia, *Submission 56*, p. 2.

¹⁴² Smart Energy Lab, *Submission 26*, p. 11; Associate Professor Anne Kallies, *Transcript of evidence*, p. 25.

¹⁴³ Smart Energy Lab, *Submission 26*, p. 12.

¹⁴⁴ Associate Professor Anne Kallies, *Transcript of evidence*, p. 25.

¹⁴⁵ Rewiring Australia, *Submission 56*, p. 7; Smart Energy Lab, *Submission 26*, p. 12.

¹⁴⁶ Owners Corporation Network of Australia Limited, *Submission 61*, p. 3; City of Melbourne, *Submission 84*, p. 11.

¹⁴⁷ Smart Energy Lab, *Submission 26*, p. 12.

Associate Professor Nicola Willand et al. also advocated for community education and simulation tools (like those available to German consumers) to assist apartment residents to determine whether their residence is appropriately situated to benefit from plug-in solar and batteries.¹⁴⁸ Submitters also called for subsidies to support rental and low-income households to invest in this technology.¹⁴⁹

5.5 Greater apartment participation in virtual power plants and energy networks

New virtual energy market models are developing to complement residential solar and battery systems for apartment buildings by allowing surplus energy generated to be shared more broadly within a community. Two models growing in popularity are virtual power plants (VPPs), which enable centralised energy redistribution, and virtual energy networks (VENs), which enable household-to-household energy sharing.¹⁵⁰

As described in Chapter 1, VPPs are typically managed by energy retailers and work by aggregating household solar and battery installations across a community into a larger system, which can trade electricity with the grid.¹⁵¹ Case Study 5.2 provides an example.

Case Study 5.2 South Australia's virtual power plant

In 2018, Australia's largest VPP was launched in South Australia (SA) to provide affordable and renewable energy to social housing tenants and to help stabilise the electricity grid with increasing residential solar penetration. The SA Government, battery manufacturer Tesla and energy retailer Energy Locals collaborated to establish a network of residential solar and Tesla Powerwall battery systems installed on more than 6,500 SA Housing Trust homes. Joint federal and state government funding covered the installation of residential solar and battery systems on participating social housing. Energy retailer AGL took over ownership of the SA VPP in 2025.

The SA VPP continues to provide participating social housing tenants with the lowest residential electricity rate in that state (25% less than the SA default market offer), which is less than other general energy concessions. In the 2025–26 financial year, households with model usage could save up to \$575 (including GST) off their annual electricity bill. Access to a home battery also provides participating households with back-up power during outages.

(Continued)

¹⁴⁸ Associate Professor Nicola Willand, et al., *Submission 27*, pp. 13–14.

¹⁴⁹ Ibid.; Smartizer Pty Ltd, *Submission 37*, pp. 2, 6.

¹⁵⁰ DEECA, *Neighbourhood batteries*, 2026, <<https://www.energy.vic.gov.au/grants/neighbourhood-batteries>> accessed 21 April 2026; Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 8; ReThink Sustainability, *Submission 5*, p. 1.

¹⁵¹ Professor Rebecca Yang, *Submission 38*, p. 6; Victorian Council of Social Service, *Submission 86*, p. 11; National Electrical and Communications Association, *Submission 45*, p. 6; Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 8.

Case Study 5.2 Continued

The SA VPP has also enhanced the resilience of the electricity grid during major events, including:

- providing power to Port Lincoln residents during catastrophic fire conditions in November 2019
- stabilising power during disconnections between South Australia and Victoria in November 2019, January 2020 and November 2022.

Sources: Government of South Australia, *South Australia's Virtual Power Plant*, <<https://www.energymining.sa.gov.au/consumers/solar-and-batteries/south-australias-virtual-power-plant>> accessed 13 June 2026; Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 8; Friends of the Earth Melbourne, *Submission 67*, p. 3–4.

A VEN is a digital platform allowing households (or businesses) to buy, sell or share locally generated renewable energy directly with others via the grid.¹⁵² VENs enable households with solar to sell excess energy at rates higher than feed-in-tariffs, and they empower households without solar to access more affordable and renewable energy.¹⁵³ All households need to participate is a 'smart meter', which can transmit data about real-time energy generation or usage to energy providers.¹⁵⁴ As Dr Andrea La Nauze, Associate Professor of Economics at Deakin University, noted, 'that basically means that every Victorian household or small business should be able to participate' because almost all Victorian homes and businesses have smart meters (Australia's smart meter roll out is expected to be completed by 2030).¹⁵⁵ Case Study 5.3 describes a pilot VEN currently operating in Australia.

¹⁵² ReThink Sustainability, *Submission 5*, p. 1; Dr Andrea La Nauze, Justin McFarlane, Aidan Moore and Christine McGuigan, *Submission 63*, pp. 1–2.

¹⁵³ Ibid.; Justin McFarlane, Executive Director, ReThink Sustainability, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, pp. 29–30.

¹⁵⁴ Justin McFarlane, *Transcript of evidence*, p. 29; Department of Energy, Environment and Climate Action, *Smart meters: smart meters help you understand and manage your energy use and costs*, 2025, <<https://www.energy.vic.gov.au/households/save-energy-and-money/smart-meters>> accessed 15 June 2026.

¹⁵⁵ Dr Andrea La Nauze, Associate Professor, Economics, Deakin University, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 31; ClearVue Technologies Ltd, *Submission 68*, p. 11.

Case Study 5.3 Australian virtual energy network pilot

In 2024, Deakin University partnered with community energy group WinZero and consultancies QuantumNRG and ReThink Sustainability to pilot a VEN. The pilot aimed to understand the benefits of energy trading, how VENs can increase solar consumption in the middle of the day, and whether they help maximise the value of solar.

Five energy retailers and more than 300 households and small businesses from across Australia's national energy market participated in the pilot. This included apartment residents and rental households (who made up around 10% of participants). Around 40% of participants had no residential solar. No social housing tenants participated.

The VEN used software to match excess energy generated with purchasers based on simple trade rules set up by each participating household or business. Trading credits were recorded on sellers' monthly bills.

There were two trading options set up by participants in parallel or stand alone:

- Peer-to-peer trading: In this type of trade, the trading parties are connected in a secure chat and agree to trade by specifying the sell and buy prices. If accepted and there is a match, software does the rest.
- Community trading: In this type of trade, the trading parties are anonymous, and the software is guided by the seller's pre-set sell and buy prices. If there is a match, software does the rest. If there is not a match, standard retailer rates apply.

Two of the most common trading relationships in the VEN were households or businesses purchasing power from large-scale renewable energy generators (like a wind farm) and peer-to-peer trading.

The pilot showed that utilising excess solar through the VEN delivers financial benefits to both energy generators and energy purchasers through higher prices for exports and lower prices for imports. Participation in the VEN also increased households' perception of fairness in the energy system, suggesting that well-designed market mechanisms can earn a social licence—a missing element constraining uptake of other energy market models (such as VPPs).

(Continued)

Case Study 5.3 Continued

The pilot also indicated that a VEN can help change the energy consumption patterns of households and businesses through price signals that encourage energy purchasers to align demand with peak solar energy generation.

Energy Consumers Australia provided grant funding to support the VEN pilot.

Sources: Deakin University, *Virtual Energy Network*, <<https://www.deakin.edu.au/faculty-of-business-and-law/research/virtual-energy-network>> accessed 13 June 2026; Energy Consumers Australia, *Announcing our newest grant recipients!*, 2024, <<https://energyconsumersaustralia.com.au/news/announcing-our-newest-grant-recipients>> accessed 13 June 2026; Justin McFarlane, Executive Director, ReThink Sustainability, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, pp. 29–30; Dr Andrea La Nauze, Associate Professor, Economics, Deakin University, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, pp. 31–32; Dr Andrea La Nauze and Professor Flavio Menezes, *The benefits of hyper-utilisation of consumer energy resources (CERs) through a virtual energy network (VEN)*, 2026, pp. iii, 21–22; Dr Andrea La Nauze and Professor Flavio Menezes, 'The benefits of hyper-utilisation of consumer energy resources (CERs) through a virtual energy network (VEN)', webinar presentation delivered 19 May 2026, p. 11.

Stakeholders were enthusiastic about the potential of VPPs and VENs to increase apartment residents' and social housing tenants' access to more renewable and affordable energy.¹⁵⁶ For example, community housing sector peak body Community Housing Industry Association Victoria (CHIA Vic) said these market models are 'increasingly promising tool[s] to bring cheaper and cleaner energy to apartments'.¹⁵⁷ The potential for VPPs and VENs to increase access to more affordable and renewable energy where residential solar is not possible in an apartment building or where it is inadequate to meet demand (such as in mid- or high-rise buildings) is particularly significant.¹⁵⁸ Renewable energy expert Professor Rebecca Yang from The University of Melbourne observed that participation in a VPP at the building or precinct level can reduce energy costs.¹⁵⁹

VPPs and VENs can also deliver important benefits for the electricity grid more broadly. They can assist in balancing supply and demand, minimise disruptions and help reduce network costs for all Victorians.¹⁶⁰ AATSE also pointed out that VPPs can provide additional electrical capacity during periods of peak demand, which reduces

¹⁵⁶ Collaboration on Energy and Environmental Markets, *Submission 80*, p. 5; Dr Andrea La Nauze, Justin McFarlane, Aidan Moore and Christine McGuigan, *Submission 63*, p. 2; Friends of the Earth Melbourne, *Submission 67*, pp. 4–7; Victorian Council of Social Service, *Submission 86*, p. 11; Dr Asma Aziz and Nishadi Weerasinghe, *Submission 9*, p. 3.

¹⁵⁷ Community Housing Industry Association Victoria, *Submission 69*, p. 7.

¹⁵⁸ Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 8; Justin McFarlane, *Transcript of evidence*, p. 33.

¹⁵⁹ Professor Rebecca Yang, *Submission 38*, p. 6.

¹⁶⁰ Solar Victoria, *Solar battery buyers guide: what incentives are available to Victorians for solar battery systems?*, 2025, <<https://www.solar.vic.gov.au/solar-battery-buyers-guide/section-2-what-rebates-and-incentives-are-available-victorians-solar>> accessed 13 June 2026; Australian Sustainable Built Environment Council, *Submission 23*, p. 3; Justin McFarlane, *Transcript of evidence*, pp. 29–30; Dr Andrea La Nauze, *Transcript of evidence*, p. 31.

the need for expanding Victoria's large-scale energy generation (such as wind and solar farms).¹⁶¹ Case Study 5.2 above on the SA VPP illustrates many of these benefits.

However, VPPs and VENs remain uncommon in Victoria and there are several factors impeding broader participation. Many Victorian households are unfamiliar with these energy market models and VPPs require energy retailers to take control of a household's solar and battery system. As Alan Pears AM observed, households may hesitate to allow this as community trust in energy retailers is limited and pricing structures in the VPP may change over time.¹⁶² AATSE also pointed out that residential solar is a big investment for households and they may be worried that surrendering control will limit the benefits of this investment:

VPPs require the buy-in of consumers, who may feel uncomfortable about their energy provider turning on and off the consumer's own energy resources—especially where the customer has invested a lot of money to receive the benefits of those resources.¹⁶³

Likewise, VENs are complex and households require education to support their participation.¹⁶⁴ The Department of Energy, Environment and Climate Action (DEECA) suggested that '[l]ow levels of energy literacy, limited understanding of VPPs and gaps in communication have contributed to reduced consumer confidence'.¹⁶⁵

Participation in VPPs and VENs can also be restricted by the presence of an embedded network in an apartment building. This can prevent households from switching energy retailers or managing their energy generation.¹⁶⁶ The operation of embedded networks is explored in Chapter 3.

Inadequate electrical infrastructure is also a challenge in older buildings. A group of apartment owners from North Melbourne reported that low-capacity wiring and an outdated switchboard in their building is prohibiting them from joining a VPP or VEN.¹⁶⁷ If supported, the governance reforms and funding models proposed throughout this report will help apartment owners to update inadequate building infrastructure to ease their participation in Victoria's energy transition.

Moreover, national electricity regulation is not well-suited to VPPs and VENs. Dr La Nauze noted that these rules require households participating in a VEN to be customers of the same energy retailer.¹⁶⁸ She also suggested that the tariff structures do not 'reflect the value of consuming solar output close to where it is produced'.¹⁶⁹ She argued that if this was better valued, it could 'catalyse' apartment buildings'

¹⁶¹ Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 8.

¹⁶² Alan Pears AM, *Submission 65*, p. 12.

¹⁶³ Australian Academy of Technological Sciences and Engineering, *Submission 47, Attachment 1*, p. 8.

¹⁶⁴ Dr Andrea La Nauze, *Transcript of evidence*, p. 31.

¹⁶⁵ Department of Energy, Environment and Climate Action (DEECA), *Submission 89*, p. 4.

¹⁶⁶ Dr Andrea La Nauze, *Transcript of evidence*, p. 31; Professor Rebecca Yang, *Submission 38*, p. 1.

¹⁶⁷ Owners at 43 Haines Street, *Submission 44*, p. 6.

¹⁶⁸ Dr Andrea La Nauze, *Transcript of evidence*, p. 31.

¹⁶⁹ Ibid.

participation in VENs.¹⁷⁰ DEECA also acknowledged that tariff reform is needed to support participation in VPPs:

Financial incentives remain the primary driver for consumers to join VPPs. While VPPs can deliver value, the wide variation in retailer offerings makes it difficult for customers to compare options and understand potential savings.¹⁷¹

Energy market reforms to strengthen consumer protections and increase the financial advantages of participating in a VPP or VEN will help expand apartment residents' participation in these market models.¹⁷² Strong consumer safeguards and incentives will ensure renters can participate in a VPP without high upfront costs.¹⁷³ In addition, DEECA submitted that improving the transparency and engagement of the energy retailers that manage VPPs is essential for 'building the social licence needed for broader customer participation in future VPP programs.'¹⁷⁴ Solar retailer ClearVue Technologies recommended that regulation explicitly encourage buildings with building integrated photovoltaics (as well as rooftop solar) to participate.¹⁷⁵

Energy market incentives were also recommended to scale up apartment residents' participation in VPPs.¹⁷⁶ Other Australian states provide a model. The New South Wales Government offers households and small businesses a one-off payment for connecting a battery to a VPP. The exact value of the rebate varies according to the capacity of the battery and the energy retailer managing the VPP, but ranges from an estimated \$180 to \$1,000.¹⁷⁷ Likewise, the Western Australian Government is providing rebates and no-interest loans for households who purchase a battery connected to a VPP.¹⁷⁸

Speaking specifically about VENs, renewable energy consultancy ReThink Sustainability underscored the potential of inducements to encourage retailers and utility-scale renewable energy generators (such as solar and wind farms) to participate in VENs. It also called for 'pricing incentives' that reward energy sold locally (at the substation level). ReThink Sustainability suggested that these incentives should be paired with education to increase energy consumers' understanding of VENs.¹⁷⁹

¹⁷⁰ Ibid.

¹⁷¹ DEECA, *Submission 89*, p. 4.

¹⁷² Professor Rebecca Yang, *Submission 38*, p. 6; Associate Professor Saman Gorji, Director, Centre for Smart Power and Energy Research, Deakin University, public hearing, Melbourne, 24 March 2026, *Transcript of evidence*, p. 22; Australian Sustainable Built Environment Council, *Submission 23*, p. 2; Infrastructure Victoria, *Submission 20*, p. 2.

¹⁷³ Smart Energy Lab, *Submission 26*, p. 2; Smartizer Pty Ltd, *Submission 37*, p. 5; Matt Torney, Director, Strategy, Performance and Sustainability, Housing Choices Australia, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 47; National Electrical and Communications Association, *Submission 45*, p. 11.

¹⁷⁴ DEECA, *Submission 89*, p. 4.

¹⁷⁵ ClearVue Technologies Ltd, *Submission 68*, p. 11.

¹⁷⁶ Australian Sustainable Built Environment Council, *Submission 23*, p. 2; ReThink Sustainability, *Virtual Energy Network presentation*, supplementary evidence received 26 March 2024, p. 6.

¹⁷⁷ Friends of the Earth Melbourne, *Submission 67*, p. 3; NSW Government, *Virtual Power Plant (VPP) incentive*, <<https://www.energy.nsw.gov.au/households/grants-rebates/household-energy-saving-upgrades/virtual-power-plant-vpp-incentive>> accessed 13 June 2026.

¹⁷⁸ Government of Western Australia, *WA residential battery scheme*, 2026, <<https://www.wa.gov.au/organisation/energy-policy-wa/wa-residential-battery-scheme>> accessed 25 June 2026.

¹⁷⁹ ReThink Sustainability, *Virtual Energy Network presentation*, p. 6.

FINDING 50: Virtual power plants and virtual energy networks can empower households with solar and a battery to sell their excess energy. They also enable households without solar to access more affordable and renewable energy generated by others.

FINDING 51: Virtual power plants and virtual energy networks improve the resilience of the electricity grid by balancing energy supply and demand, minimising disruptions and reducing the need for new solar and wind farms.

RECOMMENDATION 23: That the Victorian Government investigate options to refine energy market settings to incentivise strata households to participate in virtual power plants and virtual energy networks.

RECOMMENDATION 24: That the Victorian Government strengthen consumer protections for virtual power plant and virtual energy network participants and develop easy-to-understand educational material and resources for consumers about these energy models.

5.5.1 A virtual power plant for apartment and social housing residents

Throughout the Inquiry there was strong advocacy for the establishment of a state-managed VPP to enhance apartment and social housing residents' access to more affordable and renewable energy.¹⁸⁰ Submitters advocated for a VPP based on the SA model (as described in Case Study 5.2) to improve energy cost stability and affordability for social housing tenants and rental households in apartments.¹⁸¹ Alex Trudzik, Manager of Policy at CHIA Vic, argued that the Victorian Government could deploy residential solar on social housing to pilot and refine the VPP model in preparation for scaling up participation across the energy market.¹⁸² Social and environmental justice organisation Friends of the Earth Melbourne suggested deployment on a range of state-owned buildings (such as hospitals, schools and offices) and private assets (such as warehouses) through roof-lease agreements.¹⁸³ Rory Anderson, Policy Adviser for Energy and Cost of Living at VCOSS, argued that a VPP would deliver 'tremendous benefits for social housing residents'.¹⁸⁴ In its submission, VCOSS also highlighted benefits for Victorians more broadly:

¹⁸⁰ Banyule City Council, *Submission 29*, p. 3; Victorian Council of Social Service, *Submission 86*, pp. 2–3; Alex Trudzik, Manager, Policy, Community Housing Industry Association Victoria, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 50; Friends of the Earth Melbourne, *Submission 67*, pp. 1, 4–5; Rory Anderson, Policy Adviser, Energy and Cost of Living, Victorian Council of Social Service, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, pp. 44, 47.

¹⁸¹ Banyule City Council, *Submission 29*, p. 3; Victorian Council of Social Service, *Submission 86*, pp. 2–3, 11; Alex Trudzik, *Transcript of evidence*, p. 50; Friends of the Earth Melbourne, *Submission 67*, p. 5.

¹⁸² Alex Trudzik, *Transcript of evidence*, p. 50.

¹⁸³ Friends of the Earth Melbourne, *Submission 67*, p. 6.

¹⁸⁴ Rory Anderson, *Transcript of evidence*, p. 47.

[A VPP] would have the added benefit of providing greater stability for the electricity grid as we move to more renewable generation, which could benefit all Victorians, even those not participating, by enabling the avoidance of augmentation expenditure in electricity networks. A successful rollout of a VPP in social housing could also address the limited uptake of VPP schemes by consumers in private housing by demonstrating the potential of such an arrangement.¹⁸⁵

Stakeholders suggested that the Victorian Government's renewable energy company, the State Electricity Commission of Victoria (SEC), could manage or participate in the VPP.¹⁸⁶ VCOSS argued that this would align with the SEC's objective of accelerating Victoria's renewable energy transition.¹⁸⁷ Friends of the Earth Melbourne argued that the SEC is uniquely suited to this purpose because:

- It is not profit-driven. All SEC surplus is reinvested in renewable energy projects, insulating the product from the margin pressures that have led private retailers to design VPPs primarily for asset-owning households.
- It owns the generation. The SEC's 819 MW of solar and storage under construction gives it the ability to structure a VPP without relying on third-party wholesale spot exposure. This would reduce price volatility risk for participants.
- It carries public trust and accountability obligations. The SEC is constitutionally enshrined, subject to parliamentary oversight, and legally required to act in the public interest; a meaningful protection for vulnerable consumers.¹⁸⁸

Friends of the Earth Melbourne argued that VPP profits could be invested in additional renewable energy generation, reducing the need for public investment in the grid.¹⁸⁹ It also suggested that a publicly operated VPP could put pressure on private energy retailers to reduce energy tariffs for apartment residents.¹⁹⁰

Regulatory reform to establish a public VPP should enhance consumer protections, require transparent pricing and safeguard access for low-income households or those living in an apartment building with an embedded network.¹⁹¹ Matt Torney, Director of Strategy, Performance and Sustainability at community housing organisation Housing Choices Australia, cautioned that 'in order to capture the renewable benefits ... the design is as important as the technology'.¹⁹²

Raoul Wainwright, Acting Chief Executive Officer at advocacy body the Victorian Public Tenants Association, made a similar argument in support of a pilot VEN for public housing tenants, asserting that this sector offers the 'perfect place' to trial

¹⁸⁵ Victorian Council of Social Service, *Submission 86*, p. 11.

¹⁸⁶ Ibid., pp. 11–12; Friends of the Earth Melbourne, *Submission 67*, p. 4.

¹⁸⁷ Victorian Council of Social Service, *Submission 86*, pp. 11–12.

¹⁸⁸ Friends of the Earth Melbourne, *Submission 67*, p. 5.

¹⁸⁹ Ibid.

¹⁹⁰ Ibid.

¹⁹¹ Matt Torney, *Transcript of evidence*, p. 47; Friends of the Earth Melbourne, *Submission 67*, p. 5.

¹⁹² Matt Torney, *Transcript of evidence*, p. 47.

this energy market model and develop a 'roadmap' for expanding access to rental households more broadly.¹⁹³

FINDING 52: Coupling residential solar and batteries on social housing with a virtual power plant can expand access to renewable energy, improve the resilience of the electricity grid and support Victoria's transition to renewable energy.

RECOMMENDATION 25: That the State Electricity Commission of Victoria provide apartment and social housing residents with expanded avenues, such as virtual power plants, to access renewable and affordable energy.

**Adopted by the Legislative Assembly Environment and Planning Committee
Parliament of Victoria, East Melbourne
27 July 2026**

¹⁹³ Raoul Wainwright, Acting Chief Executive Officer, Victorian Public Tenants Association, public hearing, Melbourne, 30 April 2026, *Transcript of evidence*, p. 46.

Appendix A

About the Inquiry

A.1 Submissions

Number	Individual or organisation
1	Professor Cathy Sherry
2	Confidential
3	Rod Fuller
4	James Parnell
5	ReThink Sustainability
6	NOX Energy Pty Ltd
7	Name withheld
8	Robert Heron
9	Dr Asma Aziz and Nishadi Weerasinghe, Electric Energy Society of Australia, Western Australia Chapter
10	Solar Choice
11	Ian Nicklen
12	Confidential
13	Electrify Boroondara
14	Banyule Ratepayers Action Group Inc.
15	David Hocking
16	Deakin University
17	Paul Richards
18	Felicity Mulhall
19	Victoria Energy Policy Centre
20	Infrastructure Victoria
21	Owners Committee 61 & 61A Haines Street
22	Greater Dandenong City Council
23	Australian Sustainable Built Environment Council
24	Nishchal Baniya
25	Name withheld
26	Smart Energy Lab

Number	Individual or organisation
27	Associate Professor Nicola Willand, Professor Gary Rosengarten, Dr Manoj Datta, Dr Jack Nihill, Dr Lea Zimmermann, Dr Pabasara Wijeratne, Professor Usha Iyer-Raniga, Associate Professor Huy Pham, Dr Kazi Hasan, Alan Pears, Associate Professor Azizur Rahman, Dr Bhavna Middha, Associate Professor Myla Andamon, Associate Professor Sarah Foster, Associate Professor Anne Kallies, Associate Professor Zsuzsanna Csereklyei, Professor Karien Dekker, Associate Professor Mark Gregory, Dr Sara Vahaji, Julie O'Brien, Professor Ralph Horne, Professor Jago Dodson and Dr Ray Galvin
28	Nightingale Housing
29	Banyule City Council
30	Robert Davis
31	Allume Energy Pty Ltd
32	Smart Energy Council
33	Confidential
34	Victorian Public Tenants Association
35	Vincent Ng
36	Financial Counselling Victoria
37	Smartizer Pty Ltd
38	Professor Rebecca Yang
39	Oliver North-Coombes
40	Tenants Victoria
41	Master Electricians Australia
42	Environment Victoria
43	Victorian Greenhouse Alliances and Council Alliance for a Sustainable Built Environment
44	Owners at 43 Haines Street
45	National Electrical and Communications Association

Number	Individual or organisation
46	HIP V. HYPE and Get Off Gas
47	Australian Academy of Technological Sciences and Engineering
48	Yarra Energy Foundation
49	Manningham Council
50	Yarra City Council
51	Lighter Footprints and Darebin Climate Action Now
52	Renters of South Port Community Housing Group
53	Energy Trade Pty Ltd
54	Visionary Design Development Pty Ltd
55	Housing Choices Australia
56	Rewiring Australia
57	Dr Valerie Kay
58	Energy Efficiency Council
59	Energy On
60	Victorian Trades Hall Council
61	Owners Corporation Network of Australia Limited
62	Business Council of Co-operatives and Mutuals
63	Dr Andrea La Nauze, Justin McFarlane, Aidan Moore and Christine McGuigan
64	Sean McNamara
65	Alan Pears AM
66	Clean Energy Council
67	Friends of the Earth Melbourne
68	ClearVue Technologies Ltd
69	Community Housing Industry Association Victoria
70	Confidential
71	City of Boroondara
72	Solar Citizens
73	ANU Centre for Energy Systems
74	Housing for the Aged Action Group
75	Property Council of Australia
76	Merri-bek City Council
77	Green Building Council of Australia

Number	Individual or organisation
78	Strata Community Association Victoria
79	George Fethers & Co.
80	Collaboration on Energy and Environmental Markets, University of New South Wales
81	Emma Osborne
82	Commissioner for Residential Tenancies
83	Brotherhood of St. Laurence
84	City of Melbourne
85	Let Me Be Frank
86	Victorian Council of Social Service
87	Energy Consumers Australia
88	Darebin City Council
89	Department of Energy, Environment and Climate Action
90	Josephine Tedesco
91	Professor Jian Zuo, Kehao Chen and Zhuocheng Duan
92	CitiPower, Powercor and United Energy

A.2 Public hearings

Tuesday 24 March 2026, Melbourne

Name	Title	Organisation
David McElrea	Chief Advocacy Officer	Smart Energy Council
Dr Kat Lucas-Healey	Senior Climate and Energy Adviser	Environment Victoria
Jeremy Sung	Head of Policy	Energy Efficiency Council
Rob McLeod	Senior Adviser, Policy and Research	Energy Efficiency Council
Cameron Knox	Chief Executive Officer and Co-founder	Allume Energy Pty Ltd
Russell Williams	Deputy Chair	Electrify Boroondara
Dr Graham Moore	Electrification Adviser	Darebin Climate Action Now
Tim Shue	General Manager, Business and Strategic Partnerships	Yarra Energy Foundation
Heidi Lee Douglas	Chief Executive Officer	Solar Citizens
Ari Pickering	Energy Justice Campaign	Friends of the Earth Melbourne
Pat Simons	Yes 2 Renewables Campaign Coordinator	Friends of the Earth Melbourne
Associate Professor Saman Gorji	Director	Centre for Smart Power and Energy Research, Deakin University
Associate Professor Nicola Willand	–	School of Property, Construction and Project Management, RMIT University
Associate Professor Anne Kallies	–	School of Law, RMIT University
Professor Gary Rosengarten	Director	Sustainable Technologies and Systems Enabling Impact Platform, RMIT University
Professor Rebecca Yang	Chair, Australian PV Institute	Department of Infrastructure Engineering, The University of Melbourne
Dr Mike Roberts	Senior Research Fellow	Collaboration on Energy and Environmental Markets, University of New South Wales
Justin McFarlane	Executive Director	ReThink Sustainability
Dr Andrea La Nauze	Associate Professor, Economics	Deakin University
Neil McFarlane	Head, Business Development and Government	Smartizer Pty Ltd
Serjana Sadeq	Chief Strategy Officer	ClearVue Technologies Ltd
Dr Janette Corcoran	Board Director	Owners Corporation Network of Australia
Pernille Cavanough	President	Strata Community Association Victoria
Tim Graham	Vice President	Strata Community Association Victoria

Name	Title	Organisation
Carla Campbell-Redl	Member	Owners Committee 61 & 61A Haines Street
Richard Keeble	Member	Owners Committee 61 & 61A Haines Street
Jane Mavoa	–	Owners at 43 Haines Street
Dr Valerie Kay	–	–
Damien Patterson	Director, Policy, Advocacy and Engagement	Tenants Victoria
Fiona York	Executive Officer	Housing for the Aged Action Group
Danae Bosler	Assistant Secretary	Victorian Trades Hall Council
Dr Colin Long	Just Transitions Organiser	Victorian Trades Hall Council
Dr Jonathan Spear	Chief Executive Officer	Infrastructure Victoria
Jill Riseley	Deputy Chief Executive Officer	Infrastructure Victoria

Thursday 30 April 2026, Melbourne

Name	Title	Organisation
Kate Barnes	Acting Chief Executive Officer	Solar Victoria, Department of Energy, Environment and Climate Action
Guy Pritchard	Director, Programs	Solar Victoria, Department of Energy, Environment and Climate Action
Alison Cleary	Director, Policy and Advocacy	Australian Sustainable Built Environment Council
Morgan Rossiter	General Manager, Distributed Energy	Clean Energy Council
Shay Singh	Head, Policy	Green Building Council of Australia
Corwin Wallens	Manager, Policy	Green Building Council of Australia
Jeff Sykes	Chief Executive Officer	Solar Choice
Gavin Ashley	Director of Sustainability	HIP V. HYPE
Brendan Lang	Founder	Get Off Gas
Francis Vierboom	Chief Executive Officer	Rewiring Australia
Calum Harvey-Scholes	Head of Research	Rewiring Australia
Kate Nicolazzo	Director	Let Me Be Frank
Glen Morris	General Manager	Smart Energy Lab
Michael Oke	Unit Manager, Sustainability	Yarra City Council
Katy Daily	Lead, Energy Innovation	Yarra City Council
Amaya De Silva	Coordinator, Climate Action	City of Boroondara
Jess Harrison	Manager, Climate Action and Sustainability	City of Boroondara

Name	Title	Organisation
Pene Winslade	Director, Place and Environment	Merri-bek City Council
Victoria Hart	Manager, Sustainability and Climate	Merri-bek City Council
Krista Milne	Director, Climate Change and City Resilience	City of Melbourne
Liam Henderson	Manager, Zero Carbon Community	City of Melbourne
Tim Graham	Fellow	Australian College of Strata Lawyers
Dr Heather Holst	Commissioner for Residential Tenancies	-
Raoul Wainwright	Acting Chief Executive Officer	Victorian Public Tenants Association
Matt Torney	Director, Strategy, Performance and Sustainability	Housing Choices Australia
Jennifer Saunders	Manager, Sustainability Strategy	Housing Choices Australia
Alex Trudzik	Manager, Policy	Community Housing Industry Association Victoria
Rory Anderson	Policy Adviser, Energy and Cost of Living	Victorian Council of Social Service
Zyl Hovenga-Wauchope	Chief Executive Officer	Financial Counselling Victoria
Matthew Roberts	-	Renters of South Port Community Housing Group
Dr Wendy Russell	Project Lead	ANU Centre for Energy Systems
Dr Rebecca Blackburn	Research Fellow	ANU Centre for Energy Systems
David Bryant	Senior Policy and Research Officer	Brotherhood of St. Laurence
Lotte Wolff	Executive Manager, Advocacy and Policy	Energy Consumers Australia
Dr Elham Hajhashemi	Manager, Analysis and Advocacy	Energy Consumers Australia
Kate Raymond	Chief Executive Officer	Master Electricians Australia
Georgia Holmes	Lead, National Policy	Master Electricians Australia
Kent Johns	Head, Government Relations and Regulatory Affairs	National Electrical and Communications Association
Neil Roberts	Technical Director	National Electrical and Communications Association
Rob Selymes	Board Member, Victoria	National Electrical and Communications Association
Lee Kolbe	Chief Operating Officer	Energy Trade Pty Ltd
Rosa Di Noto	Manager, Operations	Energy On
Shawn Misquith	Manager, Network Services	Energy On

Appendix B

Alternative text for figures

Chapter 1: Solar inequity in Victoria

Figure 1.1 Australian electricity generation, by source, 2024

Bar and pie graphs showing that renewable energy makes up 40% of Australia's electricity generation, which is slightly more than black coal at 39%. Among renewables, wind and solar produce the most electricity, while hydro and bioenergy produce smaller amounts.

Figure 1.2 Diagram of how a single dwelling solar system works

A diagram of a house with solar panels on the roof showing how solar power works. Solar panels on the roof turn sunlight into electricity, which is changed by an inverter into usable power for the home. The electricity runs the house, and any extra power can be sent to the grid.

Figure 1.3 Energy generation distribution by state, 2024

A bar graph showing that most Australian states generate electricity from a mix of coal, gas and renewables. Renewable energy generation is strongest in South Australia (mostly from wind and solar) and Tasmania (mostly from hydro and wind).

Figure 1.4 How does SolShare work?

A diagram showing how a solar sharing technology called SolShare distributes renewable energy to households and common areas in an apartment building. Solar panels generate electricity, SolShare splits it fairly between apartments and extra power is supplied from the grid as needed.

Figure 1.5 Building scale at activity centres

A diagram showing that the planning controls in Melbourne activity centres (transport hubs or shopping centres) support a mix of housing densities, with the tallest buildings in the centre. Building height then gradually decreases to lower-rise apartments and townhouses toward outer catchment areas.

Figure 1.6 Who lives in apartments?

Bar charts showing the characteristics of Victorian apartment residents, including where they were born, languages spoken, housing tenure, age, and household type.

Almost half rent, just over half were born overseas, over half speak English and over half are aged 20–39. Most households are people living alone or couples with no children.

Chapter 2: Legislative reform to boost sustainability

Figure 2.1 Different levels of authority in an owners corporation

A diagram showing how an owners corporation is structured and makes decisions. All owners make major decisions together, an elected committee handles operational decisions, and responsibilities can be delegated to a manager within set limits.

Figure 2.2 Types of owners corporation resolutions

A diagram showing the three types of decisions an owners corporation can make. Ordinary resolutions (for day-to-day matters) need at least 50% agreement, special resolutions (for major matters) need 75% agreement, and unanimous resolutions (for property ownership matters) need 100% agreement from owners.

Chapter 3: Safeguarding energy equity

Figure 3.1 Average energy debts reported to the Victorian National Debt Helpline, 2019 to 2024

A column and line chart showing average energy debt from 2019 to 2024 compared with average Centrelink and employment incomes. Energy debt increased each year, rising faster than both income measures, which grew only slightly over the same period.

Chapter 4: Overcoming technical challenges

Figure 4.1 Rooftop and façade solar energy generation and residential energy demand at each hour of the day (average over a whole year)

A line graph comparing daily energy generation from rooftop and façade solar with household electricity demand. Solar output varies by orientation, with east-facing panels producing more energy in the morning, west-facing in the afternoon, and rooftop peaking at midday. Household energy demand peaks in the morning and evening.

Figure 4.2 Apartment building with façade-mounted solar, Wohnpark Mariendorf, Berlin, Germany

A photograph of a German apartment building with a façade-mounted solar system.

Figure 4.3 550 Spencer St, West Melbourne with curtain wall façade solar

A photograph of a Melbourne office building with window-integrated photovoltaics.

Figure 4.4 Typical process for delivering a renewable energy project in an apartment building

A flow chart showing the complicated process owners corporations must navigate to deliver renewable energy projects in apartment buildings.

Chapter 5: Embracing complementary measures

Figure 5.1 Annual gas use of the average customer, by gas distributor, 2011 to 2024

A line graph showing the average annual gas use of customers from 2011 to 2024 across different networks. Gas use generally declined over time, with some fluctuations, and dropped sharply after 2022 across all networks.

Figure 5.2 How does the Victorian Energy Upgrades program work?

A diagram explaining how the Victorian Energy Upgrades program works. Households and businesses install discounted energy-efficient products, reducing energy use and emissions; these reductions create Victorian Energy Efficiency Certificates that are sold to energy retailers, helping fund the discounts.

Figure 5.3 Proportion and location of different heaters replaced through the Victorian Energy Upgrades program, to April 2025

A map and pie chart showing where and what types of heaters have been replaced through the Victorian Energy Upgrades program up to April 2025. Two thirds of all heaters replaced were gas ducted heaters, spread across Victoria.

Figure 5.4 Balkonkraftwerk for sale in IKEA

A photograph of a portable, plug-in solar system being sold in Germany by IKEA. It shows photovoltaic panels mounted to an apartment balcony.

