



Submission on renewable and affordable energy for apartments

to Legislative Assembly Environment and Planning Committee

Closing date for submissions: 27 February 2026

Introduction

Lighter Footprints and **Darebin Climate Action Now** welcome the opportunity to make a joint submission on renewable and affordable energy for apartments.

Lighter Footprints is a community-based group that lobbies Australian local, state and national decision makers to take the action necessary to halt global warming as a matter of urgency. We advocate a speedy transition away from fossil fuels. We believe that this is necessary both to reduce emissions and to avoid unnecessary development of new fossil gas resources.

For over a decade, we have educated, advocated and brought people together in Boroondara and surrounding suburbs to inform the community and promote a clean energy future. We have 3,900 people on our mailing list.

Darebin Climate Action Now is a community group based in the City of Darebin. We work with the local community and all levels of government and other NGOs to grow community support for strong climate action, to influence decision makers, to conduct outreach activities and to build capacity to further our goals. We have over 4500 supporters.

It is our belief that we are now entering the stage where behind-the-meter activities linked to innovative tariffs can help us transition to a more reliable and efficient grid and can help all households to benefit from cheaper daytime renewable energy, but further changes on the regulatory and social fronts are also required for an equitable transition for all.

We are aware that current beneficiaries from this transition are primarily house owners and we would like to see the benefits shared with the wider community. It is our belief that the following groups of people require support to enable them to transition and to take advantage of lower cost and healthier energy:

- Apartment dwellers
- Renters
- Vulnerable households.

We welcome this opportunity to make a submission on renewable and affordable energy for apartments.

Our submission is structured as follows:

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1. Executive summary

We have attempted to analyse potential opportunities to improve the consumption of renewable and more affordable energy by apartments, to identify barriers to delivering opportunities and suggestions as to how these barriers have been overcome.

We are aware that removing all of these barriers will require the Federal and the Victorian governments to work together and that community groups can assist in informing apartment owners, tenants and Owners' Corporations of the opportunities available if properly briefed by the Victorian Government.

In our analysis we have included comments on EV charging and the thermal efficiency of apartments. We believe that these areas are important when considering how apartments are incentivised during the transition.

In our detailed report in Section 2 of this document, we have examined opportunities for apartments and the changes required to make these opportunities possible. We highlight some of these below.

There are significant opportunities for legislative and regulatory changes to facilitate the transition to renewable energy. The key changes that we would like to see are:

- We would like it to be mandatory for all new apartments to allow space and infrastructure for:
 - a behind the meter battery
 - EV charging facilities.
 - Address shading of especially windows facing high solar radiation loads. Action could include reviewing building regulations for Class 2 buildings and considering including shading of west facing windows in the Consumer Affairs Victoria minimum rental standards.
- Investigate options for improved regulation of embedded networks (or a new class of advanced embedded networks) facilitating rooftop solar, batteries and V2G/V2H. This will probably require market reform and regulatory reforms around network access charges and embedded network rules for new buildings.
- Update safety and wiring rules to:
 - facilitate plug in batteries and balcony solar
 - Introduce a requirement in wiring rules for a sub meter in the apartment switchboard to facilitate control of plug in batteries or solar PV.
- Update AS5139:2019
 - These standard outline installation requirements of Battery Energy Storage Systems. We would like these standards to be expanded to address issues of a minimum size of battery to which the rules apply or to portable batteries (like power tools, e-scooter batteries or even EVs in small carports. Ideally, They should also allow for battery chemistries that are not subject to thermal runaway and should also apply to market appliances such as air conditioners, cook tops with embedded batteries, as well as portable batteries (see <https://www.cleanegroup.org/batteries-batteries-everywhere-appliances/> and <https://everyelectric.com/>) These are likely to be very attractive to apartment owners and tenants. Therefore, we suggest that the rules for siting of batteries of smaller capacity and portable of embedded batteries are in need of review to keep up with changes in technology.

- Introduce charging and storage regulations for e-bikes and e-scooters that do not meet basic safety requirements.
- Consider whether standing charges for gas and electricity should become the responsibility of landlords as is currently the case for water and sewage. This would incentivise landlords to get off gas with consequential improvements to the rate of transition to renewable energy.
- Legislate the disclosure of thermal efficiency, energy performance and energy costs (including whether an apartment is part of an embedded network) by real estate agents to prospective renters or property purchasers.

Incentives and assistance

We would like to see the Victorian and Federal governments increase the level of subsidies and assistance directed at apartments. We believe that further incentives focussed on apartments could result in a significant move to renewable and cheap energy.

- Consider grants to enable apartment owners and tenants to improve the thermal efficiency of their apartments and to install efficient appliances while ensuring that any permanent works are supported by landlord. It is a fact that the cheapest energy is the energy that you do not use.
- Consider widening grants, subsidies and loans to enable more apartments to participate in the transition.
- Consider further incentives for landlords to electrify.
- Provide clear information on the initiatives being put in place for apartments and distribute this to Owners' Corporations and to community groups that can provide advice to owners, tenants and Owners' Corporations.
- Provide a library of case studies (technical, economic, procurement, risk, insurance, implementation aspects) such that Owners' Corporations can draw on so they don't have to start from scratch – they learn from previous comparable sites.

We note that the AEMC is considering massive increases to daily connection charges while energy consumption charges are decreased. If this happens there will be little to no incentive for residential investment in producing energy for self-consumption or investment in thermal efficiency to conserve energy. This one change could render much of this committee's work null and void.

We believe that much can be done to support apartments in the current transition and we encourage the legislative Assembly to support positive changes.

2. Responses to questions in the Terms of Reference

In this section we provide responses to the specific questions set out in the terms of reference.

We have used the term apartment in our responses to cover all multi-unit dwellings with an Owners' Corporation and believe that responses are relevant to all multi-unit dwellings. We are aware that some multi-unit dwellings may have individual carparks and that EV charging may be easier for these dwellings.

We have also included comments on the thermal efficiency of apartments, energy efficient appliances and EV charging as we believe that these are all issues impacting apartment dwellers.

a) recent developments in energy supply and technology options for these dwellings over the last four years

Our approach to answering this question has been to look at all of the significant recent developments, both in Australia and overseas, and to see if these developments can be tailored to benefit apartment dwellers. We will use this analysis to test barriers and opportunities.

Home energy solutions and government support

Initially, we can look at the economics of home energy solutions and the availability of government support for the installation / purchase of these solutions.

- There has been a significant reduction in the costs of solar panels and batteries over the last few years while the technologies have continued to improve.
 - Solar panels have fallen in cost while improving in performance.
 - Batteries have fallen in cost and new technologies are making them smaller and safer.
 - Some retailers have responded to market changes providing innovative tariffs, access to the wholesale market, and peer to peer trading, benefitting sections of the community.
 - EVs have fallen in price as volumes increase and battery costs fall and there are now EVs available under \$30,000.
 - V2L is widely available and V2G should become widely available in the coming years.
- The federal government and the Victorian State government are providing subsidies, grants and loans to make home electrification more affordable though these have been most effectively accessed by homeowners.
- It is now possible for many homeowners (with unshaded roofs) to run off direct solar or stored solar at a low cost. Yet more homeowners supplement their solar with free electricity during peak supply periods (when the grid is mainly renewable) and avoid drawing electricity from the grid during peak demand periods. This is good for the customers, good for the stability of the grid and reduces curtailment of wind and solar farms.

Increase in renewable energy in the grid

- The percentage of renewable energy in the grid is increasing, and our national target is to reach 82% renewable energy by 2030.
- This percentage varies with the time of day and there is an abundance of PV energy in the grid during the middle of the day. As a result, there is little value if PV is not matched with demand or storage of energy in either chemical or heat batteries.

The Victorian Gas Substitution Roadmap

Victoria's first gas substitution roadmap was produced in 2022 and there have been annual updates since then. The roadmaps are designed to help Victoria transition away from gas. This transition will provide benefits such as:

- Cheaper energy costs
- Health benefits (gas in the home is a significant contributor to respiratory diseases).
- Contributing to Victoria meeting its emissions reductions targets.

Benefits have included:

- Grants, subsidies and loans for:
 - Solar PV
 - Batteries – now replaced by federal benefits
 - Heat pump hot water
 - Reverse Cycle air-conditioners
 - Solar for apartments
 - Energy efficiency products

In addition, Victoria has banned new gas connections and mandated the following:

- Energy efficiency homes for rental homes
- From 1 March 2027 a gas hot water system must be replaced with an electric alternative at end of life.

While some benefits are being delivered to apartments most beneficiaries are homeowners. It is likely that gas distribution charges will rise as customers disconnect from the network and more realistic asset lives are set (a death spiral).

Changes that may be advantageous to apartment dwellers

- Facade and balcony PV and battery solutions are readily available and used in Europe. <https://reneweconomy.com.au/balcony-solar-is-powering-apartments-from-berlin-to-barcelona-so-why-not-in-australia/>
- Induction cooktops with integrated batteries are available in the US that can operate off a 2kW (10 amp) supply, negating the need for wiring upgrades to kitchens from often very remote meters.
- More experience with the installation and operation of shared rooftop PV
- Availability in Australia of instantaneous heat pump hot water that is being developed in the UK but is not yet available here.

Potential issues for apartments rising over the last few years

- unregulated energy storage devices
- uncontrolled charging of e-scooters and bikes leading to fire hazards.
- the wiring in apartments may not be adequate for new electrical equipment such as induction cooktops.

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

● **Barriers**

There are multiple barriers experienced by apartment dwellers compared to other households. These are:

- Apartments usually do not have electricity connections to support individual PV or individual batteries meaning that most behind-the-meter benefits are not available to apartments

- Solar and battery sharing often requires rewiring and requires software to allocate the solar / electricity amongst apartments
- Apartments often have capacity constraints (either at the apartment or building level) and may not have sufficient capacity to run induction cooktops or reverse cycle air conditioners
- Apartments may have common services for hot water and / or heating and cooling. In this case individuals cannot make changes without changing the services for the apartment block. This will require agreement from the Owners' Corporation who may not be supportive. In any case even with support, Owners' Corporation changes can take time to implement. However, in this area there are some good case studies such as the Brunswick apartment building that switched to central heat pump hot water and is saving in excess of \$17k per annum. <https://www.yef.org.au/our-stories-and-events/from-shared-gas-to-shared-savings-how-one-brunswick-apartment-block-electrified/>
- Larger Owners Corporations usually employ professional managers to service the OC committee and manage the buildings. They are usually reluctant to do more than the bare minimum and hence taking on innovative improvements is unlikely.
- Multistorey buildings make PV installation more expensive and normally involve sharing of solar benefits with many parties. This may well make PV uneconomic as in buildings of more than a few storeys, the ratio of roof space for PV panels to floor space is such that insufficient energy can be generated to meet a significant proportion of demand. Sometimes, the roof space is used as open air living space or roof gardens and therefore not available for PV panels.
- Embedded power distribution means that apartments cannot choose their own retailer. While a consumer centric approach to embedded power systems should enable more cost-effective energy supply, this is not always achieved and difficult to change in some Owners' Corporations.
- Very few apartment carparks have power to charge EVs. This can be due to historic design issues, Owner Corporation rules prohibiting EV charging in carparks due to the fear of fire risks, or just not having sufficient capacity in the building electricity connection to handle the potential load without sophisticated demand management
- Owners Corporation rules and time to make decisions complicate the process of transitioning to renewable energy. For example, the developer may still have significant voting power on the Owners' Corporation and have quite different objectives to owner occupiers or individual property investors.
- The incentives for investment in renewable energy for landlords are almost non-existent because the savings that flow from reduced energy costs over time are mostly enjoyed by the renters while the capital cost is borne by the owner. The rental market and property market are not yet sophisticated enough to factor in financial implications of making such investments and the lack of energy efficiency ratings for renters and buyers inhibits the development of a more sophisticated market.
- Fear of fire from uncontrolled charging of lithium-ion batteries is real and the actuality of fire from e-scooters and e-bikes is probably an issue. Our understanding is that the Federal government relinquished regulations on the import of e-scooters and bikes and

thus the private import of these devices that have no compliance with Australian wiring regulations is not uncommon. While fires in EVs are extremely rare, Owners' Corporations may be reluctant to allow charging of EVs in underground car parks.

- Coupled with the fear of fire from charging EVs, most apartment car parks, whether underground or open air, have no power points, and especially no power points connected to individual owner's meters. As a consequence, apartment dwellers do not have the opportunity to charge an EV at \$0.25/ kWh (or zero with residential PV) that a homeowner with off street parking can enjoy, and must use public chargers that cost between \$0.50 and \$0.90 / kWh to charge their EVs. In addition, most car parks do not have sufficient parking spaces to allocate a proportion of them to shared EV charging facilities.
- Many older buildings were designed on the assumption that all heating, hot water and cooking would be energised by gas and cooling may not have been provided at all. As a consequence, connection capacity constraints in the wiring and switchboards at the apartment or building levels are not uncommon. For example, there are apartments in Darebin with 40 amp connections which is insufficient to enable full electrification. These apartments are most likely to be occupied by poorer households. Retrofitting improved wiring is difficult and landlords face difficulties scheduling this so as not to cause undue disruption of tenants.
- Retrofitting improved wiring in apartments can be expensive and the potential savings for apartment owners and renters may be relatively small given the relatively low energy usage of most apartments.
- Depending on the electrical design of the building, there may be little opportunity for "behind the meter" development. This is important because renewable energy generated on site injected into the circuit behind the meter may have a marginal cost approaching zero, whereas energy injected in front of the meter immediately has a cost of at least \$0.25 per kWh.
- The control of solar radiation load on windows is often not available through shade from awnings or trees. On multistorey building retrofitting shade awnings is probably not going to be undertaken due to cost. While internal window furnishings can provide some relief in summer they are not as effective as external shade. It is not uncommon to observe tenants placing aluminium foils on the internal surface of windows to reduce the solar load because it is the only option that can be removed without trace at the end of the tenancy.
- While multistorey apartments often have common hot water services, many one and two storey apartments use instantaneous gas hot water services. These have a very small footprint and are usually placed in tiny courtyards. Due to space constraints, replacing them with electric heat pump hot water units is often not possible; not only is there insufficient room for the storage tank, the ventilation requirements of the heat pump can often not be met without compromising the efficiency of the unit, or the owners corporation may object to the heat pump being attached to walls or roofs.

● Inequalities

In this section we address inequalities that apply to all apartment dwellers as well as those that specifically apply to tenants.

Inequalities that apply specifically to tenants are:

- As a general rule, tenants are prevented by their lease agreements from changing or implementing any fixed infrastructure; even putting a screw in a wall. As a consequence, even if they had a longer term lease, they can probably not do things such as install a split system air conditioner to replace gas heating even if it made financial sense to do so. Even simpler changes like applying window film or reflective curtains to improve thermal efficiency are not permitted without the owner's permission.
- Common lease agreements are essentially short-term contracts; often just one year. Given the payback period for most thermal efficiency or renewable energy improvements are greater than that it is not in the tenant's interest to even think about negotiating with the owner to implement improvements. While many tenants stay in properties for longer than one year on month-to-month agreements and the reasons for eviction are narrow, property owners can still terminate a lease at short notice on the grounds of selling the property for example. This makes the risk of the tenant investing anything in the property high.
- Tenants will often not have access to a power point for charging an EV which means the financial advantage of owning an EV is very diminished because the savings in fuel costs are low when using public charging. This is in contrast to homeowners who commonly have access to off street parking and the liberty to install power points for EV charging if necessary.

Inequalities that apply to both owners and tenants are:

- Many apartment blocks have embedded networks for electricity, hot water or both. Every occupant is forced to use the utility provider that the Owners' Corporation decides on. As a consequence, occupiers, whether owners or tenants cannot choose a provider or change provider if a better deal is offered. To get the best deal on utilities requires constant vigilance on energy plans. While many householders are willing to do that, the Owners' Corporation management have little incentive to do the same.
- As a general rule, the energy costs of apartments are lower than standalone houses because of inherently better thermal efficiency due to having party walls (and floors and ceilings sometimes). The consequence of this is that the ratio of fixed to usage costs is already high compared to most households. The AEMC is currently conducting a pricing review that is widely tipped to increase the fixed cost component of energy bills resulting in even further disadvantage to low energy users. One could easily argue that apartments should pay lower fixed costs than houses because the density of dwellings means that less last-mile poles and wires are required to service apartments.
- Householders that have energy demands where the time of use is flexible such as washing machines are easily able to shift the timing of use to access lower tariffs and save energy costs. As a general rule, apartment dwellers are less likely to own a washing machine and rely on public laundries instead. Similarly, apartment dwellers are more likely to work during the day and therefore are not home to control appliances that could take advantage of lower middle-of-day costs.

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

Most of the options are a complex mixture of technology and regulatory settings, plus require significant education to take advantage of.

- Balcony and solar facade PV could be useful, but only if a modest sized, behind-the-meter battery is available also. Regulatory changes are required for this to be available to renters as a portable PV plus storage solution. Regulation would also be required for an external power point on the balcony as a minimum requirement for rental properties and circuit breakers and submeters in switch boards that are compatible with low power generation appliances. For tenants, while they could theoretically invest in balcony PV, insecurity of leases discourages this because their next property may not have an appropriate balcony, power point or switchboard to accommodate the portable panels. Also fixing the panels to the balcony can only be done with removable clamps since tenants cannot alter properties in any way.
- Community batteries appear very attractive to apartment buildings because they can share installation and connection costs and can take advantage of larger scale units. However, community batteries are only useful to residents if they can access them as though they were behind the meter. Current tariff settings of retailers/DNSPs are such that in-front-of-the-meter batteries incur double network charges (when being charged and then discharged). Such arrangements are possible if embedded electricity networks are used but then other drawbacks of embedded networks must be addressed. The current rules for new buildings disallow embedded networks unless all the energy used on site is renewable and 5 percent is generated on site so new buildings may not be able to get the advantage of behind-the-meter community batteries if the building design prioritises outdoor open space on the roof over PV panels.
- We understand that grants for community batteries can be used for batteries behind the meter where a significant client accesses cheap electricity while surplus electricity is returned to the grid. Such an arrangement may suit apartment buildings.
- For apartments with embedded networks there is a great opportunity for V2G since as the commonality of EVs increases, for larger apartment blocks there will always be enough cars in the carpark to supply the whole building 24 hours a day and enough cars parked during the day to charge on cheap or free solar from the grid. Also, buildings with insufficient connection capacity for electrification would then have storage behind the meter/transformer to allow electrification. This solution would need significant effort on behalf of government/Owners' Corporations/retailers to refine a technical and commercial solution to adequately encourage the EV owners to participate and the owners to invest in bi-directional chargers and metering.
- With the impending "free electricity" tariffs in the middle of the day, most apartment dwellers will not be able to utilise them because they have few options to shift demand. A small battery (say 5 kWh) would enable them to store the cheap energy, but current battery installation constraints mean that most apartments will have insufficient space or unused wall space away from windows and doors to install a battery. A portable battery that could be plugged into a GPO could get around this, but needs regulatory changes discussed above in balcony solar PV.

- Given the difficulties facing apartments wishing to take advantage of existing solutions we believe that there should be further discussion around embedded networks. We would like to see a new class of embedded network, possibly called an advanced embedded network, that could be designed to focus on achieving solutions for their apartments. These advanced embedded networks should be required to:
 - investigate ways to introduce renewable and cheap electricity through solar and batteries, including the use of 3 free hours of electricity.
 - Review tariffs every six months (or outsource this activity to an outside business).
 - Charge apartments a regulated small charge to manage the embedded network, and
 - Pass on all savings to apartments.

If this could be achieved, advanced embedded networks could be an efficient way for apartments to get access to cheap and renewable energy (noting that the grid is predominantly renewable during periods of free electricity).

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

Because we do not have data on the quantum of different sectors of apartment dwellers we have had to rely on our understanding of the market when evaluating impacts. Further information on apartments would assist councils and community groups.

A major difficulty in providing an easy transition for apartments is the difficulty in retrofitting changes to apartment blocks. We believe that the current rules regarding the electrification of all new buildings should resolve some of these issues. However, we feel that apartments will still miss out on some opportunities if further changes are not made.

We would like it to be mandatory for all new apartments to allow space for:

- a behind the meter battery
- EV charging facilities.

EV charging facilities could either be specific charging positions or a GPO at each car parking space, balcony and bike parking space, including a submeter if the plug is not wired to the apartment switchboard. We believe that these changes would prepare the apartments for the future.

We understand that these changes would not impact the current stock of apartments but believe that some benefits can be delivered.

We believe that it is unlikely that many apartments will be able to benefit from traditional behind the meter activities due to space and connection constraints, although some apartments may be able to benefit from small batteries and balcony solar subject to rule changes and Owners Corporation permission.

However, we believe that there are opportunities for some groups of apartments to benefit from the changing energy markets if incentives are targeted in the correct areas.

Potential areas where benefits could be delivered that would benefit all apartments are:

- Replacing centralised gas hot water with efficient heat-pumps. This has already been implemented by some Owners' Corporations producing operational savings. If Owners Corporations had access to a program with:
 - Specific grants for apartment hot water heat pumps
 - Low cost loans for any residual
 - Access to three free hours of electricity
 - reputable and experienced installers
 the take up could be significant. We understand that many apartment blocks and townhouse developments have restricted space but there are still many that could benefit. The objective should be to make the benefits clear.
- Ensuring that Owners Corporations that have rooftop solar (and have presumably resolved power sharing in the apartment block) have access to battery grants, battery loans and three free hours of power each day.
- Ensuring that all apartment blocks and town house developments have access to battery grants, loans and three hours of free power. This would be a loosening of some restrictions, but apartments could benefit if:
 - they arrange to share the free power;
 - There is an embedded network and the savings are passed on.
 Potential areas where benefits could be delivered that would benefits to some apartments are:
- For owner occupiers
 - balcony solar would provide a benefit to owners with appropriate balconies (size and adequate sunlight)
 - small balcony batteries would provide a benefit for owners with appropriate space.
 In both cases new regulations covering wiring and safety would have to be introduced and Owner Corporations would have to approve.
- For renters we can see few benefits apart from those highlighted above that impact all apartments. Due to their often short and uncertain tenure we do not believe that balcony solar will be a sound investment. However, balcony batteries could provide some assistance although there is still the possibility that there will be no further use for the battery at the end of the lease.

Areas where advanced embedded networks could assist apartments

Embedded networks can simplify the process of adding solar and batteries to apartment buildings if there are new regulations governing their behaviour.

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

The following list of suggestions to changes in regulations is provided as a start for serious investigation as to the feasibility of implementing options for greater access of apartment dwellers to renewable energy and lowering energy based emissions. Our view is that most would require hard regulation rather than guidance because of the difficulty in getting collective agreement among owners to implement the changes, or developers to follow the changes if capital costs are higher even though lifetime costs are lower.

- To enable charging of EVs we think a change to building regulations so that a GPO is required at each car parking space, balcony and bike parking space, including a submeter if the plug is not wired to the apartment switchboard. Access to just a 10 amp standard GPO will cater for most user's daily commute by car.
- Investigate options for use of embedded networks for community battery and EV V2G connection. This will probably require market reform and regulatory reforms around network access charges and embedded network rules for new buildings
- To facilitate plug in batteries and balcony solar, PV safety and allowable regulatory reforms and possibly Wiring Rules changes may be required.
- Introduce a requirement in wiring rules for a sub meter in the apartment switchboard to facilitate control of plug in batteries or solar PV. Similarly, if carpark plugs are not behind the customer meter, a submeter with each outlet to allow cost sharing would be necessary.
- AS5139:2019 outlines installation requirements of Battery Energy Storage Systems. The standard does not address issues of a minimum size of battery to which the rules apply or to portable batteries (like power tools, e-scooter batteries or even EVs in small carports). It also does not allow for battery chemistries that are not subject to thermal runaway. In addition, appliance manufacturers are beginning to market appliances such as air conditioners, cook tops with embedded batteries, as well as portable batteries (see <https://www.cleanegroup.org/batteries-batteries-everywhere-appliances/> and <https://everyelectric.com/>) These are likely to be very attractive to apartment owners and tenants. Therefore, we suggest that the rules for siting of batteries of smaller capacity and portable of embedded batteries are in need of review to keep up with changes in technology.
- The current AEMC pricing review may result in tariffs that discourage investment in energy efficiency and generation by having most of the bill being made up of daily charges rather than consumption charges. We strongly encourage this Legislative Assembly review to engage with the AEMC about possible adverse consequences of changes in tariff structures on apartment and other low energy use households.
- Embedded energy network providers are currently required to charge less than the default market offer for their services. The AER is conducting a review of the DMO presumably because it was becoming unfit for the purpose it was designed. When this review is complete we believe that the rules on the applicability of the DMO on embedded energy providers be reviewed to ensure it is still providing appropriate protection to consumers who have no choice in their energy retailer.
- One opportunity or incentive for landlords to invest in solar would be if they could retail the behind-the-meter electricity to their tenants. This could be a win-win for both landlord and tenant, but the Essential Services Commissioner has regulatory barriers that prevent landlords becoming mini retailers. It is possible that landlords qualify for Deemed Exemptions. A revision of standard lease agreements and education of the opportunity for landlords and real estate agents is required for this opportunity to become reality.
- An alternative to landlords retailing behind-the-meter electricity to their tenants would be for landlords to charge tenants specific separately itemised charges for providing solar in addition to the rent. The additional charges could be justified by demonstrating the benefits of the solar.
- Investigate mechanisms to incentivise Owners' Corporation managers to introduce apartment blocks to renewable energy either by direct incentives such as grants to achieve outcomes, or reporting requirements of Owners' Corporation managers as to

their performance on reducing energy costs to apartments so Owners' Corporation committees easily choose better performing managers.

- A review is required to consider whether standing charges for gas and electricity should become the responsibility of landlords as is currently the case for water and sewage. This would incentivise landlords to get off gas with consequential improvements to the rate of transition to renewable energy.
- With the increasing challenges of climate change we believe it is timely to review building regulations for Class 2 building with relation to shading of especially windows facing high solar radiation loads. In addition, there could be consideration to include shading of west facing windows in the Consumer Affairs Victoria minimum rental standards. Such a standard would reduce the need for higher capacity air conditioning and thus reduce energy usage and emissions.
- When discussing affordability, the thermal efficiency of buildings and the efficiency of electrical appliances should be taken into account. While the terms of reference address affordable energy, the cheapest energy is the energy that you do not use. We encourage the Legislative Assembly Environment and Planning Committee to consider grants to enable apartment owners to improve the thermal efficiency of their apartments and to install efficient appliances.
- Currently there are no provisions for divulging the energy performance of apartments at the time of purchase or lease. As a consequence decisions are made with poor information about the thermal efficiency of the building and the capacity of fixed appliances such as air conditioning or heating to achieve thermal comfort. Therefore energy efficiency ratings should be a mandatory piece of information available to buyers and renters of apartments (and also other residential property).
- In addition to the previous point on the thermal efficiency of buildings a requirement to disclose an energy operational cost index for apartments to inform renters of their likely expenditure on utilities. Such an index would encourage property owners to invest in more efficient heating, cooling and hot water infrastructure because the total cost of living in a property would be apparent and easily compared by prospective renters. A poorer alternative would be to introduce a requirement for rental providers to inform renters of the fixed equipment for heating, cooling and hot water heating in apartments along with an indicative coefficient of performance of that equipment.
- At the time of signing a lease there is no requirement to disclose to lessees whether there are embedded networks. Therefore, we recommend a requirement to inform renters if an apartment has embedded gas, hot water or electricity networks and reveal the current charges for these utilities that are not subject to competition or choice.
- Between 2021 and recently import controls on e-bikes and scooters were relaxed by the Federal government. As a consequence, there are 10s of thousands of scooters and bikes that do not meet basic safety requirements including electrical safety that has had the knock on effect of building fires caused by battery fires. While there has been re-regulation of electric scooters and bikes to ensure compliance with battery safety and appliance rules, this does not address the lingering problem of non-compliant devices in apartments across the country. Consideration should be given to state registration of e-bikes and e-scooters to give apartment dwellers the confidence in owning and charging these devices which are an important way of reducing emissions of road transport and fire authorities' information about potential hazards in building fires

We agree to publication of this submission.

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