Guide to Solar for Apartments

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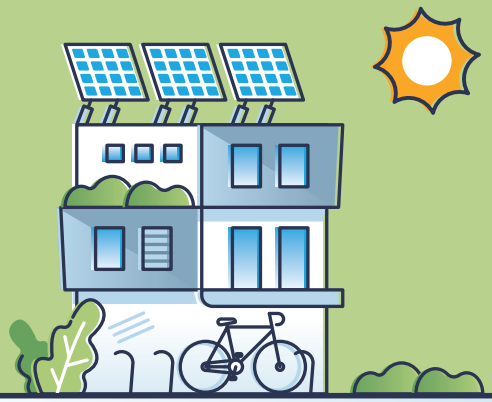
Guide to Solar for Apartments

The concept for this Guide came from the not-for-profit Yarra Energy Foundation (YEF), which is working to build a net zero future by sharing renewable energy solutions with residents and businesses.



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Glossary

Term	Description
Common property / common area	Parts of an apartment building or complex shared by all residents, such as foyers, lifts, carparks and facilities such as pools and gyms. Roofs can also be common property.
Embedded network	Embedded electricity networks are privately owned and managed electricity networks that often supply all premises within a specific area or building.
Feed-in tariff	The amount paid to you by your energy retailer for any excess renewable energy your solar system exports to the grid. These tariffs can vary between retailers and can change over time.
Grid connection	Connecting your rooftop solar panels to the electricity grid.
Kilowatts (kW)	The size of a solar installation is measured in kilowatts, with a house roof normally accommodating between three and 10kW.
Kilowatt-hours (kWh)	The amount of electricity being generated by your solar installation per hour (and how your power bill is measured). For instance, a 6kW system operating at full capacity should generate roughly 6kWh of power each hour (although in reality, systems rarely if ever generate at full capacity).
Owners corporation (OC)	An owners corporation is the association responsible for managing a strata property such as an apartment building. Formerly known as a body corporate, an OC has a number of duties, including maintaining the building and common property such as driveways. When you buy an apartment, you automatically become a member of your OC.
Solar photovoltaic (PV) system	Solar photovoltaic (PV) systems consist of solar panels, which capture the sun's energy and convert it into electricity, and an inverter, which converts the direct current (DC) output of a PV panel into an alternating current (AC). Some systems are combined with a battery as a way of storing excess solar energy for use when the sun isn't shining.
Special resolution	A special resolution must be passed by at least 75% of apartment owners to approve putting a solar system on the common property of a residential building.
Small-scale technology certificates (STCs)	STCs operate as a form of rebate on the initial purchase price of a solar system. This is usually claimed by the installer on a resident's behalf and the savings are passed onto the resident through a discount on installation. They are available for installations smaller than 100kW.

Scope and objectives

What is this Guide for?

The widespread uptake of rooftop solar is one of Australia's greatest climate wins of the past decade. In 2022, more than 30% of Australian households were generating free energy on their roofs.[1]

Solar is now our nation's fastest growing generation type as more and more Australians seek to avoid soaring power costs, increase their energy self-sufficiency and take strong climate action.

Yet this success has so far been largely confined to detached houses or new-build sustainable housing. Even though apartments make up 16% of Australian dwellings[2] and multi-unit residential buildings are common across our urban areas, solar uptake by this sector has been relatively slow.

Why? The technical challenge often involved in installing rooftop solar on apartments is one reason, as is the complexity of managing the diverse interests and needs of multiple residents.

Another obstacle has been the lack of accurate and accessible advice for apartment dwellers keen to shrink their carbon footprint. For many, the goal of generating their own energy seems too confusing or complicated to achieve.

With residential buildings responsible for 12% of Australia's greenhouse gas emissions, we must decarbonise our home energy use as fast as possible – wherever you live.

So let's get started!

Who is this Guide for?

Whether you're an owner-occupier or a tenant, if you live in an apartment or multi-unit complex in Victoria and you're interested in installing solar, this Guide is for you.

What does this Guide do?

This Guide has been designed to:

- Describe and give context to the key challenges of installing solar on apartment buildings
- Support residents in identifying suitable solar options for their home
- Provide a step-by-step approach for installing solar on an apartment building
- Identify the key stakeholders who need to be engaged during this process
- Offer valuable advice and resources to make your solar journey as easy as possible.

Once you've explored this resource, you may want to dig deeper on issues such as:

- The cost-benefit analysis of a particular solar system
- Specific issues not covered by this Guide, such as heritage overlays or battery storage options.

And if it turns out that rooftop solar doesn't fit your situation, don't despair. There are other ways you can reduce your power bills and your emissions. See Appendix A.2 below for further guidance.

[1]https://arena.gov.au/renewable-energy/solar/
[2]https://www.abs.gov.au/statistics/people/housing/housing-census/latest-release

1. Who are the stakeholders?

Knowing which stakeholders you'll most likely need to engage as you explore your solar options is a brilliant first step.

1.1 Owners corporations

Your owners corporation (OC) is the management body of your apartment building. It has a number of responsibilities, including maintenance of essential services and approving any changes to common areas.

If you own a unit within an apartment complex, then you are automatically a member of the OC.

For smaller buildings with 10 or fewer units, the OC usually consists solely of owner-occupiers. For larger apartment complexes with over 10 units, there is often an elected OC committee made up of between three and seven owner representatives. An OC committee takes on the OC's responsibilities on behalf of all owners.

For a solar installation to go ahead, you will need approval from your OC or OC committee via a special resolution, which is required when any retrofits or alterations are proposed to apartment common areas.

In Victoria, at least 75%[3] of members must support a special resolution for it to pass.

Keep this in mind: "an owners corporation must not make rules that unreasonably prohibit the installation of sustainability items on the exterior of a lot including solar hot water systems, solar energy panels and a roof with colours providing a particular solar absorption value."[4]

1.2 Fellow residents

It will be vital to engage your neighbours, whether they are owners or tenants, at various stages. You will need to identify, for example, how many are interested in solar energy, what their concerns and ideas are, and how many are willing to financially support an installation.

Bringing neighbours along on the solar journey has many rewards. It can strengthen your community, save people money on their energy bills and empower them to take positive climate action.

And they can be excellent allies!

1.2 Strata managers

Strata managers are appointed by the OC to manage a variety of administrative, financial and social duties on its behalf. Specific tasks vary from building to building and can include (but are not limited to) keeping and updating records, managing correspondence with residents and external parties and enforcing rules of common property.

Strata managers can also be a handy source of information – from utility bills to details of previously proposed changes to common areas. These insights can help you thoroughly assess the cost and benefits of a solar system on your apartment, including potential energy cost savings and payback periods.

[3]https://www.consumer.vic.gov.au/housing/owners-corporations/meetings-and-committees/voting-and-ballot-guidelines
[4]https://www.consumer.vic.gov.au/housing/owners-corporations/rules/what-can-an-owners-corporation-make-rules-about

1.3 Solar installers

Solar installers supply, install and maintain solar systems. Rule Number One: look for an installer accredited by the Clean Energy Council (CEC). That peace of mind is invaluable – and if you want to access financial support schemes such as Solar Victoria's rebate program, your solar system must be installed by a CEC-accredited installer.

Try to find accredited installers who have been in the industry for at least 5 years, and have worked on similar projects before. Some installers specialise in putting solar on apartment buildings.

1.4 Local councils

Depending on where you live, you may need a planning permit from your council for an installation to go ahead. Many local councils also run solar programs for residents switching to solar energy. Some offer financial support, such as no-interest loans, or programs which will assist you through the entire installation process.

Find out what your council offers before building your case for solar. Be sure to check if you'll need a planning permit.

1.5 Other stakeholders

Installing solar can be a big undertaking and it's worth reaching out to others who may be able to offer support, such as clean energy organisations, energy efficiency experts and local climate groups. These can often be great partners and sources of expertise and advice. Their insights can help educate and persuade other stakeholders.

2. What are the challenges?

It's true – putting panels on apartment buildings and multi-unit developments can be more complicated than installing solar on other dwellings. But don't let that deter you. Table 1 outlines some of the challenges you may face.

Table 1. Overview of challenges and considerations for installing solar on apartment buildings

Issue	Context	Example considerations
Finding the right solution for your situation	Apartment buildings vary greatly in design, height, roof space, number of units, electrical layout and electrical network arrangements. There are several solar options to cater for this diversity. The best will depend on your apartment building's characteristics and what owners and residents see as an ideal outcome. See Section 3 for an explanation of how particular factors influence which solution is right for your apartment community.	The most common options include: 1. Solar systems for individually metered apartments (smaller individual systems as well as large shared systems). 2. Solar systems for apartments on embedded networks. 3. Solar systems for apartment building common areas (such as hallways and lifts).
Working with your apartment community and other stakeholders	Roof space in apartment buildings is often classified as 'common property' and is managed by the owners corporation (OC) on behalf of all apartment owners. The role of OCs in Victoria is set out by the *Owners Corporations and Other Acts Amendment Act 2021*[5] . Alterations to common property – like installing solar - require a special resolution passed by at least 75% of all OC members.	Key questions include: 1. Who owns the roof of your apartment? Is it common property? This will dictate whether you have to seek approval from the OC via a special resolution. 2. What is the general appetite for solar energy amongst other owners? Conduct a survey to gauge interest. 3. What does the OC need to know in order to decide on a potential solar system? Outline this in your formal application.
Diverse incentives and motivations	You may find a wide range of views in your apartment community about the perceived benefits and costs of using solar power. Some of your neighbours may already have solar; others may not consider it a priority. Because apartment dwellers are usually a mix of owners and tenants, there can be differences between who pays for the installation and who benefits from the energy generated. This is called a "split incentive".	Considerations include: 1. How can owners who are landlords benefit from installing solar if they help to pay for it? 2. Why is solar power important to you and your neighbours? 3. Are fellow residents interested only in the financial benefits of reduced energy bills, or are environmental wins also important? 4. Do some of your neighbours have solar and would they be willing to share their experience with neighbours? 5. Can you start a conversation on the benefits of solar with residents who are new to clean energy?

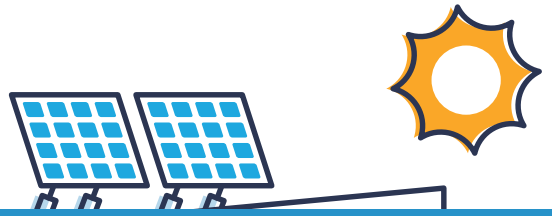


Table 1. Overview of challenges and considerations for installing solar on apartment buildings

Issue	Context	Example considerations
Technical issues	Apartment buildings come in many shapes, sizes and ages. Your building's existing electrical infrastructure, roof access, roof space, roof orientation (to maximise the amount of sun your panels receive), location and even height can influence how easy or complicated an installation might be. See A.3 for further details on common technical challenges.	Technical considerations include: 1. Is your roof easily accessible? Is a crane or elevated platform required? 2. Is there enough roof space to accommodate a solar system? Is heating, ventilation and cooling (HVAC) infrastructure an obstacle? 3. Can the roof bear the weight of a solar system? 4. Will significant retrofits be required to run the cables from the solar panels to the switchboard? 5. Is the roof overshadowed by buildings or vegetation?
Financing your project	Unique technical challenges and limited financial support options can make installing solar on apartments more expensive than other types of installs.	Financial issues include: 1. How many apartment owners will financially support the installation? 2. What financial support or rebates are available? 3. What will the estimated payback period be? 4. What are the projected savings for residents in terms of reduced energy bills?
Time and effort	Putting solar on your apartment can take some time. It is reasonable to expect at least 12 months from your first conversation to installation. Having a group of residents to champion the process will be extremely helpful – and can strengthen your community along the way.	It's worth asking: 1. Are residents who support solar energy likely to still be living there in the foreseeable future (e.g., in a year's time)? 2. Is there someone championing the process? If not, who could take on that vital role?

[5]Owners Corporations and Other Acts Amendment Act 2021: https://www.legislation.vic.gov.au/as-made/acts/owners-corporations-and-other-acts-amendment-act-2021# (last accessed 12/08/2022)

3. What suits your situation?

To help you answer this crucial question, let's look at the three most common options for apartment buildings.

3.1 Solar for individually metered apartments

In most cases, each apartment unit has their own electricity meter. This allows for two solar options which can power individually-metered apartments: an individual solar system for each individual apartment or a single solar system which is shared amongst residents.

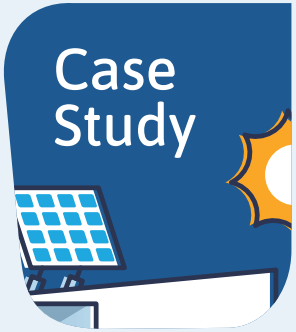
3.1.1 Individual solar systems for individual apartments

How does it work?

This means you have your own solar system for your own home. Each apartment owner pays for all the upfront costs of installing their own solar system, but also receives all the benefits of having a home powered by renewable energy.

When is it suitable?

This option is most suitable for low-rise apartment buildings where: apartments already have or can be allocated roof space, either as part of the property or through negotiation with the OC; there is sufficient roof space for individual solar systems; and existing electrical infrastructure allows those systems to be connected to individual meters. You will also require approval from your OC to proceed.



Aspect[6]	Details
Location	Belgrave Street, Bronte, NSW
Solar system type	Individual apartments – 3 out of 6 units
Solar system size	2.6kW each
Estimated annual bill savings	>$300/year per unit
Estimated annual energy generation per unit	3,600kWh per unit

[6]Waverley City Council case study: https://www.waverley.nsw.gov.au/__data/assets/pdf_file/0010/98479/SolarMyStrata_CaseStudy_Bronte_apartments.pdf accessed 12/08/2022)
Aerial images sourced with authorisation from Nearmap.

3.1.2 Shared solar systems for individual apartments

How does it work?

This option involves one large solar system generating power for a number of apartments. Distributing the energy produced by a single solar system can be done via solutions such as microinverters[7] or Allume Energy's SolShare technology. SolShare distributes energy to apartments when it's needed, and ensures the distribution is fair.[8]

This option maximises the amount of solar produced and used within a building and is useful when roof space is limited relative to the number of units. Any metered unit can be connected, but apartment owners can also opt out.

When is it suitable?

Shared solar systems for individual apartments are most suitable for low-rise apartment buildings where there is limited roof space relative to the number of units, the existing electrical infrastructure allows shared solar systems to be connected to individual meters and the OC fees for common areas are low.

Aspect[9]	Details
Location	Folia Apartments of Tullamore – Doncaster, VIC
Solar system type	Allume Energy's SolShare, 39 apartments
Solar system size	70kW
Estimated annual bill savings	$350/year per unit

[7]String inverters and microinverters, https://www.solarbank.com.au/product/solar-microinverters/
[8]Allume's SolShare, https://allumeenergy.com/au/how-it-works/
[9]Case study shared by Allume Energy for the purpose of this Guide

3.2 Solar for apartments on embedded networks

What does this mean?

Apartment buildings on a private electricity network – known as an embedded network – have one main grid connection meter while individual apartments have their own submeters. An Embedded Network Operator (ENO) buys energy in bulk and then sells it to individual apartments inside the network.

In this scenario, a building's existing embedded network would distribute any solar energy generated among apartments and/or common areas. The OC would pay for the installation (on behalf of owners) while residents would enjoy the benefit of lower energy bills.

When is it suitable?

This option only applies to apartment buildings already on an embedded network, with an ENO willing to support the installation of solar.

One important consideration is that from January 2023, new embedded networks have been banned in Victoria in a move designed to give apartment dwellers greater access to competitive energy prices.

Case Study

Aspect[10]	Details
Location	Genesis – 133 Bowden St, Meadowbank, NSW
Solar system type	Embedded network - powers individual apartments and/or common areas
Solar system size	32kW
Estimated annual bill savings	$8,000 for entire apartment complex
Estimated annual output	41,000kWh

[10]WattBlock case study: https://www.wattblock.com/uploads/4/4/9/8/44984189/wattblock_solar_on_apartment_buildings_case_studies_051218.pdf.pdf

3.3 Solar for your building's common areas

How does it work?

This option involves rooftop solar powering apartment common areas (lighting, lifts, pool pumps etc.). The installation costs are paid by the OC on behalf of the owners, who enjoy lower strata levies due to lower electricity bills covered or supplemented by the rooftop solar.

When is it suitable?

This option is ideal for taller apartment buildings with relatively little roof space, where common area electricity consumption is substantial (e.g. in buildings with pools), where strata levies are high, or if it's not possible to connect solar to individual apartments.

Aspect[11]	Details
Location	Hero apartments – 118 Russell St, Melbourne, VIC
Solar system type	Common areas
Solar system size	50kW
Estimated annual bill savings	$10,000 for entire apartment complex
Estimated annual output	53,000kWh

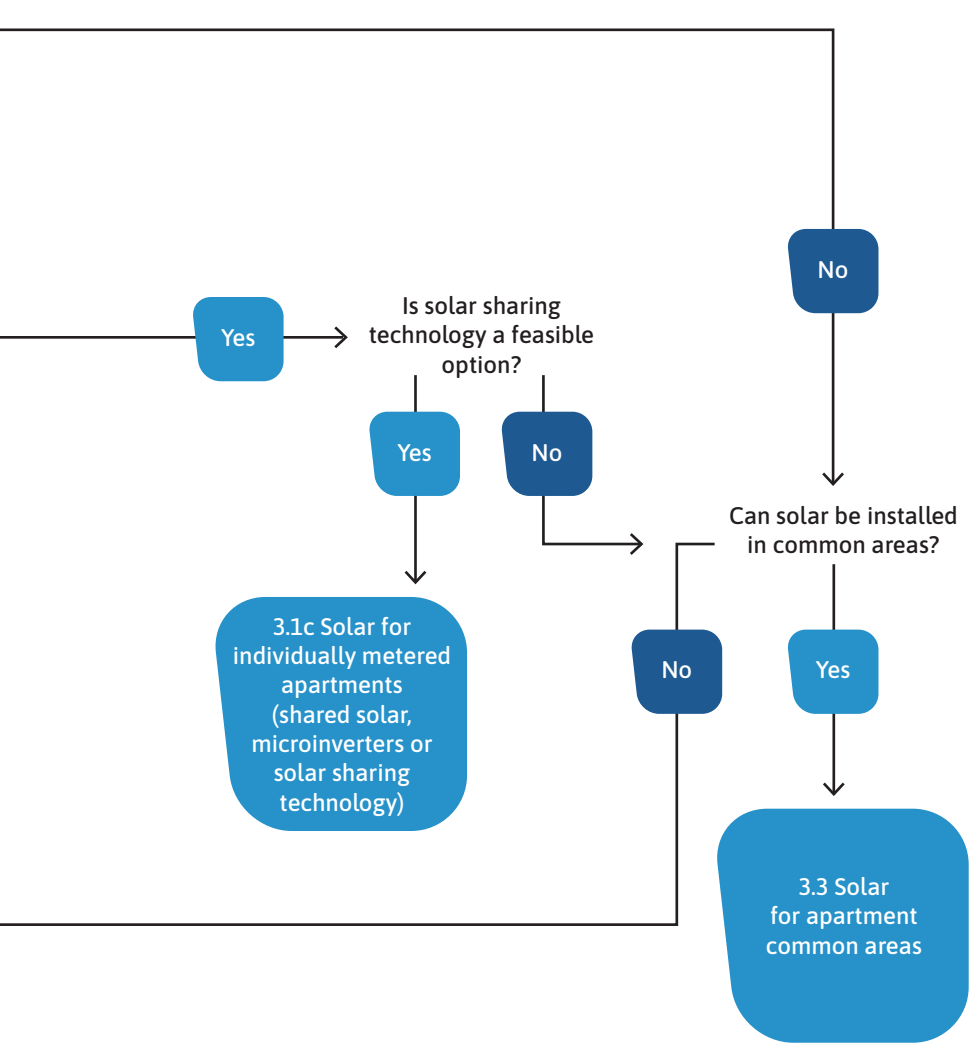
[11]WattBlock case study: https://www.wattblock.com/uploads/4/4/9/8/44984189/wattblock_solar_on_apartment_buildings_case_studies_051218.pdf.pdf
Aerial images sourced with authorisation from Nearmap.

3.4 Solar option decision tree

Here's an overview of how to choose the best option for your apartment building. (Note that it should only be used as a guide, and individual circumstances may vary.)

Are you buying into an apartment at the development and design phase?

- Yes → Discuss solar options with developers, builders and other owners
- No → Are you connected to an embedded network?
  - Yes → Does the ENO agree to install solar?
    - Yes → 3.2 Solar for apartments with embedded networks
    - No → Consider alternatives to solar
  - No → Are strata levies for common areas low?
    - Yes → Are there technical barriers to connect individual apartments?
      - No → 3.1a Solar for individually metered apartments (individual solar systems)
      - No → 3.1b Solar for individually metered apartments (shared solar, microinverters or solar sharing technology*)
    - No → Consider alternatives to solar



*Allume's SolShare is an example of solar sharing technologies that distributes solar in multi-dwelling buildings. It physically directs power from a single solar system on the common roof to the participating units behind their meter (see the case study in section 3.1.2).

4. General guidance

This step-by-step guide covers the key phases of Planning, Approval and Installation. While this process is presented as moving from one step to the next, it's quite possible that your situation varies the order slightly.

Phase 1: Planning

Figure 2. Guidance overview

Step	Details	Stakeholders
Step 1 Research the basics	Understand the fundamentals of installing solar on apartments	• Residents
Step 2 Understand your situation	Identify the options, the opportunities and the challenges for your apartment	• OC • Strata Manager • Residents
Step 3 Seek third party advice (recommended)	Get independent advice to fill in the gaps and build your confidence	• Third party solar experts • Residents
Step 4 Get an initial quote	Get an estimated cost for installing solar on your apartment	• Solar installer • Residents
Step 5 Rally support from key stakeholders	Engage key stakeholders and gain support for installing solar	• OC • Strata Manager • Residents

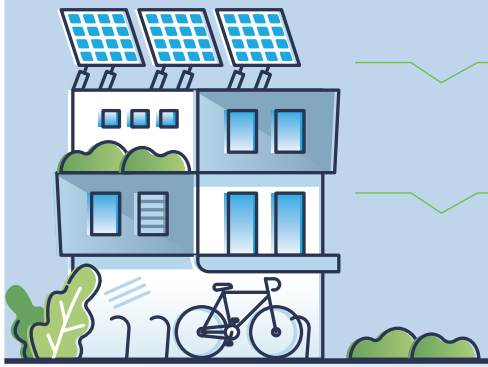
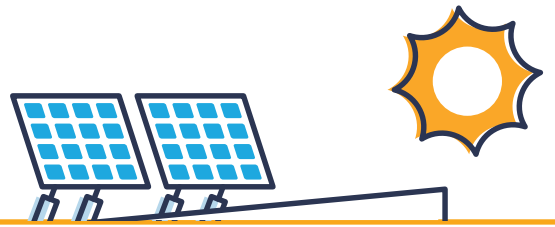


Figure 2. Guidance overview

	Step	Details	Stakeholders
Phase 2: Approval	**Step 6** Build your case	Develop a sound business case to take to your OC	• OC • Strata Manager • Residents
	Step 7 Get approval	Gain formal approval from your OC for the installation	• OC • ENO • Residents
Phase 3: Installation	**Step 8** Select and contract installer	Engage solar installer and get solar on your apartment	• Solar installer • OC • Residents



4.1 Planning

4.1.1 Step 1: Research the basics

Now that you know the options, let's get planning.

Having a basic understanding of what's involved in installing a solar system is essential.

Why is it so vital?

Feedback from stakeholders in the development of this Guide was unanimous: having a good grasp of the basics of solar energy makes for a much smoother path to a successful installation.

You should aim to have:

- A strong understanding of the steps involved in installing solar on apartments
- An awareness of the pros and cons of different solar options
- A grasp of technical terms and definitions
- The ability to engage different stakeholder groups from an informed position.

Where do I start?

By reaching this point in the Guide you're already on your way! Make sure you cover these topics:

- The different types of solar options for apartments (see section 3)
- The stakeholders involved in the overall process, and those to engage first
- The governance structure and decision-making process of your OC
- The benefits and costs associated with installing solar on apartments
- The common challenges faced along the journey (see section 2)
- The financial support available for installing solar on apartments (Table 8).

The following resources provide some excellent additional information to help you on your solar journey.

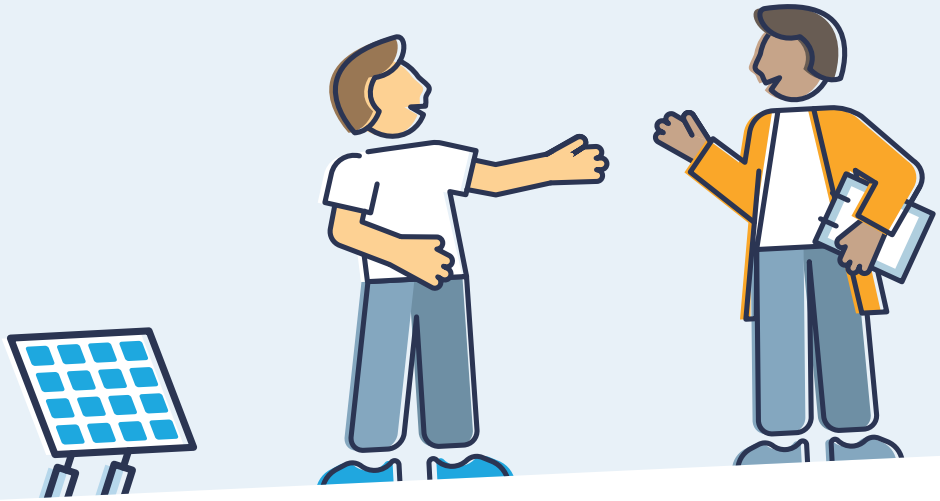


Table 2. Resources for understanding the basics

Topic	Description	Resources
Solar options for apartments, including benefits and challenges	Assesses the solar options available for apartment buildings.	https://www.solarchoice.net.au/blog/solar-for-strata-apartment-blocks/
	A great resource for renters wanting to approach their landlord about installing solar.	https://renew.org.au/renew-magazine/solar-batteries/solar-for-renters-and-apartment-dwellers/
Understanding owners corporations and special resolutions	An overview of OC functions and responsibilities.	https://www.acebodycorp.com.au/understanding-strata/what-is-a-body-corporate/
	Details the changes contained in the *Owners Corporations and Other Acts Amendment Act 2021*, and what this means for owners and tenants in apartment buildings.	https://www.acebodycorp.com.au/owners-corporations-act-amendments/
	This resource explains the powers and responsibilities of owners corporations.	https://www.consumer.vic.gov.au/housing/owners-corporations/rules/what-can-an-owners-corporation-make-rules-about
	Learn what a special resolution is - and when you'll need one.	https://www.consumer.vic.gov.au/housing/owners-corporations/meetings-and-committees/voting-and-ballot-guidelines
Financial support for installing solar	Solar Victoria has a number of solar rebates on offer – check if you are eligible.	https://www.solar.vic.gov.au/Solar-rebates
	Learn more about available financial support.	https://www.canstarblue.com.au/solar/a-guide-to-solar-power-in-victoria/

4.1.2 Step 2: Understand your situation

This step focuses on gaining a thorough understanding of your particular circumstances – getting to know your apartment building, identifying what solar options may be applicable for your situation, and anticipating the opportunities and challenges that may come your way.

Why is this important?

Each apartment building will have a unique set of physical, social and administrative characteristics that will influence if and how solar can be installed. While you'll develop a clearer picture as you go, there are compelling advantages to assessing your situation as soon as possible:

- Understanding the OC requirements that you will need to navigate when applying for solar
- Being able to involve members of your OC in the process from the outset
- Identifying factors that could dictate the size and type of a suitable solar system
- Allowing you to gather information for independent third parties and solar installers
- Helping you to inform fellow residents about the project, and build a clear business case for the OC.

Where do I start?

Table 3 below outlines how you can gain a firm grasp of your situation.

Table 3. How to better understand your individual situation

No.	Action	Description	Relevant sections in this guide
1	**Identify and engage your OC**	Your OC is not simply the gate-keeper to getting solar installed, it can also be a great source of information and a potential ally. Finding out who your OC members are and engaging with them is a crucial step.	Section 1.1: Owners corporation Section 5.1: Navigating your owners corporation
2	**Work out who owns the roof**	While usually the roofs of apartment buildings are considered a common area, there are instances where roof space can be owned privately. Which category is your building in? The answer will determine whether you will only need the OC's approval for solar or whether you will also need to work with specific residents. Your OC or strata manager should be able to assist with this information.	Section 1.1: Owners corporation Section 1.3: Strata managers Section 5.1: Navigating your owners corporation
3	**Find out if you are part of an embedded network**	This will help you clarify your solar options. If your building is part of an embedded network, your OC will most likely have to engage your ENO to get approval for solar. If not, your options include installing solar for individually metered apartments or for common areas. Please note that in light of Victorian Government's embedded network ban, residents of apartment buildings may have more flexibility in their solar options from January 2023 – regardless of whether they are part of an embedded network or not.	Section 3.2: Apartments with embedded networks Section A.1: Relevant regulatory frameworks

Table 3. How to better understand your individual situation			
No.	**Action**	**Description**	**Relevant sections in this guide**
4	**Understand your obligations**	Each OC will have a different set of administrative requirements you'll need to satisfy when proposing changes to common areas. Your OC or your strata manager will be able to provide this information. Understanding these requirements is essential in crafting a successful application.	Section 1.1: Owners corporation Section 1.3: Strata managers Section 5.1: Navigating your owners corporation
5	**Research previous proposals for retrofits**	Depending on the age of your building, previous applications for retrofits may have gone to your OC for approval. If there have been other applications, particularly for solar, it's important to know if they were successful or not, and why. That will reveal whether there were any technical challenges, resistance from residents, or other barriers that may be relevant to your project.	Section 1.1: Owners corporation Section 1.3: Strata managers Section 5.1: Navigating your owners corporation
6	**Find out if you need council approval**	In certain local government areas (LGAs), you will require approval from your council before you can install solar on your apartment. If you do, collect as much information as you can about the approval process.	Section 1.1: Owners corporation Section 1.3: Strata managers Section 5.1: Navigating your owners corporation
7	**Identify technical challenges**	You may have already identified challenges through engaging with your OC and reviewing past retrofit applications. Even so, working through the following questions will be helpful when you engage independent third parties (step 3) and solar installers (step 4): • How easy is it to access the roof? • How much roof space is available for solar? • How is your roof oriented? • How tall is your building? • Is there any overshadowing? Your OC or strata manager should be able to provide you with most of the above information. You can also use online tools such as Google Earth to view your roof space.	Section 2: What are the challenges? Section 5.3: How to facilitate the installation process Section A.3: Technical challenges
8	**Identify financial support options**	Table 8 in this guide outlines which forms of financial support are relevant to different solar options. Solar installers and energy experts should also be able to help you access rebates and other support.	Section 5.4: How to identify applicable financial support for your solar installation

4.1.3 Step 3: Seek third party advice (recommended)

Getting advice from an independent expert can help you understand the merits and challenges of different apartment solar options, find the right installer, or compare various system designs and quotes.

Why is this important?

Even if you are beginning to feel pretty knowledgeable about solar, getting independent advice can help make sure you haven't missed any critical information or good alternatives. Expert advice can help you:

- Ensure you have correctly identified the best solar option for your apartment building
- Ensure you have identified all available funding options
- Ensure you haven't overlooked any information that might affect your project
- Give you the peace of mind that you've thoroughly investigated all relevant issues
- Help you find the right solar installer for the best price.

Where do I start?

Here are a few ways to source independent advice:

1. **Your local council:** Does your local council have a solar program? In many LGAs, these are run by council sustainability or energy teams. The Solar Savers program, for example, helps residents choose the best solar products, find cost-effective quotes from reliable installers and identify their funding options.
2. **Independent not-for-profits:** Some renewable energy not-for-profits offer independent advice and other services. These may be free or for a fee.
3. **Service providers:** Organisations such as Solar Choice and Sustainability Now offer high-level feasibility assessments. You can also get free quotes from solar installers via the Solar Choice website.

Table 4. Examples of providers of independent advice

Topic	Description	Resources
Solar Savers program	Find out what this program offers	https://solarsavers.org.au/
Solar Choice	An overview of Solar Choice services	https://www.solarchoice.net.au/
Sustainability Now	Sustainability Now also offers energy audits	https://sustainabilitynow.com.au/
Renew	Renew provides independent energy advice	https://renew.org.au/

4.1.4 Step 4: Get an initial quote

Now to get an initial quote for an indicative costing for your solar installation.

Why is this important?

Getting an initial quote is really helpful. While the initial quoted fee for installing solar is likely to differ from your final installation costs, this quote offers the following advantages:

- It will help you assess early on whether it is financially feasible to install solar or not
- It will expedite the approval process with your OC, as the indicative cost must be included in your application
- It will allow you to share the indicative financial return of an installation with your OC and fellow residents.

Where do I start?

When getting your initial quote, you should do the following:

1. **Identify suitable solar installers:** You want your solar installation carried out by an accredited installer in line with best practice and regulatory standards, for a fair price and in line with your quote. There are two ways to identify suitable solar installers:
   a. **Independent advice:** An independent expert may be able to provide some recommendations.
   b. **Use the checklist:** If you chose not to seek independent advice, you will probably rely on an online search of local solar installers. Section 5.2 lists the key criteria to look for.

Table 5. Solar quote services

Resource	Description	Link
Clean Energy Council	The Clean Energy Council (CEC) is Australia's peak body for the clean energy industry. Installers who are not approved by the CEC are not likely to be experienced or reputable, and you may not be able to claim government financial assistance unless you use a CEC-approved installer. This website can connect you with approved retailers and installers in your area.	https://www.cleanenergycouncil.org.au/consumers/buying-solar/find-an-approved-solar-retailer

4.1.5 Step 5: Rally support from key stakeholders

Don't underestimate the power of engaging stakeholders on the benefits of going solar, and winning allies who support the installation of solar on your apartment building.

Refer back to Section 1 for an overview of your key stakeholders.

Why does it matter?

You may have a greater chance of getting solar installed on your apartment building if you have stakeholders on side. If you already have some support, use what you've learnt to engage more widely. As well as building a network of supporters, talking to stakeholders can yield invaluable information and innovative solutions.

In short, there are many rewards to be had, such as:

- Building a wave of support for solar from both your OC and other residents
- Developing relationships and partnerships with enthusiastic residents
- Identifying allies with knowledge and experience that may help drive the process
- Understanding differing expectations and concerns that you'll need to address
- Identifying new information and issues.

Where do I start?

Table 6 offers some useful suggestions.

Table 6. Actions for engaging key stakeholders and rallying support

Action	Description
Build a great argument	You're going to be engaging a variety of different people, all with varying levels of knowledge about solar energy. Focus on the most important information for the OC and other residents. This information should: • Be comprehensive - paint a detailed picture of what installing solar will mean for your apartment building • Outline the benefits and challenges; being transparent will create better conversations - and may bring solutions you hadn't considered • Avoid technical jargon; keep it simple and accessible • Highlight both environmental and financial benefits; remember that different audiences will be swayed by different incentives.
Enlist your allies	If you already have some supporters, they can help in practical ways by: • Collating the necessary information to share with other stakeholders • Contributing to the engagement process – this lets other stakeholders know that there's momentum behind your project. If you have support from installers or independent experts, they can help tackle complex or tricky questions.
Foster engagement	Here are some ways you can broach the topic of solar with others: • Ask residents you know if they'd introduce you to other residents and whether they'd be happy to advocate for solar with you • Attend OC meetings in person (if possible) • Organise an information session • If you and your neighbours use social media to stay connected, create a post asking for a show of interest in solar energy • If your building has a public noticeboard, use it to invite anyone interested in accessing solar energy to contact you • Create a flyer (one page max.) outlining your idea and your contact details • If you are a renter/tenant, first reach out to the apartment owner to see if this an idea they would support. Be prepared with a list of solar power's benefits.

4.2 Approval

4.2.1 Step 6: Build your case

Let's focus on collating the information you have collected to develop a clear and compelling application.

Why is this important?

Presenting your solar idea to your OC is a critical step as it will decide whether you get the green light or not. If you've engaged your OC from the beginning, fantastic - you may already have some buy-in.

To gain permission to install a solar system on a commonly-owned roof, you will need to submit an application to the OC. You will also have the chance to submit your business case to your OC.

A strong application and business case should:

- Provide clear and concise non-technical information which is easy to understand
- Cover all relevant information (what, why and how?)
- Address any concerns your OC may have, such as maintenance of the roof, the structural impact on the building, fire safety and possible visual impact of the installation.

Where do I start?

To give you the best chance of success, your application should communicate the following:

- All viable options identified for installing a solar system on your apartment building
- The key benefits and costs for each option
- All available funding options
- Proposals for how solar energy could be equitably distributed amongst residents, and other benefit sharing arrangements (financial and otherwise)
- How your proposal addresses any challenges around installing solar on your apartment building.*

Any building application forms will be specific to your OC, and you should ask it to supply them.

4.2.2 Step 7: Get approval

Now it's time to put all your hard work into action and submit your application!

Why is this important?

This is a big moment in your solar journey. If you've followed the previous steps closely, you have already engaged your OC and they're on this journey with you. Their involvement early on will have allowed you to address any concerns and hopefully has led to some great collaboration.

What can I do?

By now, you will have built a powerful case for installing solar. The key actions to progress are:

- Submit your application to the OC and (hopefully) gain a 75% or greater approval for a special resolution. Remember that: *"an owners corporation must not make rules that unreasonably prohibit the installation of sustainability items on the exterior of a lot including solar hot water systems [or] solar energy panels"*.[12]
- If your OC does approve the installation of solar on your apartment building, you can then apply for a planning permit with your local council (if required in your LGA).

*For some solar system options, not all apartment owners need to opt in to having solar power supplied. However, the question of how apartments could opt in to having solar in the future should be addressed. The issue of equitable distribution of solar is especially pertinent for new residents who were not involved in the initial decision about which apartments received solar energy. This issue will be unique to each apartment building and should be discussed with all residents and the OC to determine how to address this for your apartment building.

[12]https://www.consumer.vic.gov.au/housing/owners-corporations/rules/what-can-an-owners-corporation-make-rules-about

4.3 Installation

4.3.1 Step 8: Choose a solar installer

With formal approval sorted, you'll have a spring in your step! Next up is selecting a solar installer, tapping into any financial support available to you, and keeping good records.

Why is this important?

Choosing a solar installer and assessing financial support options are hopefully the final steps in your solar journey. Take your time on this to ensure:

- The installation is undertaken as efficiently as possible
- There is minimal disruption experienced by residents during the installation process
- You get the best value deal whilst ensuring the installer is suitably qualified
- You maximise the financial return of your solar system.

Where do I start?

Once you've identified several suitable installers, you're ready for these next steps:

1. **Get a final quote:** Contact your preferred solar installer and request a site visit quote (as opposed to a desktop quote). This involves an installer physically inspecting your site, meaning they can more accurately estimate your project cost and length. You should get at least two quotes to compare. Refer to Section 5.2 for further information about finding the right installer for you.
2. **Contract your preferred solar installer:** Once you've reviewed their quote and are confident in their qualification and services, you can formally contract an installer.
3. **Apply for financial support:** Check whether you qualify for any of the rebates and funding schemes available for solar in Victoria. Your installer should know what's available and may be able to help you secure any applicable funding. See Table 8 for further information about these options.
4. **Keep records:** Table 7 outlines the forms that you should get a copy of for your own records. More detail can be found on the Victorian Department of Environment, Land, Water and Planning (DELWP) website[13].

[13]https://www.energy.vic.gov.au/renewable-energy/victorian-feed-in-tariff/whats-involved-in-going-solar/paperwork-required-for-solar


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Table 7. Solar forms needed during installation

Form	What does it do?	Where does it go?	Who fills it out?
Solar connection form	Notifies your electricity distributor that a solar system has been installed at your address, as well as outlining your rights and obligations.	To your electricity distributor. Find out who your distributor is on DELWP's website.[14]	• You • Your solar installer • Your registered electrical contractor (this may or may not be your installer)
Electrical work request	Notifies your retailer and distributor that electrical works have occurred or will occur on your property, and that your distributor is required to complete this work and/or change your metering.	To your electricity retailer.	• Your registered electrical contractor (this may or may not be your installer)
Certificate of Electrical Safety	Ensures the installation is compliant with the *Electricity Safety Act 1998* and *Electricity Safety (Installations) Regulations 2009* for all prescribed electrical installation work.	Your electricity retailer and Energy Safe Victoria.	• Your registered electrical contractor (this may or may not be your installer)

[14]https://www.energy.vic.gov.au/electricity/electricity-distributors

5. How to...

This overview will help you confidently tackle some of the trickier aspects of a solar project.

5.1 ... work with strata managers and owners corporations

Being able to work with your strata manager and OC effectively will pay dividends. Here's how to do it:

- **Get them involved and consult regularly:** It cannot be stressed enough how valuable it is to involve your OC and strata manager (if applicable) in the process from the outset.
- **Get to know your OC:** Develop a solid understanding of how your OC functions. Chat with other owners and attend OC meetings if you can. Are they on good terms or at loggerheads over certain issues? Doing your research here can help you see how easy or difficult getting approval for solar might be.
- **Learn about previous retrofits:** Reviewing previous retrofits is a good strategy. Try to find out why certain projects were or weren't approved, and whether your proposed installation will encounter the same challenges. Ask your OC or your strata manager for this information.
- **Address concerns:** When building your case, demonstrate how your proposal addresses any concerns other residents or owners may have. Addressing them can generate support and enhance the outcome.
- **Make things as clear as possible:** Make sure you address everything your OC will want to know as succinctly as possible. If your proposal is confusing or incomplete, you are less likely to win support.
- **Invite your installer or energy experts to an OC meeting:** If you have already selected your installer or have spoken with an independent energy expert, they may be able to support you here. Installers and independent experts are often happy to discuss a project – and it can reassure your OC that your proposal is sound.

5.2 ... select the right installer

This can feel daunting! To help you, stakeholders consulted for this Guide identified the following criteria:

- **CEC-accredited:** Ensure the solar installer is accredited by the Clean Energy Council using its online tool. CEC-accredited installers are trained to ensure your system meets industry and best practice standards.
- **Experience level:** Select an installer who has a minimum of 5 years' experience and has installed solar systems on apartment buildings before. Ideally, they will be a specialist in apartment building installations.
- **Don't go cheap:** Going with the cheapest option may not be the best idea. You should do your research and identify reputable solar installers.
- **Use advice from reputable sources:** If you have engaged an independent third party for advice, or your local council provides a service to help you identify reputable installers – use them. These organisations have screened solar installers to make your job easier.

5.3 ... facilitate the installation process

Work through these key actions before signing a contract with an installer:

- [ ] **Confirm who owns the roof:** is it considered common property or is it privately owned?
- [ ] **Confirm access to your roof space**. Is there a stairwell/lift, internal or external ladders, manholes etc.?
- [ ] **Ask your OC or strata manager** for a map of the roof, or for the total area (square meters) available.
- [ ] **Ask your OC whether the roof slopes or not**. If it does, try to confirm which direction it faces.
- [ ] **If you cannot get a map or area from your OC**, use online tools such as LG's roof space calculator for solar to get a rough estimate for your installer. Please note that these are estimates only.[15]
- [ ] **Confirm the height** of your building with your OC or strata manager.
- [ ] **Use Google Maps to take screenshots** of the roof space. This will give you installer a preliminary idea of any objects or obstructions on the roof that limit space for solar panels.
- [ ] **If possible, take photos of the roof space** for the installer – this gives them more detail on roof layout.
- [ ] **Identify any shading from other buildings**. If you can't safely access the roof, you can check out whether adjacent buildings are likely to cast a shadow during certain times of the day.
- [ ] **Engage an independent service provider** to assess viable options and high-level costing of each option.
- [ ] **Collect billing information for common areas**. You may be able to get this from your OC or strata manager.

[15]LG's roof space calculator for solar: https://www.lgenergy.com.au/solar-calculators/solar-system-based-on-roof-size#roof-direction

5.4 ... access financial support

Table 8 outlines some of the major financial support avenues and eligibility criteria.

Table 8. Financial support options for solar systems in Victoria (as of September 2022)

Scheme/Program	Description	Eligibility	How can it be claimed?	Useful links
Solar Homes rebates (Solar Victoria)	Solar Victoria provides rebates for solar system installations and an additional interest free loan repaid over 4 years, to eligible householders. Visit **https://www.solar.vic.gov.au/solar-panel-rebate** to see the latest rebate and loans you may be eligible for.	Homeowners must meet the following criteria: • they are the owner-occupier of the property • the owners have a combined household taxable income of less than $180,000 per year (based on their Australian Tax Office Notice of Assessment) • they have not already received a solar battery rebate as an owner-occupier under the Solar Homes Program • it is an existing property, valued at under $3 million • they do not have an existing solar system. Note: Currently only available for installations where each apartment has their own inverter.	To claim your solar rebate, you will need to follow the steps provided on Solar Victoria's website. These include: 1. Get a written quote from your authorised solar retailer 2. Get pre-approval from your electricity distributor 3. Get your eligibility number and QR code.	A detailed guide to claiming the Solar Homes rebate: **https://www.solar.vic.gov.au/how-to-apply**

Table 8. Financial support options for solar systems in Victoria (as of September 2022)

Scheme/Program	Description	Eligibility	How can it be claimed?	Useful links
Small-scale technology certificates (Clean Energy Regulator)	STCs operate as a form of rebate on the initial purchase price of a solar system. This is usually claimed by the installer on a resident's behalf and the savings are passed onto the resident through a discount on installation. The discount offered is based on the expected power generation over a 15-year period or from the date of installation to 2030 (when the scheme ends). One STC is usually equivalent to 1 MWh of renewable electricity generated by a small-scale solar installation (less than 100kW).	Criteria for STC eligibility: • have certificates created within 12 months of the installation, with your panels and inverter listed on the Clean Energy Council (CEC) list of approved components; • meet Australian and New Zealand standards; • use a CEC-accredited designer and installer and meet the CEC design and install guidelines; • comply with all local, state, territory and federal requirements, including electrical safety, and • Be classified as small-scale, a solar panel system that has a capacity of no more than 100 kW, and a total annual electricity output less than 250 MWh.	In almost all cases, your installer will create and sell STCs on your behalf, in exchange for a discount on the upfront cost of your system.	Learn more here: https://www.cleanenergyregulator.gov.au/RET/About-the-Renewable-Energy-Target/How-the-scheme-works/Small-scale-Renewable-Energy-Scheme
Feed-in tariffs (various electricity retailers)	Surplus electricity you don't use is exported back to the grid, and your energy retailer compensates you via a feed-in tariff (cents/kWh).	Key eligibility criteria for this option include: • Your solar system is less than 100kW; and • Your energy retailer offers a feed-in tariff.	You will automatically be paid a feed-in tariff for excess energy once your solar system is connected to the grid. Different retailers offer different feed-in tariffs; however, the Victorian Government sets the minimum allowable tariff.	https://www.energy.vic.gov.au/renewable-energy/victorian-feed-in-tariff

6. Appendices

A.1. Relevant regulatory frameworks

Table 9 outlines critical regulatory frameworks (national and state) you should be aware of:

Table 9. Relevant regulatory information for installing solar systems on apartments

Item	Description	Impacted party
Building Code of Australia (BCA)	All new homes and some renovations, alterations and additions must meet a 7-star Nationwide House Energy Rating Scheme (NatHERS) rating, meet all the BCA requirements, or develop other solutions by engaging an expert in energy efficiency.	Builders and developers
National Construction Code (NCC)	Under the Code, apartments qualify as Class 2 buildings. For these to be compliant, annual greenhouse gas (GHG) emissions of common areas must be less than 90% of annual GHG emissions of the reference building. Emissions can be offset by renewable energy generated onsite. .	Builders and developers
By-laws: Special resolution for changes to common areas	Any alterations to, or retrofits of, common areas in Victoria must be approved by at least 75% of owners or their proxies. As a solar system is usually installed on the roof of strata buildings, this requires a special resolution to be passed. It's important to note that *"an owners corporation must not make rules that unreasonably prohibit the installation of sustainability items on the exterior of a lot including solar hot water systems [or] solar energy panels".*[16]	Owners corporations
Ban on embedded networks (from January 2023)	The Victorian Government banned embedded networks in new residential apartment buildings as of January 2023. The aim is to give customers better access to competitive energy deals.	Embedded Network Operators
Owners Corporations Act	Updated in 2021, this legislation outlines the role, powers and responsibilities of owners corporations in Victoria.	Owners corporations

[16]https://www.consumer.vic.gov.au/housing/owners-corporations/rules/what-can-an-owners-corporation-make-rules-about

A.2. Alternatives to rooftop solar

Unfortunately, installing a rooftop solar system may not always be possible – but that's not the end of your solar story. See Table 10 for some alternatives.

Table 10. Alternatives to putting a solar system on your apartment building

Options	Description
GreenPower	GreenPower is 100% renewable energy which you can buy through most energy retailers.[17] The Green Electricity Guide can point you towards green electricity providers in your area.[18]
Purchase Power Agreement (PPA)	PPAs are fixed-term contracts allowing residents to buy solar energy generated by a specific renewable energy project, such as an offsite solar array.
Solar gardens	Solar gardens (or 'solar banks') are becoming increasingly popular for residents who can't put solar on their own rooftops. A solar garden is a central grid-connected solar PV array from which nearby community members can lease or buy small 'plots' (e.g. 1.5kW), receiving a credit on their power bills for the plot's solar generation – just as if the panels were on their own roof.

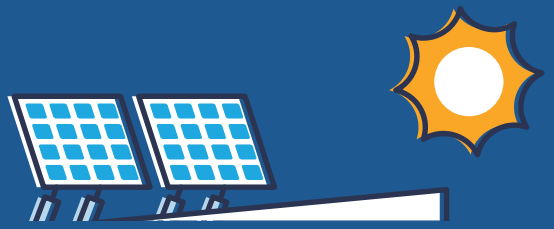
[17]GreenPower: https://www.greenpower.gov.au
[18]www.greenelectricityguide.org.au

A.3. Technical challenges

Table 11 summarises the most common technical challenges you may come across.

Table 11. Overview of technical challenges you could encounter along your solar journey

Challenge	Description
Existing electrical infrastructure	An apartment's existing electrical infrastructure can determine the cost of installing solar and the range of available options. A key issue is whether existing cabling allows for easy connection of solar panels on the roof to the switchboard and meters. Many multi-storey apartment buildings have an "electrical riser", a special cavity in which cabling can be installed vertically through the building. If you don't have a riser, your building will either: • require cabling for your solar system to be installed externally; or • have to be retrofitted with a riser. Both solutions will add to your overall installation costs. Another consideration is your current meter. Most apartment dwellings in Victoria now have smart meters – which can be easily connected to a solar system. Don't have a smart meter? You can organise to have one installed by your electricity distributor. Your solar installer may also be able to help arrange this.
Roof access	Solar panels are large and bulky pieces of hardware – which makes good access to the roof essential. Access varies greatly from building to building, and while some may have lift or stairwell access, some can only be accessed via manholes or external ladders. If your building's access is poor, it can limit the size of your system or require a crane.
Roof space	Available roof space also dictates system size. Apartment roofs often house heating, ventilation and air conditioning systems or are used as common areas. Solar system size per apartment can also be limited by the ratio of roof space to number of apartments. For example, the roof space of an apartment building of 60 or more units will likely be insufficient to install a system large enough to power more than just the common areas.
Roof orientation	You want your panels positioned to capture the maximum amount of sunlight. In Australia, solar panels facing north generally produce the most energy over a full day, while panels facing east and west can better offset morning and late afternoon consumption. Panels facing south are not ideal, but may still be worthwhile – discuss this with your installer.
Overshadowing/ shading	Is your building's roof overshadowed by surrounding structures or vegetation? Any shadow cast over solar panels will reduce the amount of energy they generate. Working out the extent of any overshadowing is crucial in deciding where panels are placed. If you have shade over large sections of the roof for extensive portions of the day, installing solar may not be feasible. Your installer can help with this assessment.
Building height	Height can be a factor in two ways. The first is safety: installers can refuse jobs where the work environment is unsafe. Additionally, taller buildings are also likely to have more apartments, which can result in a lower roof space to apartment number ratio. This can limit your solar options.



Guide to Solar for Apartments

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