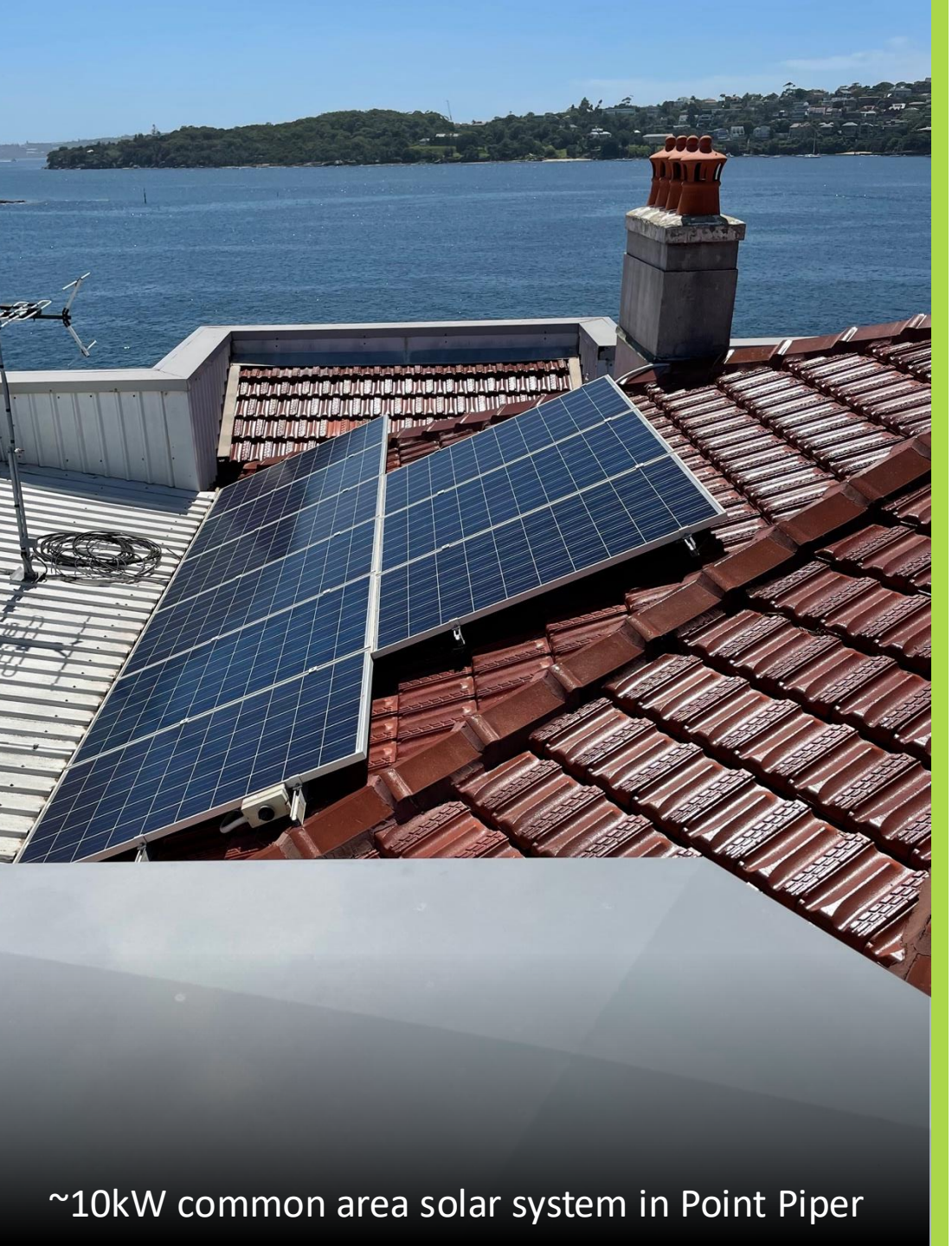

~10kW common area solar system in Point Piper

Solar for Strata

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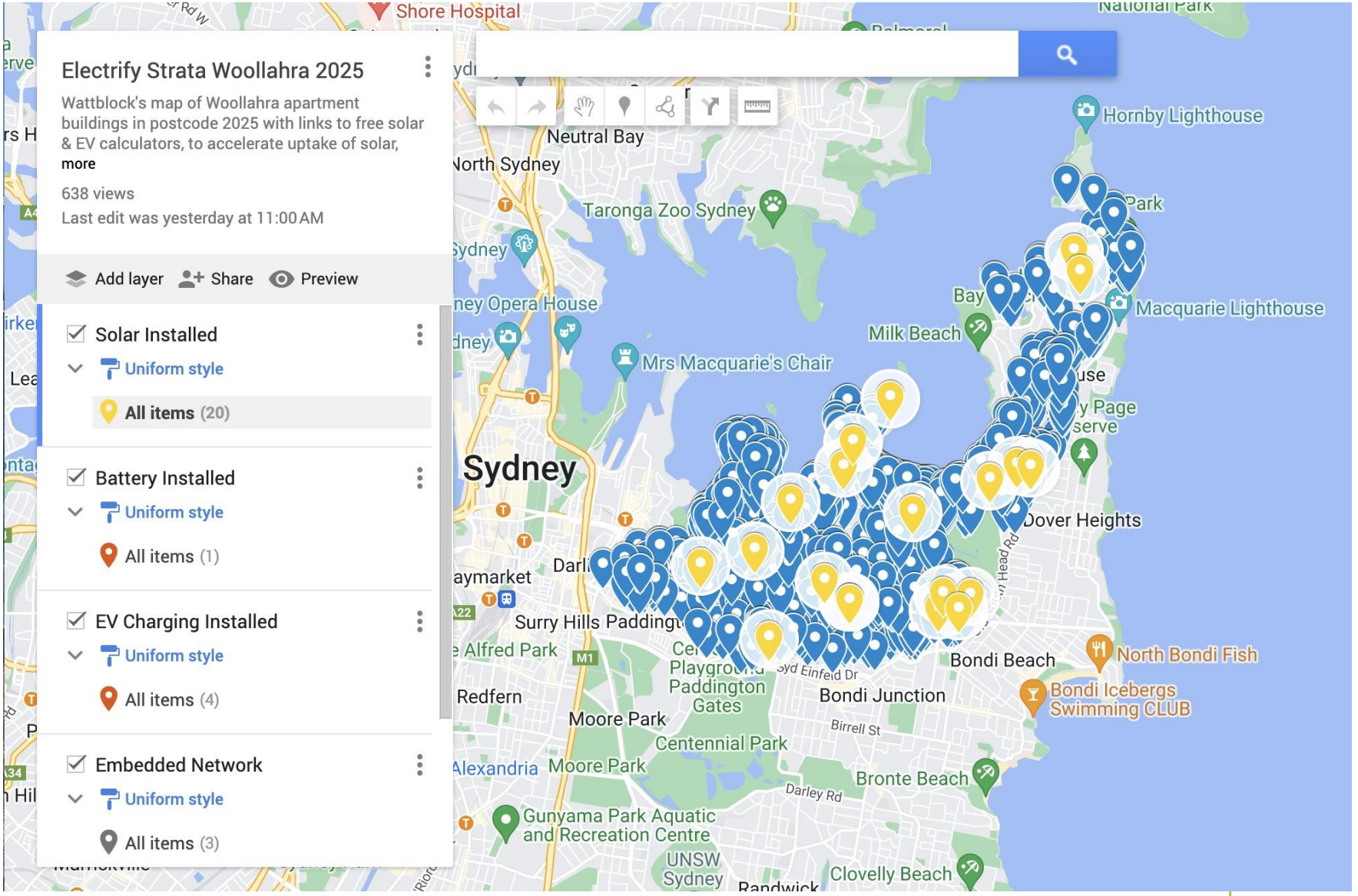
Electrify Strata Map of Solar Installs on Strata in Woollahra



https://www.wattblock.com/electrify-strata-woollahra-2025.html

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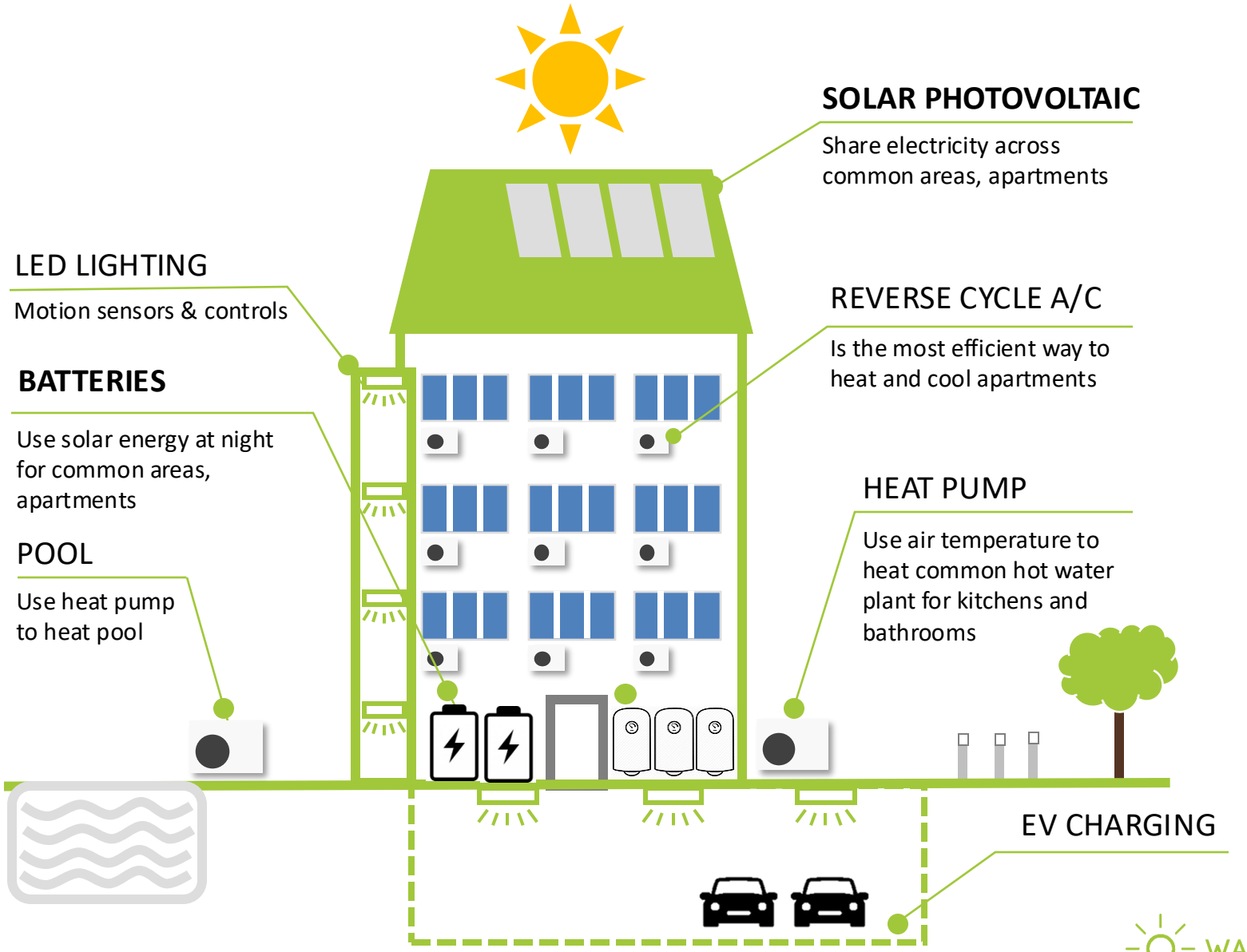
What does a sustainable strata building look like?



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Examples of Woollahra stratas exploring sustainability

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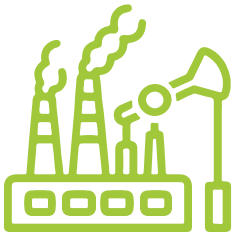
Why put solar on apartment buildings?

Clean electricity

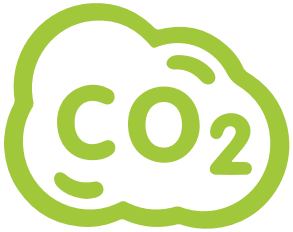
Lower bills

Increased energy security

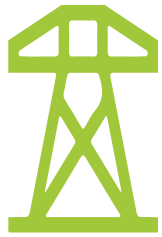
Low cost generation



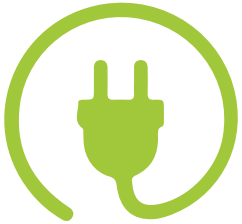
Reduced fossil fuel reliance



Reduced CO2 emissions



Reduce network demand



Reduce distribution losses

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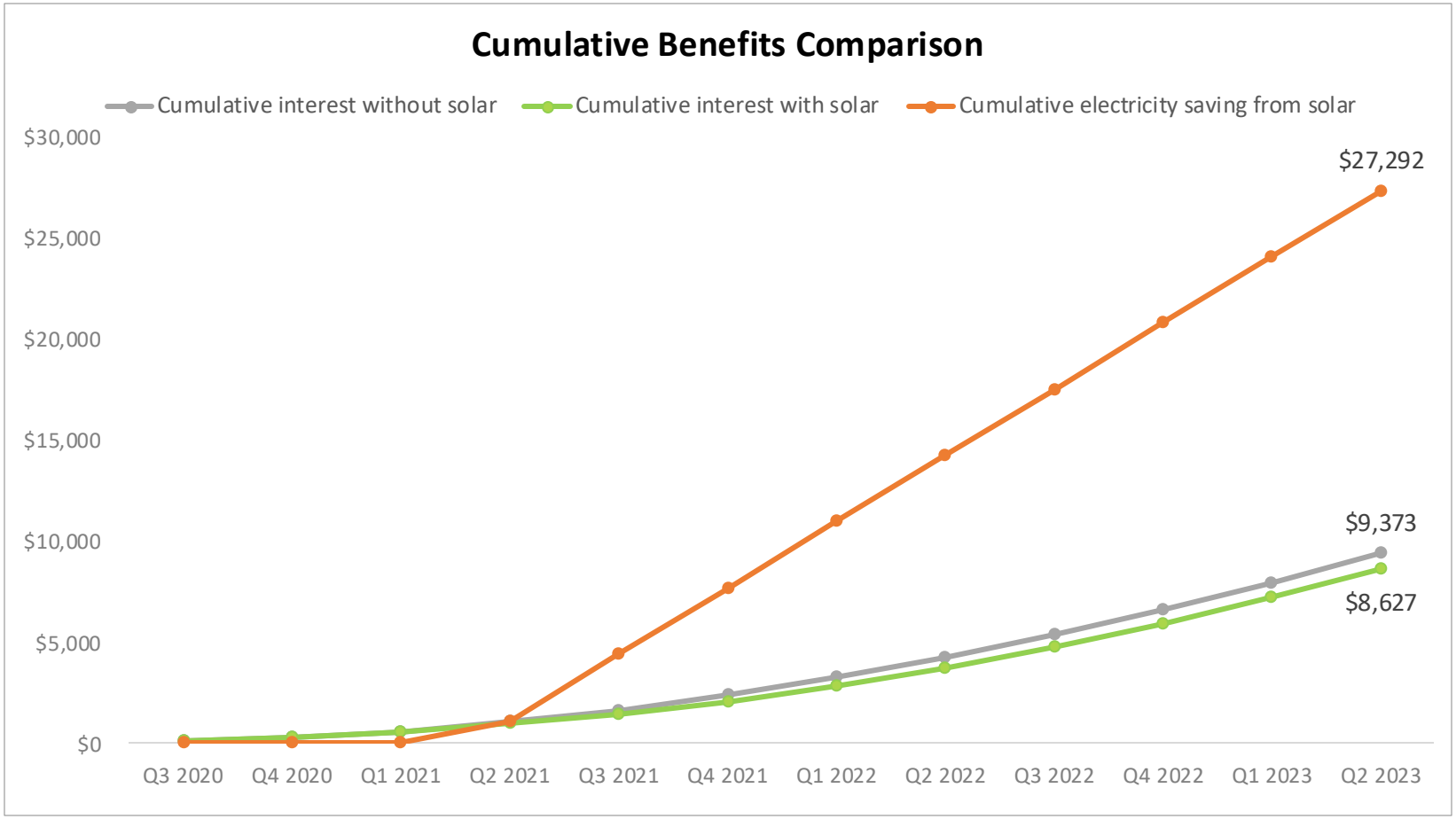
Solar savings are better than cash at bank

- Very little interest is generated with a capital works fund receiving 0.45% interest p.a. The solar savings for a strata scheme can be the equivalent of receiving 14% interest p.a.



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Steps to Install Solar in Strata

1. Check building for solar feasibility: roof condition and access, shading, electrical meter and switchboard.
2. Determine daytime electricity usage and identify kW size of solar array
3. Develop a business case and seek approval from the Body Corporate to get quotes
4. Progress with quotes
5. Compare and assess quotes
6. Obtain a final firm quote and seek approval to go ahead from Owners Corporation
7. Commission and install the system
8. Conduct a post-installation compliance inspection

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Roofs, System Sizes and Energy Produced

- Understanding how the terms kW and kWh are used will help you understand the quotes you receive and the costs and benefits of a solar system.
- **Example roof**
  - This solar system is 30kW.
  - It will produce about 120kWh of energy per day.
- kW is the measure of instantaneous power output.
- kWh is the amount of power the system will produce. This is the same measure of energy you'll find on your power bill.
- Rule of thumb for Sydney is 4 x kW = kWh per day. E.g. a 10kW system produces on average about 40kWh of power per day.
- The actual power produced depends on the panels you select, season and weather.

Unit block with 30kW solar system expected to produce 120kWh of energy per day

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Rules of thumb in solar

- Each solar panel is roughly 2m x 1m.
- Panels of similar size may produce more or less power e.g. 460W vs 570W per panel
- The number of panels to make up 1kW of solar system may be ~2 panels
- The highest performance panels are the most expensive e.g. 670W bifacial panels
- The average **cost per watt** of solar installed on a sample of Australia wide strata buildings after taking off the small-scale technology certificate rebate and including lifting costs is **$1.31 per watt**.
- This compares with **0.85c per watt** installed for residential houses

Size of Strata Building	Average Cost Per Watt Solar Install Estimate (after STC rebate inc GST)
Low Rise - 1 to 3 Levels	$1.23
Medium Rise – 4 to 8 Levels	$1.28
High Rise – 9 Levels and above	$1.42

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~1kW individual solar system

Four different solar models

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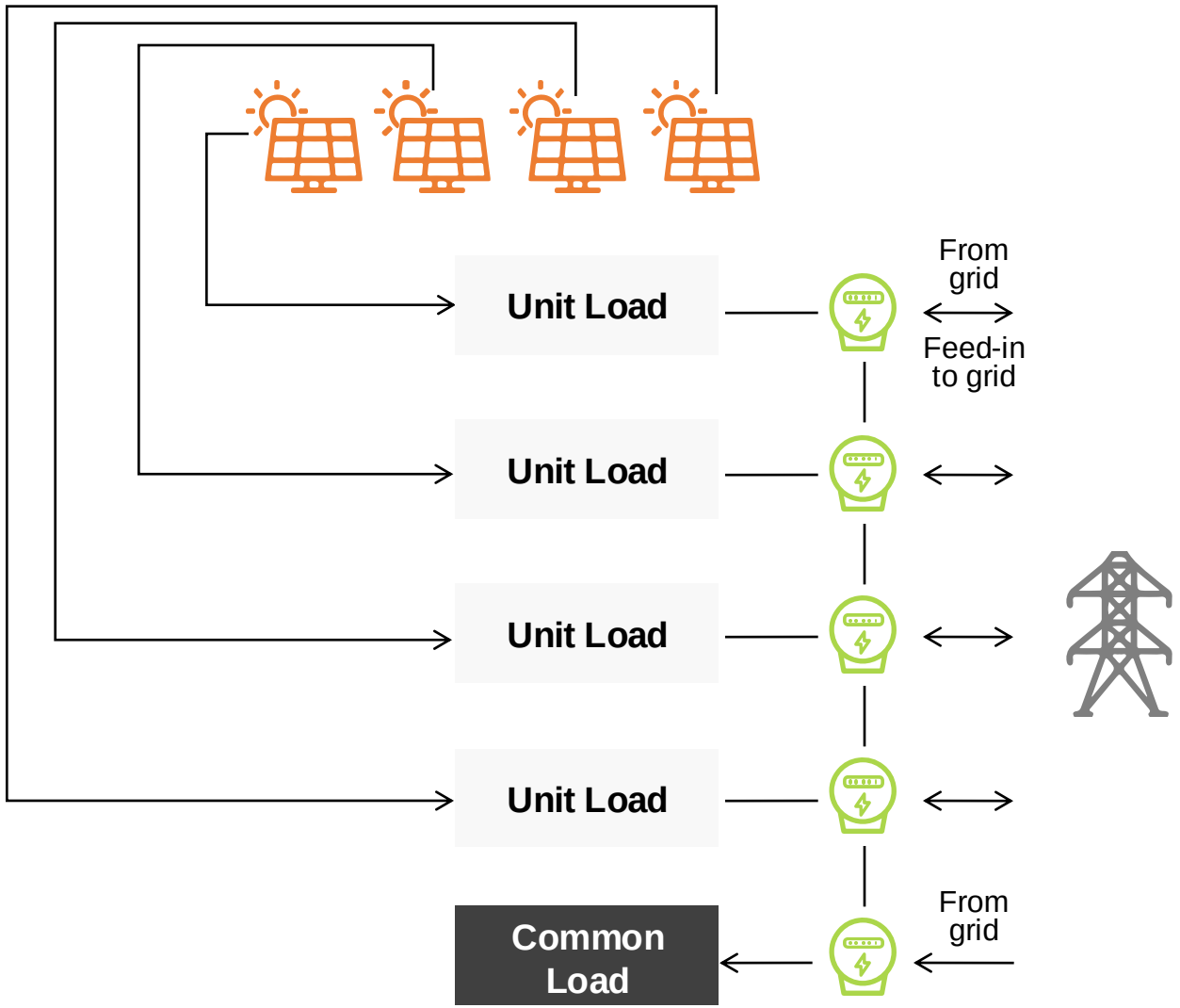
1) Individual solar systems for individual units



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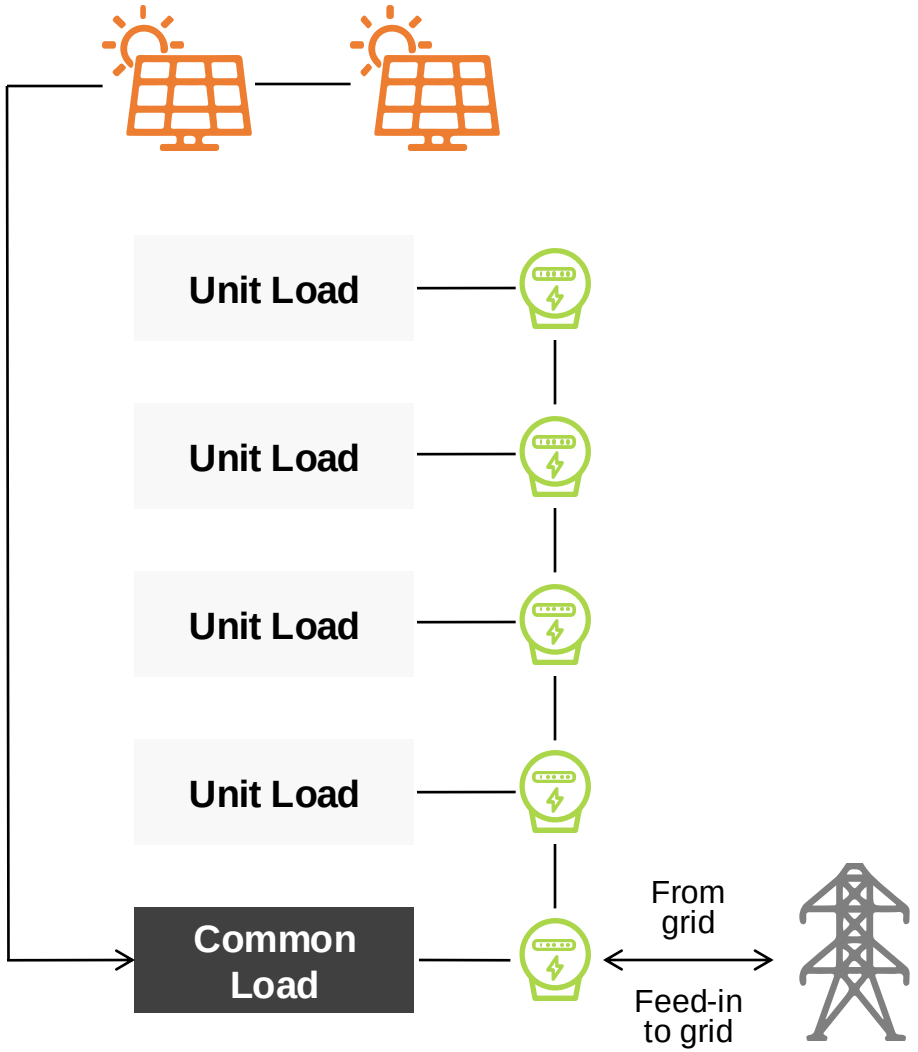
2) Solar system for common property only



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Common Area Solar on Strata

30kW

Double Bay

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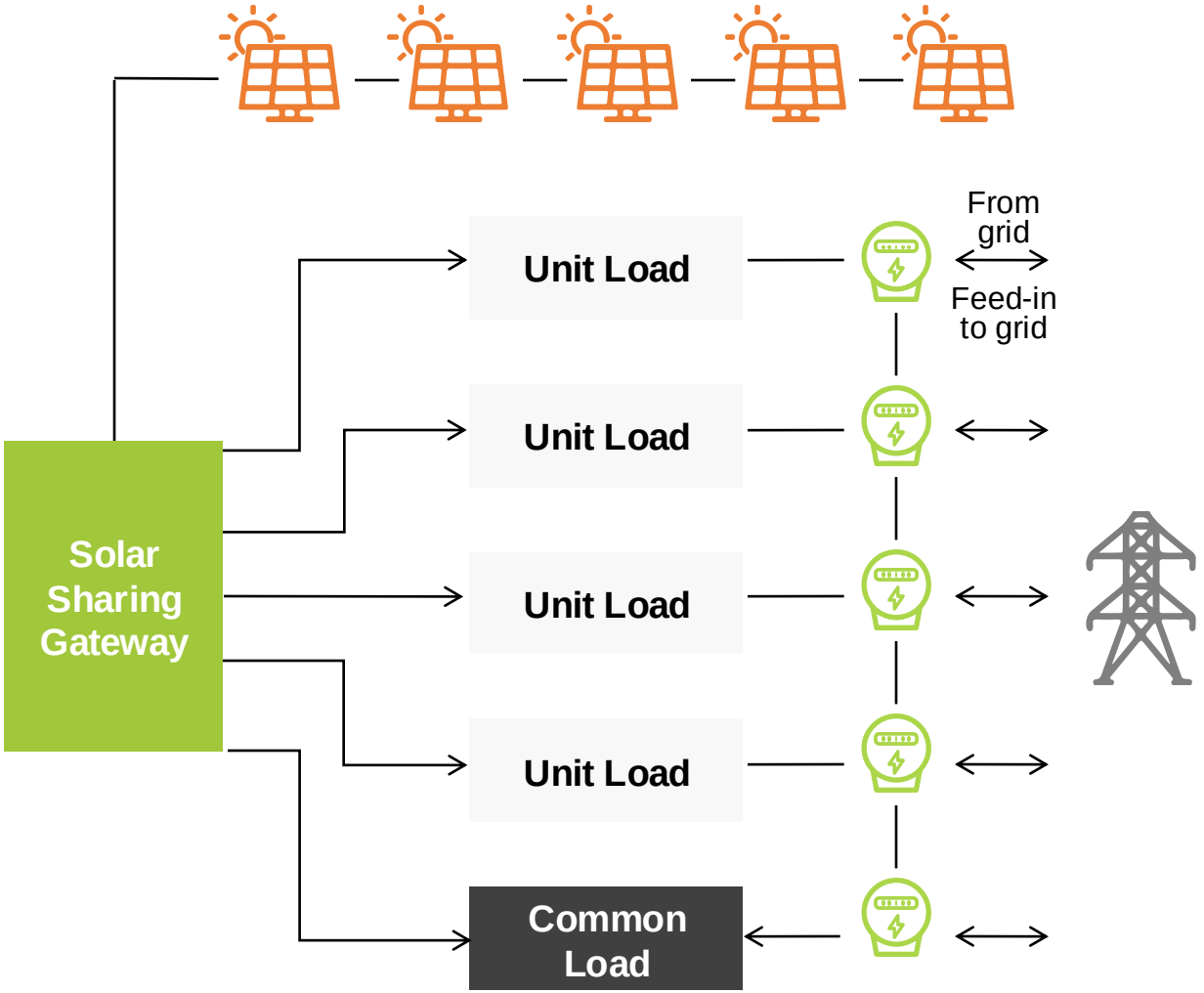
3) Solar for units & common areas via solar sharing gateway



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Solar Sharing System – 1 Ocean St Woollahra

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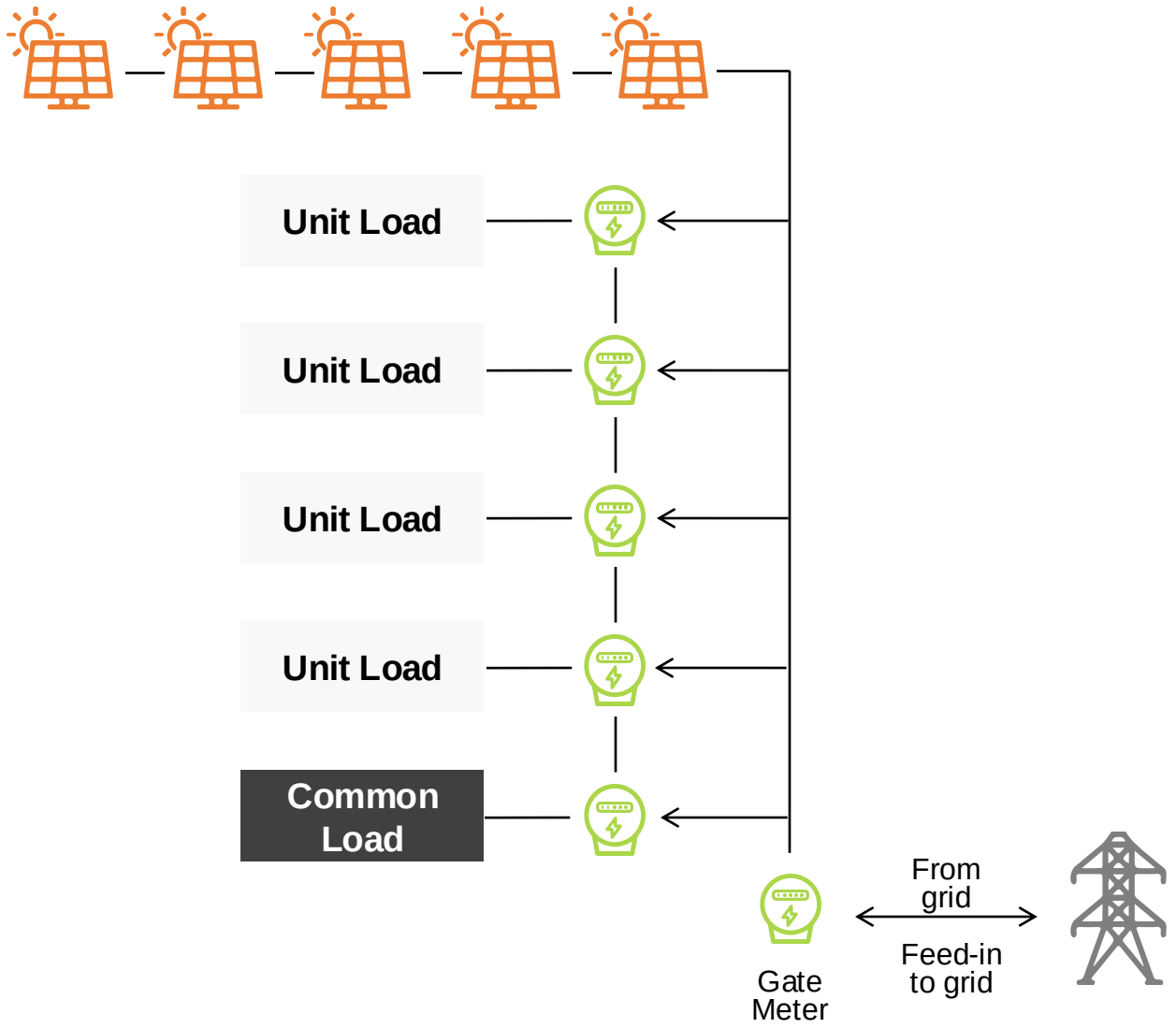
4) Solar for units & common areas via embedded network



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Solar for embedded electrical network at Schofield Gardens

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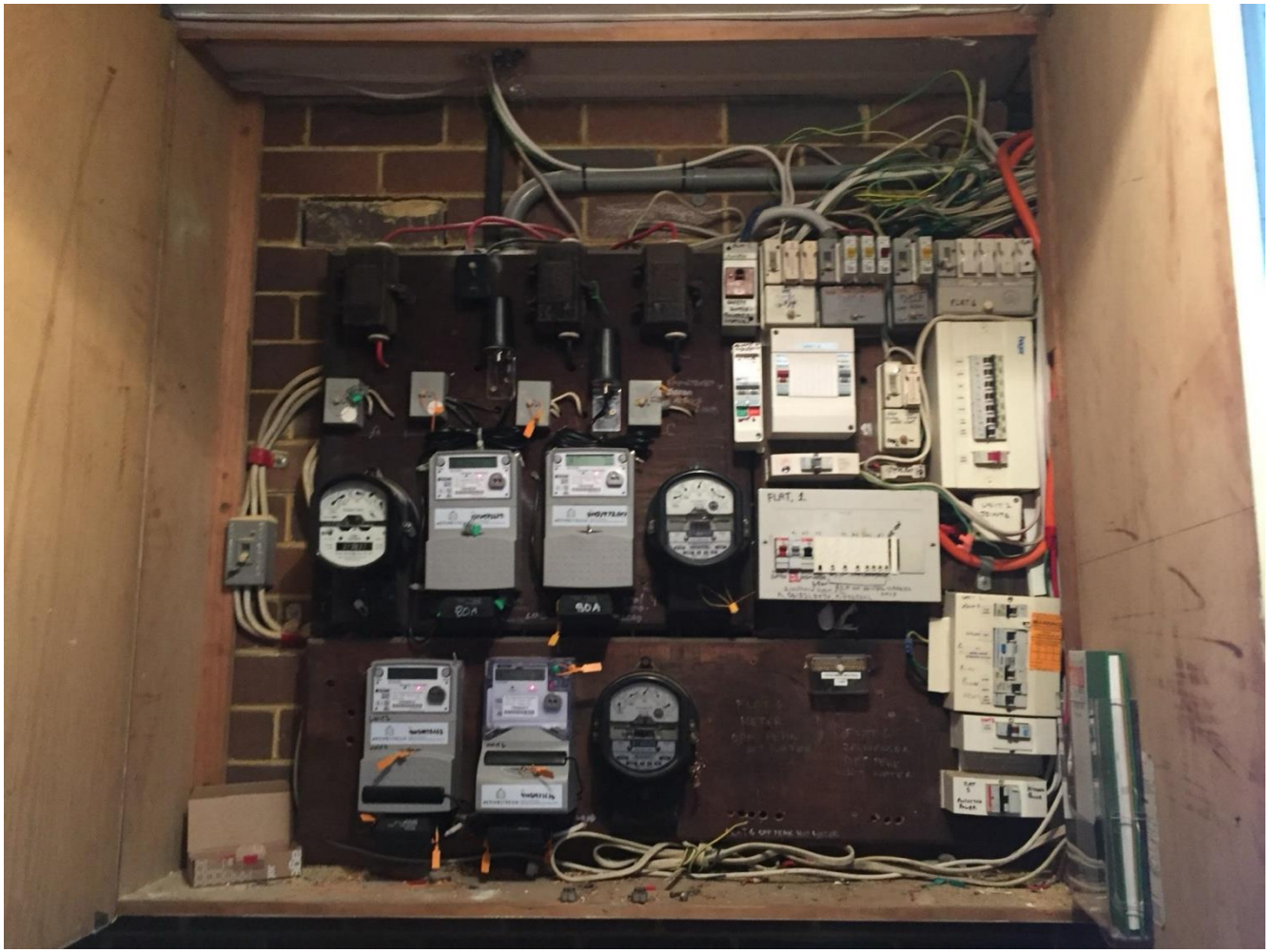
Switchboard and meterboard upgrades

- AS3000 is the Australian Standard. The following meterboard/switchboard is NOT compliant.



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Waterproofing

- Solar panel lifespan is 25 years which is longer than the lifespan of typical rooftop waterproofing
- Below is an example of a three layer waterproofing solution which cost ~$100k

Before

After

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Ballast vs Anchoring of Solar System

- It’s possible to ballast mount the racking for a solar system, using concrete blocks
- Benefit is that you do not have to penetrate waterproofing or the slab but it costs far more than anchoring the racking into the slab. For example, one third more for the same size solar system

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Getting panels to the roof

- If you do not have stairway access to the roof level, then additional cost is involved in getting the panels to the roof. It may need local council approval to close the street, put tiger tails on overhead electricity wires and hire traffic control.

Crane

Solar lift electrical hoist

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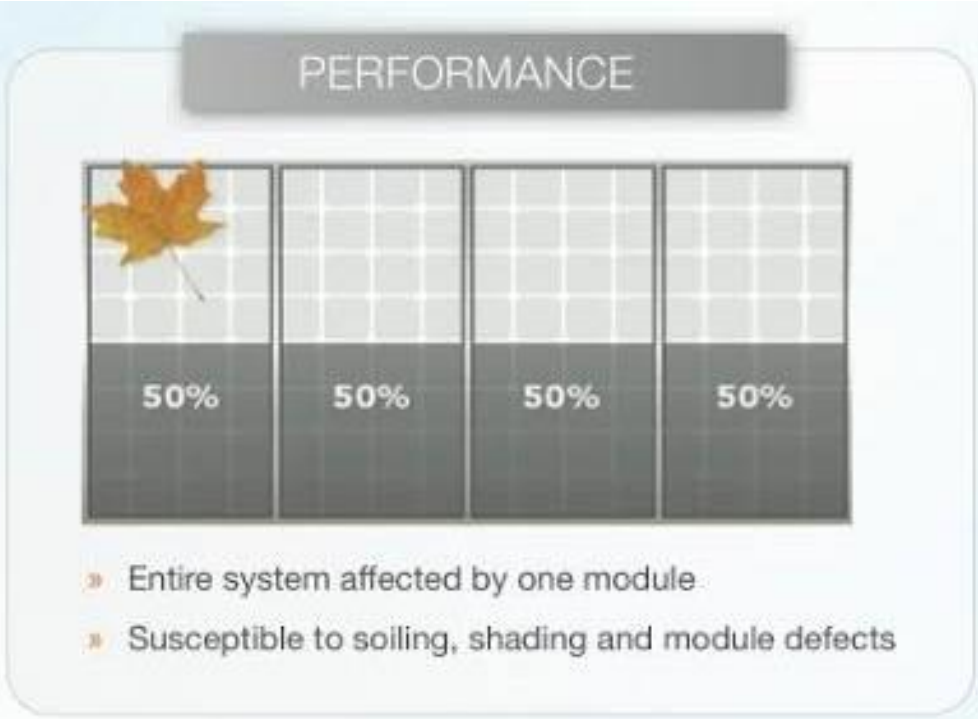
Inverters and shading of panels

- String inverters are not appropriate if trees shade the roof during part of the day. To get the best performance from roof area which is sometimes shaded, use microinverters or DC optimisers.

String inverter



Microinverter or DC Optimiser

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Batteries

Car batteries are made of lead-acid. Laptop and mobile phone batteries are made of lithium ion.

Lithium ion batteries installed in strata:

- Sungrow
- Tesla
- BYD
- Alpha ESS
- Enphase
- Sonnen
- Energizer

Most home batteries have ~13.3kWh of storage.

NSW Government introduced a battery rebate on 1st November 2024. Rebate varies across postcodes but could be $1,600 - $2,400 on a typical battery.

Tesla battery at 12 Wallaroy Cres Woollahra

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Case study: Solar and batteries – Camperdown

Camperdown strata uses NSW Sustainability Infrastructure amendment to approve solar + batteries with special levy

Background

- Participated in Inner West council's Go Solar for Strata program in 2021
- Owners Corporation voted under the new NSW Sustainability Infrastructure Amendment to the Strata Schemes Management act
- Raised a special levy to pay for the solar + battery system

Solution

Atlas Renewables chosen as Solar Installer

38.9kWp
Solar system

26.6kWh
Batteries

~$65,300
Capital Cost

Benefits

~63%
Common area electricity bill reduction

~6.8 years
Est. payback

52 tonnes
CO_2 reduced per year

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15kW solar on apartment block

Two different payment models

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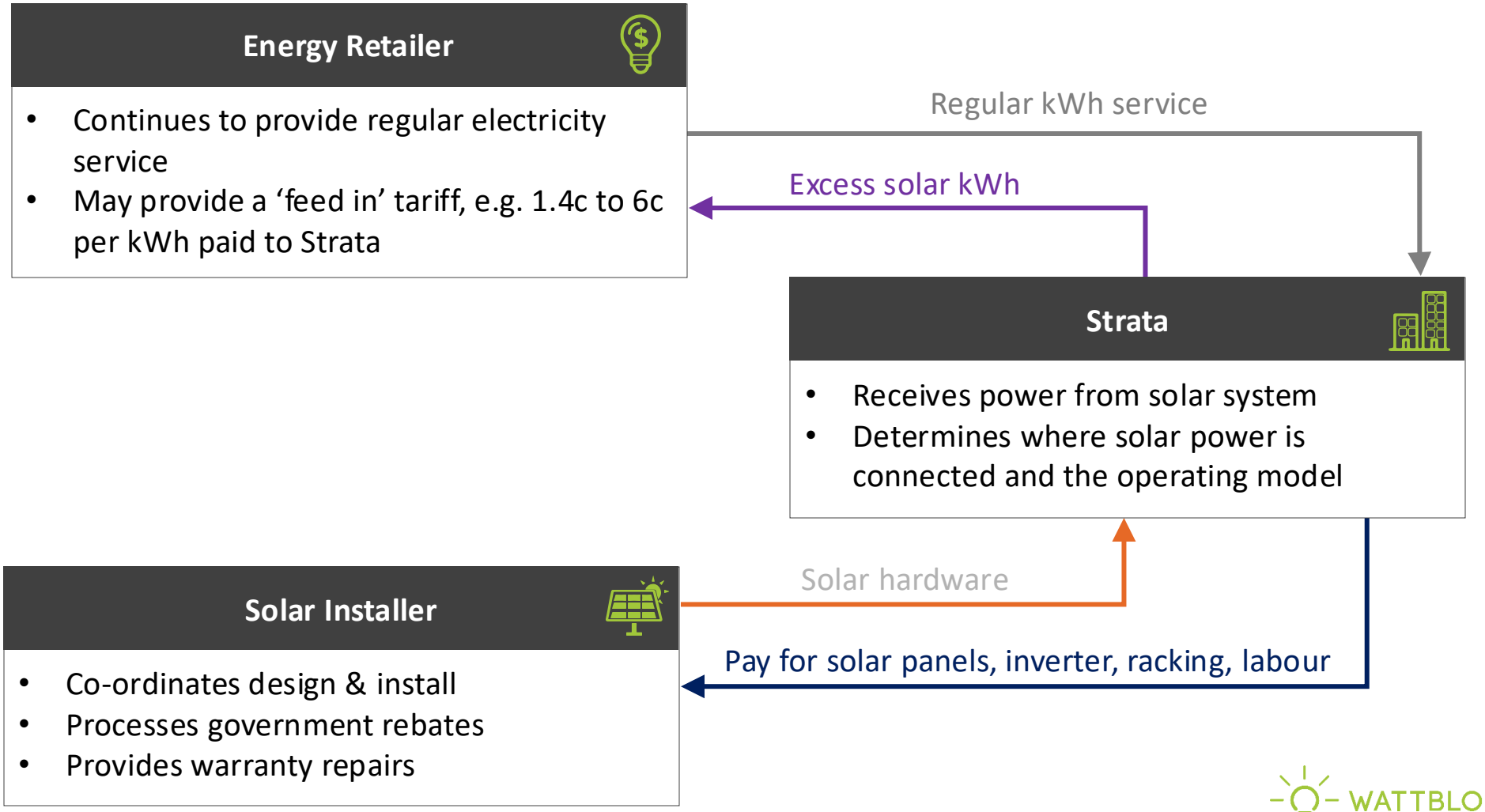
Own solar outright

Usually the best way for a strata is to purchase a solar system outright on a capital expenditure or **capex** model. This gives the maximum amount of control to the strata.



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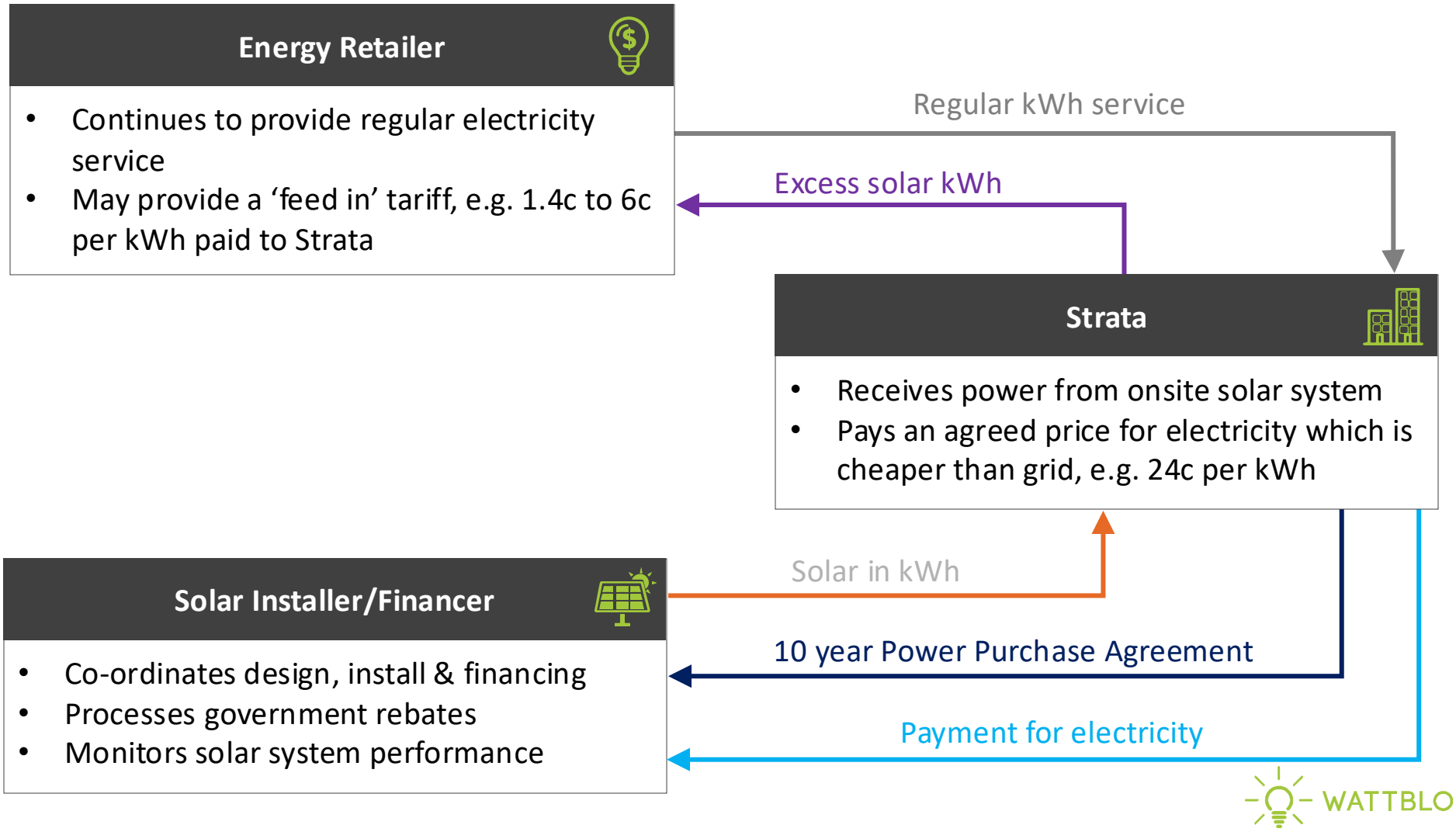
What is a power purchase agreement (PPA)?

Solar finance or leasing is involved. Strata doesn't initially own the solar system. $0 paid upfront.



What are the federal government rebates?

Small-scale Technology Certificates (STC's)

- Applies to solar systems under 100kW in size
- Depends on size of system, location & installer
- Included in quoted capex price to customer from Clean Energy Council accredited solar installer
- ~$2,500 on a 6.6kW solar system

Large Scale Generation Certificate (LGC's)

- Applies to solar systems over 100kW in size
- Full price capex price paid upfront on system
- Rebate is paid out on a schedule over 10 years
- Makes installing solar systems over 200kW attractive

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NSW Government Incentives

Peak Demand Reduction Scheme - Batteries

- 1st November 2024 the NSW government announced battery rebates for batteries between 2kWh and 28kWh
- Rebate varies depending on battery and postcode e.g. $1,600 - $2,400
- https://www.energy.nsw.gov.au/households/rebates-grants-and-schemes/household-energy-saving-upgrades/install-battery

Solar for Apartment Residents

- Expecting announcement after February 2025
- Supporting strata communities to install and share solar e.g. Allume Energy Solar Sharing

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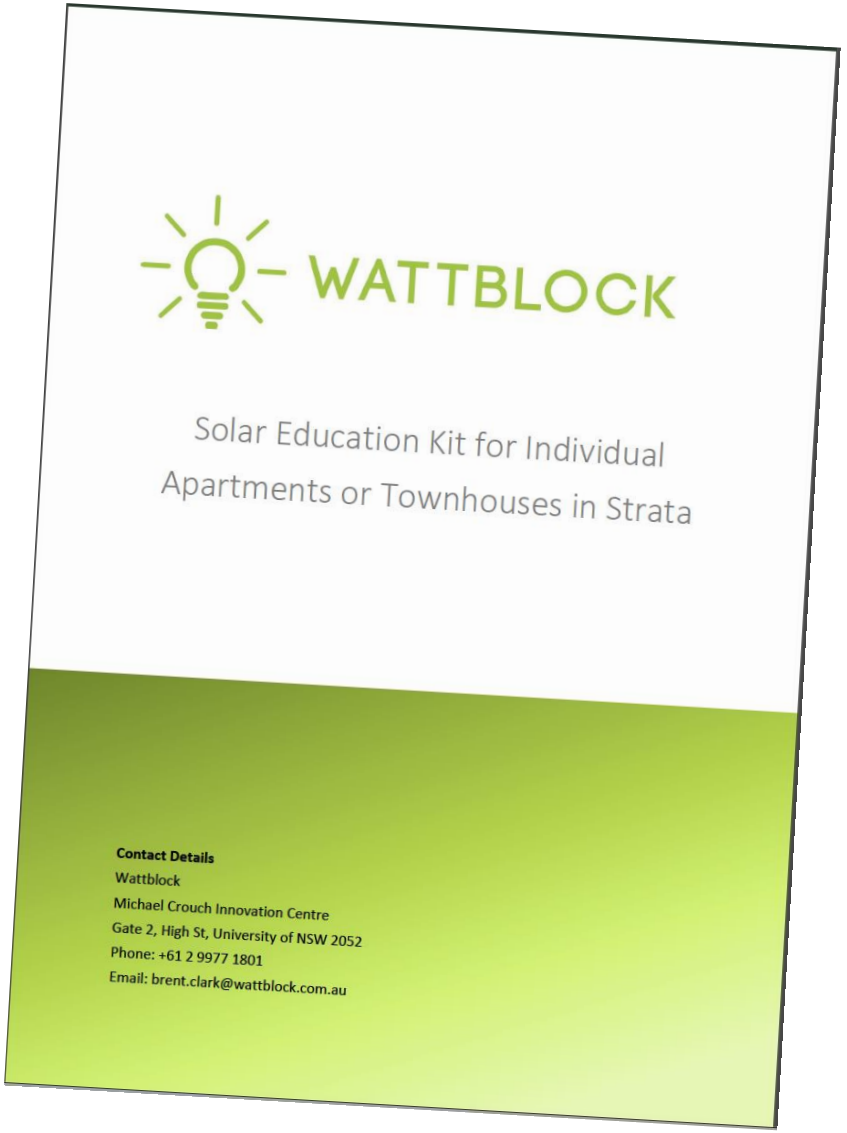
Individual Townhouses or Apartments in Strata

For those of you who live in a townhouse strata development, you will need to make an application to your strata scheme to request permission to use the roof above your townhouse, as that is actually common property.

Similarly, some low-rise apartment buildings of 3 storeys or below might have an individual apartment which might be interested in installing an individual solar system.

Download the “Solar Education Kit for Individual Apartments or Townhouses in Strata” from the Wattblock Education centre to help you prepare your application to your Owners Corporation.

https://www.wattblock.com/uploads/4/4/9/8/44984189/wattblock_solar_education_kit_for_individual_apartments_or_townhouses_in_strata.pdf



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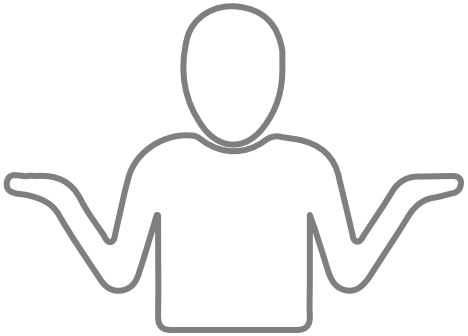
Challenges for Owners Corporations

Split incentives

Communication

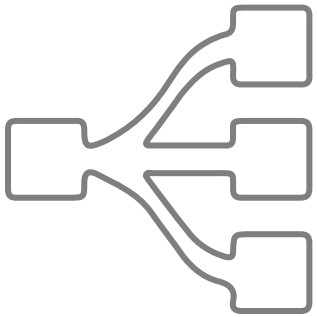
Apathy



Lack of information

Access to finance

Embedded networks



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Strata committee archetypes needed for solar

For a strata committee to successful pass a sustainability project, it needs at least one, if not two of the following **archetypes** on the committee to invest the time in research and educating the other strata committee members and Owners.

Bean counter

"Most important skill"

The energy savings from solar panels, if converted to an interest rate might be up to 14% p.a., compared with a capital works fund of 0.45% p.a. Also, financing solar is fine as long as return outpaces the lending interest rate e.g. 7% p.a.

Engineer

Procurement assistance

The engineer on the strata committee can understand the technical detail of quotations from different vendors and provide a view of the value offered by competing quotations.

Sustainability Champion

Carbon emissions

The environmentalist provides the willpower to keep going when the solar project seems too hard. They know they are playing a small, but significant part, at a local level in providing a better place for their children and their children's children.

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Difference between a special resolution and sustainability resolution

In 2021, the NSW Government changed the strata law so that only a **sustainability infrastructure resolution** of all unit Owners in a strata scheme is required, making ALL sustainability upgrades much easier.

Special Resolution	Sustainability Infrastructure Resolution
75% Unit entitlements threshold	50% Unit Entitlements threshold

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What can be classified as a Sustainability Infrastructure Upgrade?

For the purposes of this amendment, sustainability infrastructure means changes to part of the common property (which includes the installation, removal, modification or replacement of anything on or forming part of that property) for any one or more of the following purposes—

a. to **reduce the consumption of energy** or water or to increase the efficiency of its consumption,
b. to reduce or prevent pollution,
c. to reduce the amount of waste sent to landfill,
d. to increase the recovery or recycling of materials,
e. to reduce greenhouse gas emissions,
f. to facilitate the use of sustainable forms of transport, Note. For example, installing electric vehicle charging stations.
g. a purpose prescribed by the regulations.

Sustainability infrastructure resolution means a resolution to do any one or more of the following that is specified to be a sustainability infrastructure resolution—

a. to **finance** sustainability infrastructure,
b. to add to the common property, alter the common property or erect a new structure on common property for the purpose of installing sustainability infrastructure,
c. to change the by-laws of the strata scheme for the purposes of the installation or use (or both) of sustainability infrastructure.

How to pass a sustainability infrastructure resolution?

1. You don't need 50% of votes to pass the resolution
   - You only need 50% of the votes to not be against the resolution

   People who don't turn up to the meeting OR people that turn up to the meeting BUT abstain are not classified as NO votes.

2. A quorum is met with 25% of votes
   - Votes can be in person or by proxy

3. Strata scheme AGMs sometimes only just make a quorum, which means the decision is made by far fewer people than all owners
   - Of voters (present or proxy) at the meeting, the resolution will pass if not more than 50% vote against it

4. Voting is based upon unit entitlements

A studio apartment has less square metres than a 2 bedroom apartment which has less square metres than a 3 bedroom apartment. Different sized apartments have different 'unit entitlements' for voting. The voting for an ordinary resolution is based upon the sum of unitentitlements

For example:

- Total unit entitlements: 100
- 100 owners, all with 1 unit entitlement each
- Quorum was only just met at one AGM with 25 unit owners turning up
- Ordinary resolution for installing solar panels is passed if not more than 12 people who are present in the meeting vote against it

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What to look for in installers?

1. Accreditation - are they NETCC (New Energy Tech Consumer Code) approved or CEC (Clean Energy Council) accredited?
2. Experience and stability - have they been in business for several years?
3. Does the company have a local office and phone number?
4. Can they refer you to previous customers so you can ask about their service pre and post installation?
5. Will the company visit your block to assess your requirements?
6. Will the work be done by their own staff, or do they subcontract the installation?

Choice have a webpage with more details:
https://www.choice.com.au/home-improvement/energy-saving/solar/articles/how-to-find-a-good-solar-installer

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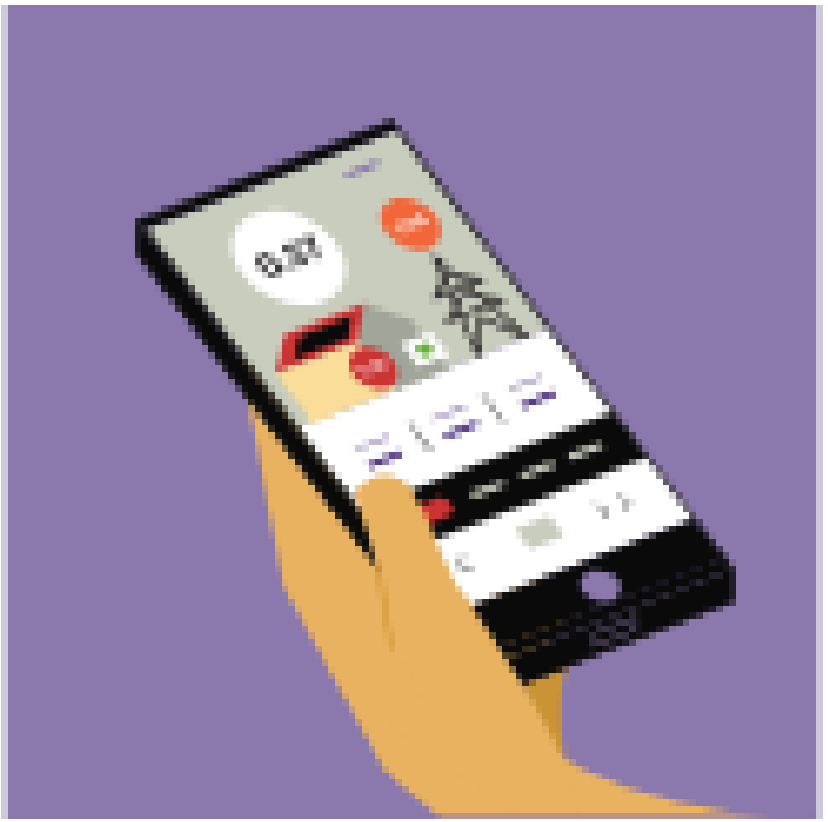
Making the most of your solar system

- Use monitoring apps to ensure system is working as expected
- Use your power while it's being produced.
  - Most power is produced 10am-4pm in summer and 11am to 2pm in winter
  - Manage load from common property during the day
  - Timing for electric hot water systems
  - Time appliances to work during the day
  - Consider adding a battery
- Check solar feed-in tariffs and time of use conditions with your energy retailer. Look for the best deal.
- Plan maintenance checks to help minimise any issues.



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Questions

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https://www.wattblock.com/solar-training.html

https://www.youtube.com/c/WattblockAu/videos

https://www.wattblock.com/electrifystrata.html

https://www.wattblock.com/electrify-strata-installer-directory.html

Electrify Strata

WhatsApp group

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