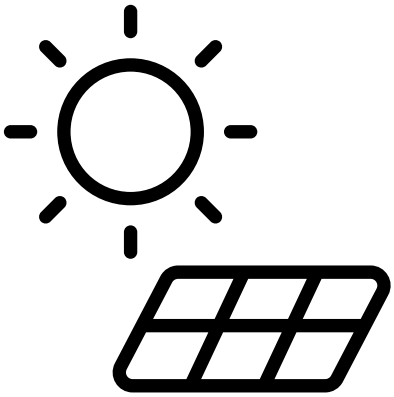
SOLAR POWER

What is solar power?

Solar power is generated when energy from the sun (sunlight) is converted into electricity or used to heat air, water, or other fluids.



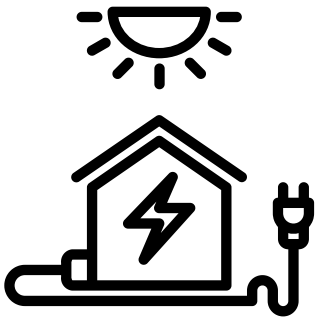
A typical household solar installation in 2021 includes around 18 panels, with a total rated generating capacity of around 7 kilowatts (kW) and typically costing around $7,000 including installation. Actual generation fluctuates with solar conditions, usually generating much less power than its rated capacity due to sun angle, clouds etc.

Should we consider a battery?

Solar panels do not generate at the time of major club energy consumption (court lighting after sunset). During the day most of their output will be fed into the electricity grid, helping to power neighbouring properties, earning a feed-in tariff (FiT) and reducing the amount of centralised electricity generation required to run at that time. Feed-in tariffs vary from year to year – modelling assumes a value of 6c per kWh.

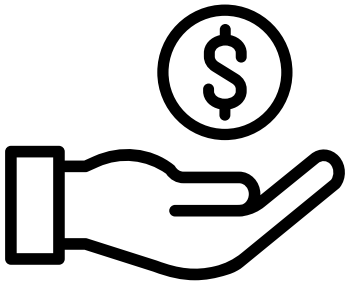
Batteries are an optional add-on to a solar system. Many products exist on the market but the best-known is the Tesla Powerwall 2. This battery can store 13.5 kWh of energy and costs around $16,000 including installation.

Benefits of solar power



Generation of clean, renewable energy

Reduction of carbon emissions

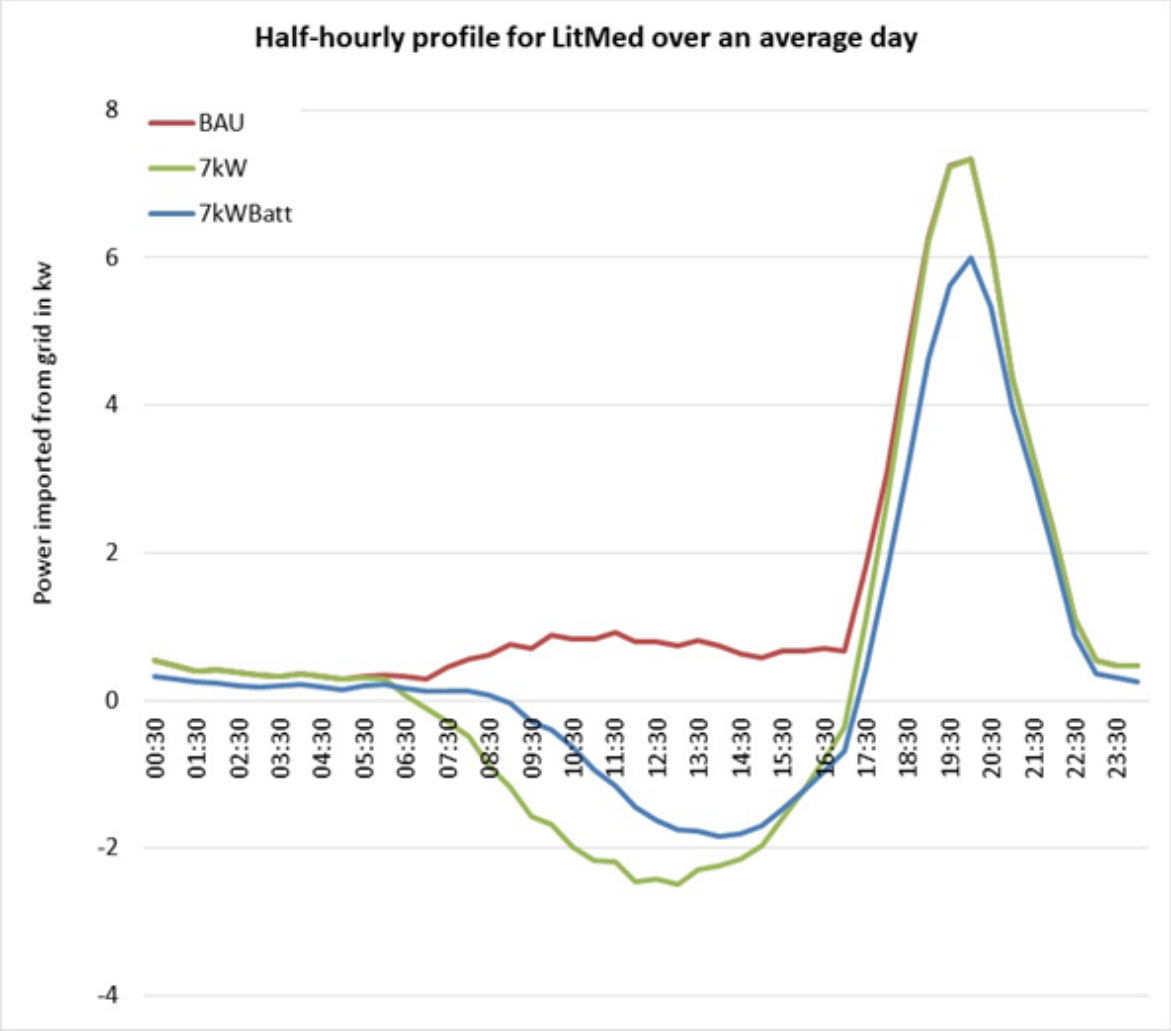


Save on electricity bills & maintenance costs

Power consumption comparisons

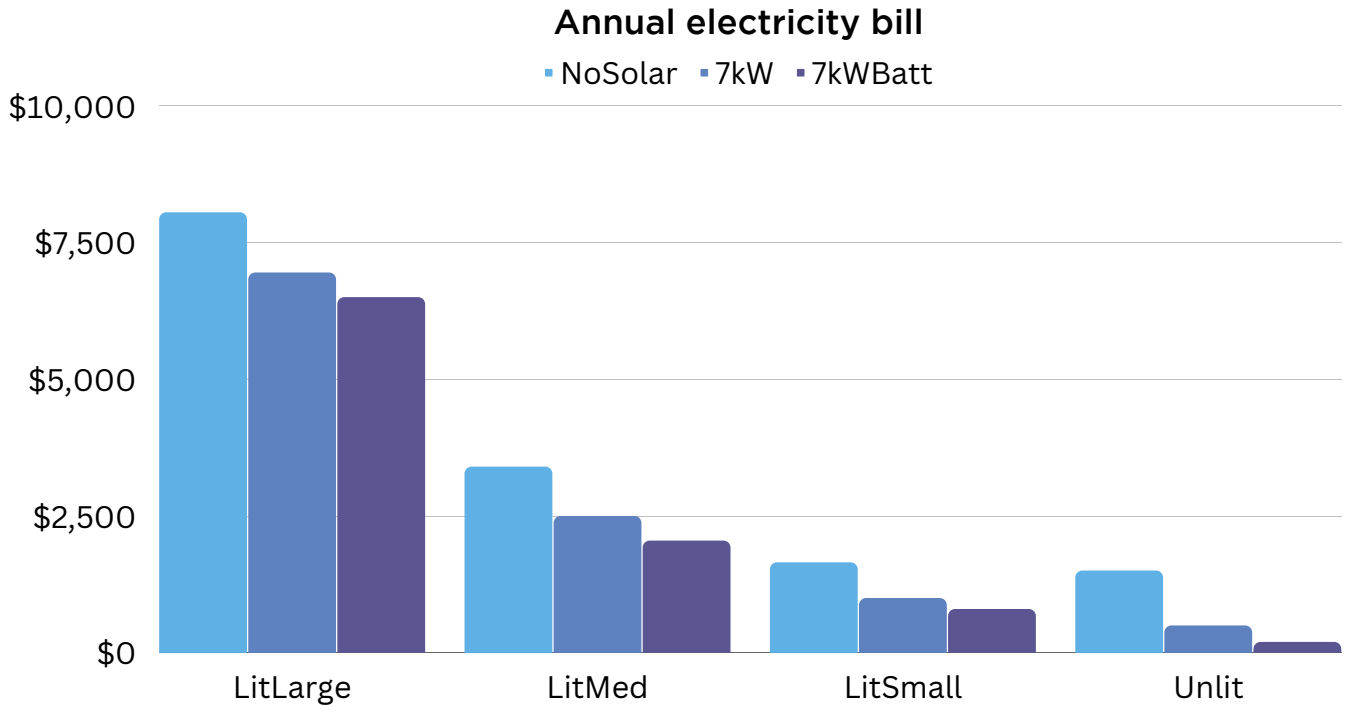
The following chart shows power consumption through the day, averaged over the entire year for a single club in the medium-sized lit cohort with the business-as-usual mix of LED and non-LED lights. The red line has no solar, green line has solar with a rated capacity of 7 kilowatts, and the blue line has solar plus a battery with a rated energy storage capacity of 13.5 kilowatt-hours.

Without solar, the club's consumption follows the path familiar from previous sections. With solar, the club is exporting electricity to the grid during daylight hours, shown in the chart as negative values. With solar and a battery, exports are reduced until late afternoon, when the battery is fully charged. Evening imports from the grid are reduced by battery discharge, but still show a very prominent demand peak. The battery is insufficient to cover evening lights.



Solar economics

Installing solar delivers a useful reduction to club electricity bills. The medium-sized lit club with a business-as-usual mix of court lights saves $940 per year, or $1,380 if a battery is added too.



Data explanation

Data and information used is from the Australian Energy Foundations' Chip the Charge report, published in May 2022 and funded by Tennis Victoria.

Cohort Name	Description	No. Lit Courts	Num Clubs
UnliT	Medium club, no lights.	0	202
LitSmall	Small club with lights.	2	150
LitMed	Medium club with lights.	5	258
LitLarge	Large club with lights	10	150

Solar Pitch

Use the template below and any information from the document above to support your pitch for Solar!

Dear [RECIPIENT],

The installation of solar panels at [AFFILIATE VENUE] addresses many of our stakeholder organisations' policies and strategies as well as those of Tennis Victoria and the Victorian State Government.

Tennis Victoria's Strategic Plan through 2024 details a purpose to create safe, inclusive and thriving Victorian tennis communities, enabling more people to play more often. A strategic focus is to optimise the use, management and access to facilities, thereby creating a sustainable future for venues.

Tennis Victoria has identified environmental sustainability, specifically, the need to reduce energy usage, as a key focus in the 2024 Strategy. Tennis Victoria, in conjunction with the Australian Energy Foundation (AEF), recently researched the impact of energy usage by community tennis facilities across the State. The study found that community tennis venues currently spend an estimated $2.6M on grid electricity annually and emit an estimated 7.48M tonnes of CO2 annually (AEF, 2022).

The Victorian Government's Climate Change Strategy details a commitment to net-zero emissions by 2050, and a pledge to accelerate Victoria's transition to a clean and efficient energy future.

[INSERT SPECIFIC COUNCIL STRATEGY/PLAN BELOW, EXAMPLE GIVEN]
Brimbank City Council, in their Brimbank Climate Emergency Plan, has committed to shifting to 100% renewable energy for council operations by 2030, and the entire Brimbank municipality by 2040 as part of their five actions to tackle the climate emergency.

The research completed by Tennis Victoria and the Australian Energy Foundation , examined a cross-section of venues across the state, with varied numbers of courts and club house sizes.

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According to this research, the conversion of all existing non-LED lighting at tennis venues across Victoria would result in an annual:

- 30%, or 2280 tonnes (equivalent volume of gas in 388 large hot air balloons) reduction in CO2 emissions
- 45% reduction in peak electricity demand
- Savings of $1,424,375 in energy and maintenance to community venues

In addition, if solar panels were installed across all tennis venues in Victoria, this would achieve an annual:

- 69%, or 5,220 tonne (776 large hot air balloon) reduction in CO2 emissions
- Savings to community tennis clubs of over $690,000.

With a full LED upgrade and an installation of 18 solar panels per club, it would be possible for Tennis Victoria's affiliated venues to achieve net-zero emissions from electricity.

Although we are only one [CLUB/VENUE], through funding of solar panels, [AFFILATE NAME] can contribute to the reduction of greenhouse gases, and support government initiatives to achieve milestones required to alleviate the current climate emergency. We are already taking action to support our environment through the following initiatives:

[add/remove from list]:

- **Game On Recycling - collecting and recycle tennis balls**
- **Tread Lightly – national recycling initative taking unwanted sport and active lifestyle footwear and responsibly recycles it here in Australia to give it new life**
- **Upparel – uniform and clothing recycling**
- **Appliance review – energy efficient equipment in use at the venue including air conditioning, dishwasher**
- **All electric venue – no gas in use at the venue**

Installation of solar panels will also led to reduction of costs for venue operations. This cost reduction can be [ADJUST TO VENUE PLANS] passed on to community and club members through lower cost membership or court hire. Alternatively, funds can be redirected to more community based activations such as [ADJUST TO VENUE ASPIATIONS] running more events or competition, hiring a part administrator to reduce volunteer burden or engage with education opportunities across mental health or diversity and inclusion programs.

[CLUB/CENTRE SIGN OFF]