

How to maximise the benefit of solar power

The main financial benefit for customers with solar is the savings from using the electricity they generate in their home or business – rather than paying retail electricity rates. Changing the pattern of electricity usage is key to maximising savings.

Solar customers should run washing machines, dishwashers, water heaters and pool pumps during the day when the sun is shining. If they are not home during the day, they can set a timer to have these appliances start at certain times during the day or switch them on just before they leave the house.

The most energy-intensive household appliances are commonly water heaters, pool pumps and electric heaters. Table 1 below shows Sustainability Victoria’s estimates of the annual energy costs of running an electric water heater, a pool pump, electric in-slab heater, and an electric heater.

Table 1 – Annual energy cost estimates per appliance

Appliance	Energy star rating	Annual energy cost
Electric storage water heater	N/A	\$1,115 ¹
Pool pump	2 star	\$512 ²
Electric in-slab floor heating	N/A	\$4,280 ³
Electric fixed room heater	N/A	\$1,605 ⁴

¹ Sustainability Victoria based estimate on a 4-person Melbourne household using an average of 150 litres per day at the peak tariff rate of 31.9 cents per kWh; tariff does not include any on-time discount, annual supply charges or cylinder use rental fee. For more information <https://www.sustainability.vic.gov.au/You-and-your-home/Save-energy/Water-heating/Hot-water-running-costs>

² Sustainability Victoria based estimates on a typical Melbourne peak tariff rate of 31.9 cents per kWh and does not include any pay-on-time discounts, pumping 50,000 litres of water per day. For more information <https://www.sustainability.vic.gov.au/You-and-your-home/Save-energy/Pool-heating-and-pumps>

³ Sustainability Victoria based estimates on a pre-2005 large 220m² Melbourne house with a 2-star rating, heating 20° all day (9am-10pm weekends, 6am-9am weekdays and 5pm-11pm weekdays), based on an electricity tariff of 27.51 cents per kWh peak and 19.55 cents per kWh (off peak). For more information <https://www.sustainability.vic.gov.au/You-and-your-home/Save-energy/Heating/Heating-running-costs>

⁴ Sustainability Victoria based estimates on a large 60m² room, in a pre-2005 2-star Melbourne house, heating 20° all day (9am-10pm weekends, 6am-9am weekdays and 5pm-11pm weekdays), based on an electricity tariff of 27.51 cents per kWh peak and 19.55 cents per kWh (off peak). For more information <https://www.sustainability.vic.gov.au/You-and-your-home/Save-energy/Heating/Heating-running-costs>

Sustainability Victoria estimates that the annual energy costs for running a pool pump ranges from \$512 (2 stars rating) to \$108 (9 stars rating) during peak hours (Table 2).⁵

Table 2 – Estimate of annual energy cost for running a pool pump, by Sustainability Victoria

Star rating of the pool pump	Annual energy cost (Peak tariff)
2 stars	\$512
4 stars	\$331
6 stars	\$212
8 stars	\$136
9 stars	\$108

The above range of annual energy costs already captures some savings from running the pool pump during daytime when the sun is shining. But further savings can be realised by using a timer to run a pool pump in order to take advantage of more solar hours when the solar customer is not at home. The same is true for running a washing machine, a dishwasher and a water heater.

Sustainability Victoria notes that a pool pump could be responsible for 20–30 per cent of a customer’s energy bill.⁶ For illustration purposes we estimate that running a 1,100 watts pool pump during day time could cost about \$535 a year, on average.⁷ If a timer is used to take advantage of more solar hours, pool pump running costs could fall by \$178 a year.⁸

We acknowledge that energy cost savings will depend on the size and energy rating of the pool pump, the number of operating hours during summer and non-summer months, retail electricity rates and feed-in tariff rates and the size and orientation of the solar panels.

⁵ Sustainability Victoria’s assumptions: based on pumping 50,000 litres of water per day. Calculations assume an electricity tariff of 31.9 cents per kWh if the pump is run on the general (or peak) tariff, and 20.9 cents per kWh if run on an off-peak tariff. Based on typical Melbourne tariff, and does not include any pay-on-time discount. Source: Sustainability Victoria, Pool heating and pumps, accessed 27 October 2020, <https://www.sustainability.vic.gov.au/You-and-your-home/Save-energy/Pool-heating-and-pumps>.

⁶ Sustainability Victoria, Pool heating and pumps, accessed 11 November 2020, <https://www.sustainability.vic.gov.au/You-and-your-home/Save-energy/Pool-heating-and-pumps>.

⁷ Assumptions used: 1,100 watts pool pump (equivalent to 1.1 kW); 12 hours running time per day (3 hours during solar hours and 9 hours during non-solar hours); pool pump will be run for half a year (182 days); AGL United Energy Victorian Default Offer rates of 29.7 cents/kWh. [$1.1 \times 9 \times 182 \times 0.297 = \535.10].

⁸ Assumptions used: 1,100 watts pool pump (equivalent to 1.1 kW); 12 hours running time per day (6 hours during solar hours and 6 hours during non-solar hours); pool pump will be run for half a year (182 days); AGL United Energy Victorian Default Offer rates of 29.7 cents/kWh. [$\$535.10 - (1.1 \times 6 \times 182 \times 0.297) = \178.40]. The use of a timer has reduced the amount of electricity purchased from the grid.

Energy efficient products, use of a timer and changing your pattern of usage means using more of your solar generated electricity rather than importing from the grid at higher rates, saving you money.

The [Victorian Energy Upgrades](#) program encourages energy efficient upgrades or improvements for many energy-intensive appliances, including electric water heaters, pool pumps and space heating and cooling.⁹

⁹ Victorian Energy Upgrades, Helping your household to save on energy costs, accessed 30 October 2020, https://www.victorianenergysaver.vic.gov.au/_data/assets/pdf_file/0022/332194/VEU-Residential.pdf.