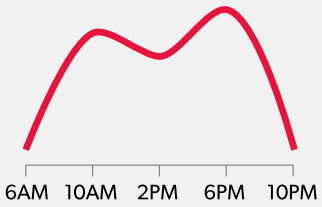
NSW Home Solar Battery Guide

Practical example: Wei

Wei wants to rely less on the grid and provide grid support.

Profile

Name: Wei
Location: Suburban
House type: 5 bedroom
Occupants: 3 adults, 3 children
Tariff: Time of use
Existing solar: 5 kW
Daily electricity usage profile:



Daily average: 25 kWh
Annual total: 9,125 kWh

Overview

Wei is upset by his experience with power companies. He wants to take control of the situation and go offgrid, that is, completely disconnect from the electricity network by enlarging his rooftop solar system and installing a battery for evening and night time use.

Wei discovered how expensive it is to install an offgrid system that is reliable, including for long periods of bad weather. As much as this was a strong motivation, an investment of $50,000 was too expensive.

While talking to a battery installer Wei learned that some retailers will pay their customers to discharge their battery upon request. Wei also learned that a special device would be required to make his battery controllable by a third-party. This would mean staying grid-connected, purchasing a medium-size battery with additional solar and making some extra savings from his solar feed-in tariff and energy trading.

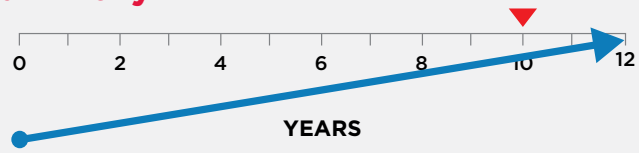
What did Wei decide?

Solar: 5 kW additional solar, mainly for increased power during the morning and evening.

Battery: 13.5 kWh battery that can be controlled by the electricity retailer to provide grid support.

Energy trading: Wei allows his electricity retailer to use his battery during peak price events to earn a little bonus cash.

Summary



Payback period: 12 years

Battery warranty period: 10 years

System cost: $18,500
Annual savings: $1,500
Solar exported: 48%
Self-sufficiency: 77%

Assumptions and notes:

- Calculations are based on the new investment in the additional solar system and battery.
- Existing electricity supply is three-phase, so there are no issues or extra costs going above 5 kW of inverter capacity.
- Payback on the battery component of the system only was found to be 16 years.
- Revenue from local energy-trading systems can be unpredictable. Calculation assumes $10 income per month.
- Self-sufficiency refers to the percentage of the total energy consumption supplied either directly by the homeowner's solar, or by stored solar supplied by the solar battery.

Takeaways

1. While going offgrid isn't economic in most situations, you can stay connected and become mostly self-sufficient.
2. In NSW in 2020, allowing third-party battery control provides only a small benefit to battery owners, and is only available from some retailers.

For more information, download the NSW Home Solar Battery Guide: energysaver.nsw.gov.au/solar-battery-systems