

REINSTATING A PV SOLAR SYSTEM AT OUR CLIENT'S SITE

OVERVIEW

Acorn's electrical service department was recently appointed to maintain and restore a photovoltaic (PV) solar system at a mixed-use property on this site, comprising of retail spaces, offices, and six residential flats. Although each flat was allocated 2-3 solar panels, the entire system had been non-operational for over five years. With the previous contractor unable to provide a viable solution, our team was brought in to assess, diagnose, and bring the system back to full functionality. Ultimately helping residents reduce their energy costs and improve sustainability.

THE PROBLEM

System Overview

- 6 residential flats
- 20 PV solar panels (each rated at 250W pMax)
- Enphase microinverter system

Challenges Identified

- None of the microinverters were operational; all 20 were in error states.
- No remote diagnostics or monitoring capability was available.

Root Cause

Our investigation revealed that the system had been installed without the necessary Enphase internet gateways – a critical component that enables diagnostics, firmware updates, and remote troubleshooting. This oversight meant the system could not be monitored, maintained, or updated, leading to long-term failure.

KEY TAKEAWAYS

Root-Cause Resolution:

- We identified and addressed a fundamental flaw in the original installation – without costly replacements.

Client-Centric Approach:

- A phased, cost-effective strategy minimized disruption and demonstrated value from the outset.

Sustainable Outcomes:

- Reactivating the PV system supports energy efficiency and reduces long-term electricity costs for residents.

OUR SOLUTION

Investigation & Diagnosis

- Electrical services dept conducted a comprehensive review of the Enphase system.
- Identified the absence of internet gateways as a key issue.
- Developed a phased reinstatement strategy, starting with a single flat to validate the solution.

Implementation

- Installed a new dedicated power spur for the Enphase gateway
- Connected CT clamps to both the production meter and consumer unit
- Configured the gateway and linked it to the flat's Wi-Fi
- Successfully established communications with microinverters and resolved error states
- Cleaned all solar panels to restore optimal efficiency

Results

- The solar system is now fully operational.
- Peak production of up to 2.5 kWh per day, even during winter (January).
- Remote monitoring enabled, allowing for proactive performance management.
- One flat achieved a 3% reduction in total energy consumption post-restoration, with greater efficiency gains anticipated.
- Based on successful outcomes, the client requested full reinstatement across the remaining flats.