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MY CONTRIBUTION
SOLAR PV | BATTERY STORAGE | EV CHARGING

# Case Study

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|---|---|
| Client: | Residential |
| Location: | Pembrokeshire, West Wales |
| Installation: | 6 x JA Solar 365W<br>2.2Kw SolarEdge HD Wave<br>Individually optimised |
| Electric Vehicle Charger: | Myenergi Zappi |
| Battery: | Tesla Powerwall Gateway2<br>2 x Tesla Powewall batteries |

**Customer profile**

A beautiful stone cottage in a rural location. Existing 4kWp of solar PV with a Solar Edge inverter installed in 2013 and benefiting from a feed-in-tariff.
The customer has recently switched one of their cars to Electric.
A technologically sophisticated customer with a keen interest in the energy flows of their home and keen to build on their existing base of renewable energy.

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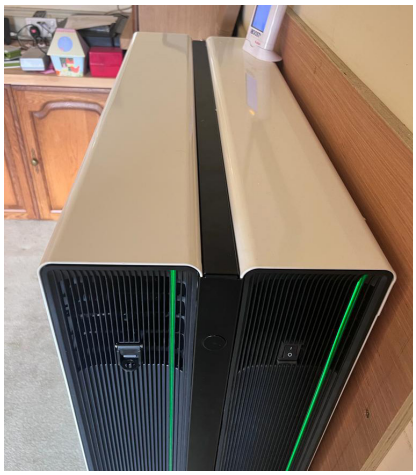
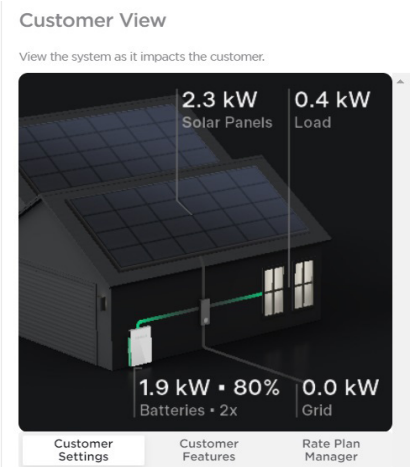


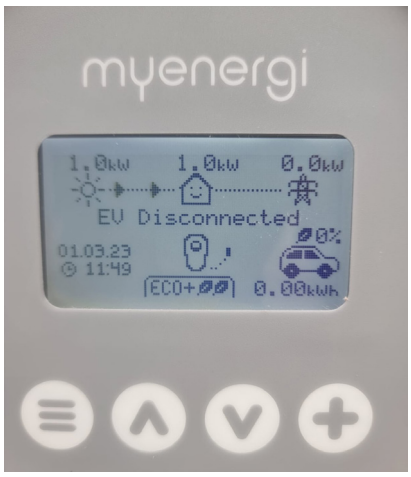
## Customer requirements

More solar PV, using the main roof of the cottage which has been refurbished in the last year. Solar must use SolarEdge inverter which can then combine with the existing solar in terms of monitoring without impacting the Feed-in-tariff payments in any way.
Battery storage both extends self-consumption into the evenings during the summer and enables low-cost battery charging at night to reduce daytime consumption in the winter.
An EV charger which will divert solar power that would otherwise be exported to charge the car during the day and to charge during low tariff periods at night.

## Challenges

Running cables around the stone cottage is challenging in terms of matching the aesthetic and as the cottage has grown with extensions the installation is split between different distribution boards.

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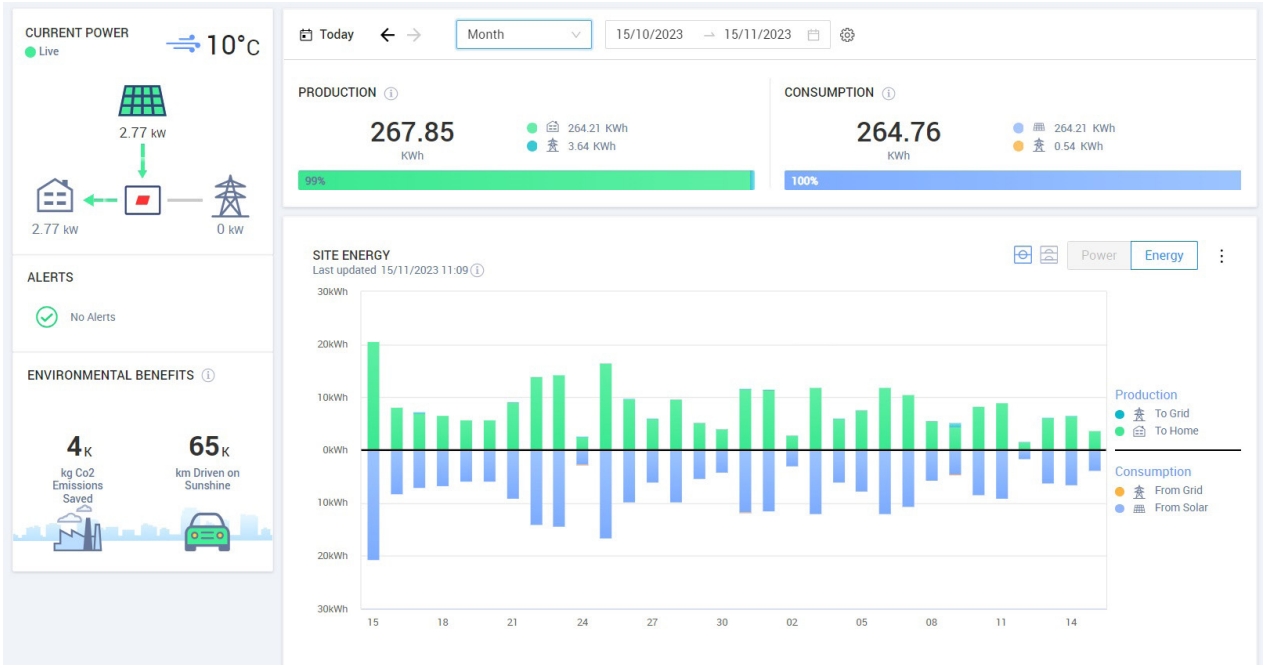


The customer having done lots of the refurbishment work in the cottage volunteered to run communication cables around the property where required using his previous experience to save time and hide communication cables in cavities.

## Solution offered

The solar PV was installed using high-efficiency JA solar panels and a Solar Edge inverter with panel-level optimization. The new inverter became a slave to the existing inverter which was then configured to monitor the grid and constrain total output when required to meet the conditions set by the DNO (Distribution Network Operator).

A Zappi car charger was chosen for its great reliability and functionality with the ability to set charging timers and to divert solar power that would otherwise be exported to charge the car. The Tesla Powerwall was chosen as the battery storage solution, with a gateway that allows the switchover to back up power in the event of a power cut. The clear data supplied by the Tesla app enabled the customer to see immediately the value of the battery and the backup power benefit proved invaluable. A second battery was added shortly afterward to provide more resilience during a power cut and to increase electricity bill savings.
The customer has been able to see the detailed energy flows of his home and car and to create short, medium, and long-term plans to facilitate their journey to energy independence.