TITAN ECO
Manufacturers & Distributors of SolaSkirt

HATCHPEN
CAMBRIDGESHIRE

INTRODUCTION

Hatchpen is a large private residence with a 3-phase electricity supply and annual consumption of around 60,000 kWh. The property owners sought to reduce high energy costs and reliance on the grid by generating and storing their own renewable electricity.

It was determined that the best solution would be a ground-mounted solar installation in an adjoining field, using available space. The system was designed to maximise efficiency, incorporating 9 × 5 kWh batteries for optimal storage capacity and flexible energy management.

OUTCOMES

The 41 kWp system generates around 40,000 kWh of clean electricity each year, meeting a significant share of the property's energy demand and reducing reliance on the grid. Even during winter, bills fell by 36 percent without off-peak charging enabled.

With 45 kWh of battery storage, the system enables greater use of self-generated power, supports off-peak charging and provides resilience during grid outages. The installation is projected to save over £13,000 annually, with an estimated payback period of around four years.

ANNUAL OUTPUT
39,850
kWh CLEAN ENERGY

ANNUAL REDUCTION
20
TONNES OF CO_2

ANNUAL SAVINGS
£16,200
ELECTRICITY & EXPORT

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IMPLEMENTATION

- **Assessment:** The site layout, electrical infrastructure and connection route were reviewed to finalise positioning, cable runs and system integration.
- **Mounting system:** Sleepers were laid and levelled to create a stable base for the structure. A-frames were then securely fixed to the sleepers.
- **Solar panels:** Each of the 100 panels were mounted and secured on the A-frames.
- **Inverters & batteries:** 3 × Huawei hybrid inverters and 9 × Luna batteries were installed within the house and integrated with the property's 3-phase supply.
- **Testing & commissioning:** Full electrical testing, configuration and DNO-approved grid connection were completed, with live monitoring activated for real-time system visibility.

SYSTEM COMPONENTS

- **Mounting system:** Ground-mounted A-frame structure fixed to sleepers, providing strength, longevity and stability.
- **Solar panels:** 100 × Canadian Solar 410 W panels (41 kWp) – built to withstand challenging environmental conditions (snow, wind, temperature extremes) and minimise degradation over time.
- **Inverters:** 3 × Huawei 10 kW hybrid inverters – offering smart monitoring, built-in safety features for reliable performance, and the capability to switch operating modes (e.g. maximise self-consumption) for versatility as the homeowner's energy usage or tariff structure evolves.
- **Battery storage:** 9 × Luna 5 kWh (45 kWh) – providing high-capacity, flexible storage that increases self-consumption, supports off-peak charging and delivers long-term energy resilience with proven safety and performance assurance.

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