



CASE STUDY

Renewable Energy System for a large Home in Aberdovey

CASE STUDY DELIVERED BY



Overview



Project Overview

A client purchasing a large home on the Welsh coast sought a renewable heating, hot water, and electrical solution. They discovered MJS Energy through the Heat Geek platform, where we are recognized as Heat Geek Elite. Due to the building's 230V supply constraints, a strategic design approach was necessary to maximize efficiency while utilizing available power.

Challenges

- The property had only a 230V electrical supply, limiting system options.
- The client required a renewable energy solution to cover all heating, hot water, and electricity needs.
- The system needed to maintain optimal efficiency while providing sufficient power for a large coastal home.

Solution: Heliotherm Airforce Split System & Solar PV with Battery Storage

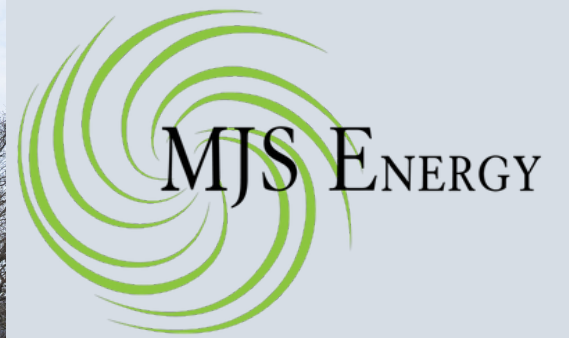
MJS Energy designed and implemented a tailored energy solution that included:

1. Heating and Hot Water System

- Heat Pump: Heliotherm Airforce Split System, the largest 230V system available, capable of producing up to 23kW.
- Low-Temperature Heating: A new internal heating system designed with a maximum flow temperature of 45°C.

2. Solar PV and Battery Storage

- PV System: 12kW standalone solar PV array.
- Battery Storage: 40kWh total storage capacity to maximize self-sufficiency.



Key Benefits

- **Optimized Power Usage:** The system was designed to operate within the 230V supply limitations while still meeting the client's energy needs.
- **Lower Energy Costs:** By utilizing off-peak electricity tariffs, the system can operate for as little as 1.5 pence per kilowatt-hour, compared to fossil fuel alternatives costing 8-10 pence per kilowatt-hour.
- **Sustainable Energy Generation:** The solar PV array generates clean energy, reducing reliance on grid electricity.
- **Reliable Heating & Hot Water:** The combination of a powerful heat pump and energy storage ensures comfort year-round.

Conclusion

MJS Energy successfully provided a comprehensive renewable energy solution for the client's coastal home, balancing energy efficiency with power supply constraints. This project demonstrates the potential for high-performance renewable systems even in properties with electrical limitations, ensuring cost-effective and sustainable living.

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