

Case study

Lithium-powered Off-grid site

Bourges, France



The challenge

Situated 10 km from the utility grid in a rural area next to Bourges, France, these two yurts needed a year-round reliable and cost-effective off-grid energy system. The owner was looking for a flexible system where it would be easy to scale up the battery capacity



Perma-Batteries

if needed. Also, in order to avoid partial shading from the surrounding trees and vegetation, the solar modules would have to be installed relatively far away from the battery and electronics.

Why STUDER

Since our inception, we have chosen to work with Studer equipment, as they are the only inverters that guarantee a perfect management of the storage systems we use, whether it's Li-Ion systems or unconventional chemistry such as Nickel-Iron that requires a specific voltage range. Their unrivalled robustness enables us to provide our customers with a reliable and long-lasting system. What's more, the Xcom-LAN gives us a perfect real-time monitoring and remote control of the system for after-sales support or troubleshooting if needed.

System components

- The system contains the following components:
- 10 x Q-CELLS monocrystalline Q-Peak BFR 4.1 305W
- 1 x STUDER inverter/charger Xtender XTM-4000-48V
- 1 x STUDER MPPT Solar Charge Controller VarioString VS-70
- 1 x STUDER Xcom-LAN communication device
- 1 x STUDER Xcom-CAN multi-protocol communication module
- 3 x LiFePO4 PYLONTECH US2000B

The Solution

Pylontech US2000B lithium batteries were selected for their numerous advantages: delivery of up to 5kW of power per module, having a long cycle life at 90% DOD, being safe to operate (LFP chemistry), and can be upgraded later if extra capacity is needed. Studer Innotec's high-voltage VS-70 MPPT solar charge controller facilitates string wiring and has a very high efficiency, overcoming the voltage drop that conventional MPPT controllers have. The XTM-4000-48V perfectly manages the batteries' charging cycles using a multiprotocol communication module Xcom-CAN. Supervision and monitoring is ensured by an Xcom-LAN.

Project outcome

The Studer/Pylontech combination provides year-round autonomy to the end-user and drastically reduces his dependency on a generator. The high quality of the components brings peace of mind to the customer, ensuring that his energetic needs are backed by a dependable and durable system that can be extended if required.

The Company

Perma-Batteries is a solar engineering firm specialized in providing turn-key stand-alone energetic solutions based on non-conventional, high-performance storage systems. As the first french company to bring Nickel-Iron cells to the market, they have a unique and diversified range of batteries (Pylontech, ENCELL, Sodium-Ion) to suit any application (off-grid, ESS).

For more information please contact:

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