

## Case Study

# Capanna Gnifetti, off-grid system with diesel generator backup Mont Rosa, Italy



## The Challenge

The Capanna Gnifetti mountain hut, is situated at 3647m above sea level in the Italian Alps close to the Monte Rosa massif. It offers 176 beds, community room, emergency room, shared bathrooms, showers and electric lighting. With a PV system of 2kW their backup diesel generator of 40 kVA was working most of the time. The mountain hut is easiest reached by helicopter which is both expensive and time-consuming. It is therefore of utmost importance that the installer brings all the necessary material, even a missing nut would delay the installation.



FGS Energie Alternative

## Why Studer

For remote installations it is clever to choose the most reliable products. Systems with Studer products are very stable under all conditions (weather or miscalculations of loads by the user), quick to set up and has a good peak power capacity.

The installation of 60 PV modules was made easier using the Studer VarioString with its two high voltage input MPPT and with less cables to install on site.

The possibility to upgrade the system with more inverter or chargers for future use is also a good point for the customer. March – September 2018.

## System components

The system contains the following components:

- 250Wp WARIS SOLAR Polycrystalline
- 24 x MIDAC SPA - OPzV 800Ah C10
- 3 x STUDER XTH 6000-48 inverter / chargers
- 2 x STUDER VS-120 VarioString MPPT
- Custom FGS Energie Alternative "FGS STORAGE" mounting plates. System is built inside a container.
- STUDER RCC-02 control system
- STUDER Xcom-LAN communication Set
- STUDER BSP-1200 Battery Status Processor

## The Company

FGS Energie Alternative has been in the off-grid market since 1996. Initially they worked in northern Italy with residential off-grid installations in the mountains. Nowadays, they also deliver bigger projects around the world, always keeping the focus on off-grid installations.

Passionate about off-grid systems, they develop renewable energy systems with different power sources, such as solar, micro-hydro and wind, and enjoy the happiness of their customers when they realize that they are really energy independent.

They provide assistance with dimensioning of electrical projects and training, even when customers live far away and they need to collaborate with local installers.

## The Solution

The actual energy needs of the mountain hut was thoroughly calculated and a 15kW off-grid system was installed. It is a three-phase system with one inverter per phase, and two MPPT regulators with strings of 15 modules each. The system can be monitored remotely thanks to the Xcom-LAN.

The installers delivered a complete kit, including batteries, modules, inverters and regulators, all already cabled and configured in their lab.

## Project outcome

The C.A.I (Club Alpino Italiano), owners of the Capanna Gnifetti mountain hut, has currently a renewable energy system better adapted to its size and energy needs. They have drastically reduced the use of the diesel generator, consuming mainly green energy. The new system is also more user friendly as it is programmed to automatically perform certain actions making it easier to use the green energy.

## For more information please contact:

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