Case Study

Off-grid system for trout farm

Troodos Mountains, Cyprus

The Challenge

There is not much freshwater available on Cyprus. For this reason most freshwater fish farms are small-scale and located in the mountains far away from the utility grid, where they use springs and rivers as water intake. Initially this facility was completely powered by diesel. However, as the need for power grew steadily, it became too expensive to run the farm only on diesel and the fish farmer started to look for alternative energy solutions.




Pals

Why Studer

It was the reliability of Studer Innotec's products, knowing that they would do the job without problems or malfunctioning, that made them the natural choice for this remote installation.

System components

Solar modules: SRM 275
Batteries: 2 x 1200Ah pzv, 48 V
Inverter/Chagers: 3 x STUDER Xtender XTH 6000-48
Solar charge controllers: 2 x STUDER VarioString VS-120, 2 x VS-70
Remote communication: RCC-02
Other: BTS, BSP, 6x hydro turbines

The Solution

A trout farm needs to run machines, pumps and industrial refrigerators for its operation. Such loads necessitate electric power in three-phase. Situated close to a small stream, this fish farm can take advantage of both solar and hydraulic power in its new energy system.

The resulting off-grid system in three-phase contains a 48V battery bank of 2400ah capacity that will be charged either by 11.5kW solar panels equipped with two VarioString MPPT solar charge controllers VS-120. Or by three hydro generators "Power spout" that produces clean renewable energy from naturally flowing water. The two diesel generators of 80kVA and 40kVA are currently used as backup for the new system.

This installation took nine days to complete by a four member crew. During the set-up they had to rely completely on renewable power.

Project outcome

The three-phase 240VAC system has been working perfectly since its installation providing the trout farm and its staff with enough energy to successfully operate the facility with machines and pumps. After harvest, the fish is immediately stored in large refrigerators at -38℃ keeping them fresh until the transport to the distribution channels.

There are plans to extend the system by adding three more hydro turbines to provide even further power.

The Company

Pals has been active in the field of energy solutions since 1974. Their know-how in providing reliable solutions tailored to customers' needs and full technical support has given Pals a leading position in the field of off-grid electrification, with close and long-term partnerships with companies from Europe and Asia.

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