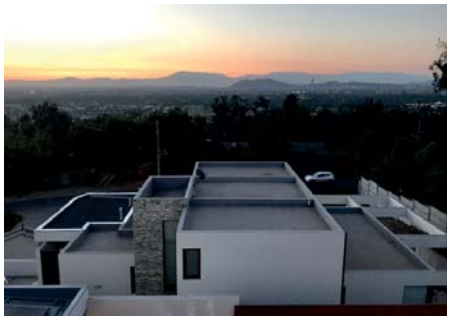
Case study

SOLAR PRIORITY IN HOMES

Chili

The challenge

Chile is a seismic country and there are dangers that can put the electricity supply at risk, be it floods, volcanic eruptions, fires, or, for example, the snowstorm that hit Santiago in July 2017 leaving 200,000 people without electricity for several days.
Chile's law of distributed generation (law 20.571) both allows the connection of self-consumption photovoltaic systems and the sale of energy surpluses. However as the tariffs are approximately 60% of the purchase rate it is economically interesting to increase a household's self-consumption, reducing the electricity bills as well as having autonomous supply in the event of power outages.

STC Sunbelt SpA

All these requirements can be perfectly met by a Studer system with solar priority. Take this 380 m2 private villa with electrical appliances such as air conditioning, a swimming pool and an electric oven and an annual electricity consumption of approximately 8,000 kWh as an example.

Why STUDER

STUDER enables the implementation of special applications thanks to the wide range of programming options. Additionally, with the Xcom-LAN, the user can analyse the behaviour of their system from anywhere in the world and make adjustments if necessary. Together with the SIMPLIPHI batteries that allow 10 000 cycles of useful life and the programmed loading and unloading framework in STUDER equipment, especially for this type of LFP batteries, the installed solution guarantees a reliable solar power supply with an expectation of at least 20 years of useful life.

System components

The components that make up the system are:
16 x photovoltaic modules with 260Wp each
1 x VS-70 STUDER charge controller
1 x XTM 4000-48 STUDER inverter
1 x RCC-02 control system
1 x Xcom-LAN STUDER communication device
1 x BTS-01 STUDER battery temperature sensor
1 x SBM-02 STUDER battery monitor
1 x SBM-PS-02 STUDER voltage adapter
2 x lithium iron phosphate batteries SIMPLIPHI 3.4, 48V, at 3.4kWh capacity each

The solution

The house has a grid connection with single-phase 220V, 50Hz and 40A. The XTM 4000-48 acts as the heart of the solar system, programmed with solar priority and active Smart-Boost. The house can thus take full advantage of solar generation for self-consumption as it not only supplies itself with the solar electricity generated at the time, but also uses the batteries to store the energy and deliver it to the house. The battery is always kept at least 30% charged to ensure reliable supply. The XTM only supplements the supply with electricity from the grid in the event of very high consumption.

It is estimated that thanks to the implemented system, the house will be able to reduce its electric bill by more than 80%, as well as having the security of being able to operate continuously and without limits should the electric grid fail.

Project outcome

In its first months of operation, the system was already able to demonstrate its excellent performance and the electricity bill was reduced with more than 50% despite it being winter.

The Company

STC Sunbelt SpA

STC Sunbelt SpA has been operating in Chile for five years. Among its clients are Chilean companies of all sizes, primarily in the fields of agriculture, tourism, construction and finance, as well as multinational companies such as Enel Green Power, Enel Distribución and Sunedison. Bodies such as the Ministry of Energy and the Ministry of Housing and Urbanism can also be found in our client portfolio.

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