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Project department

More information →

Success story

Photovoltaic energy system in industry

PROJECT
Turnkey photovoltaic system 95.04 kWp / 84 kW self-consumption zero injection on flat roof

SECTOR
Industrial

CLIENT
ZURC
INSTRUMENTACION INDUSTRIAL ZURC S.A.

Information of interest
PV installed power: 95.04 kWp

Most significant results

SAVINGS
€12,416 / year

PAYBACK PERIOD
9 years

Reduction in CO_2 emissions
35 T per year

TARGET ACHIEVED
Optimising the energy consumption and reducing the electricity bill

Information of interest

- **PV installed power:** 95.04 kWp
- **PV module:** 528 units, model XZST-180 W / 24 V, 180 Wp, monocrystalline silicon.
- **Nominal power:** 84 kVA (6 inverters manufactured by Circutor 4 kVA and 3 Fronius 20 kVA).
- **Type of installation:** Flat roof, PV generator secured by ballast, no drill holes to ensure waterproofing.
- **Structure:** Hot-dip galvanised steel base support, aluminium beams.
- **SCADA monitoring system:**
  - › Operating data (string monitoring, PV generation, intake of the electrical installation, consumption).
  - › Environmental parameters (radiation, ambient temperature and PV module).

Most significant results / Energy studies

- **Savings:** €12,416 / year
- **Investment payback period:** 9 years
- **Reduction in CO_2 emissions:** 35 T per year
- **IRR:** 11,3%

Initial situation

The project covers the supply and installation of all of the materials of a photovoltaic energy system, connected to the low voltage grid in self-consumption mode and with no injection into the grid. Therefore, it will be certified in accordance with diagram 8 of ITC-40 of the low voltage regulations (REBT), without being covered by the Special Regime for Electricity Production, under current legislation (2015).

This photovoltaic system will be based on the concept of zero injection into the grid.

This is achieved through CDP-0 Dynamic Power Control, which is a device developed by **Circutor** and which will adapt the operation of the inverters to the consumption needs of the user.

Features of the PowerStudio SCADA application

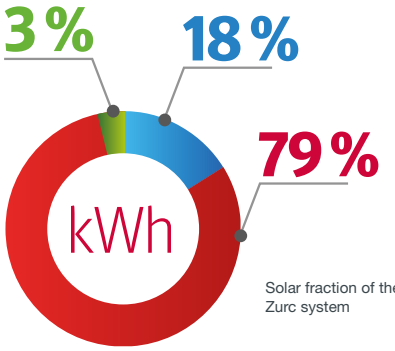
Below we describe the basic service features that are covered by the SCADA application for a self-consumption photovoltaic energy system with zero injection.

- ✓ **Instantaneous energy balance of consumption for PV generation.**
- ✓ **Detection of low performance of the PV installation (performance rate).**
- ✓ **Calculation of the current month's self-consumption percentage (solar fraction).**
- ✓ **Real-time monitoring and control of the installation's devices.**

- ✓ **Energy bill simulation indicating savings achieved.**
- ✓ **Environmental data (radiation, temperature) and weather forecast.**
- ✓ **Daily / monthly energy reports with operating indicators.**
- ✓ **Configuration of general alarms to warn of malfunctions.**
- ✓ **Integration of a photo slideshow of the PV installation on the home screen.**

Annual result kW·h

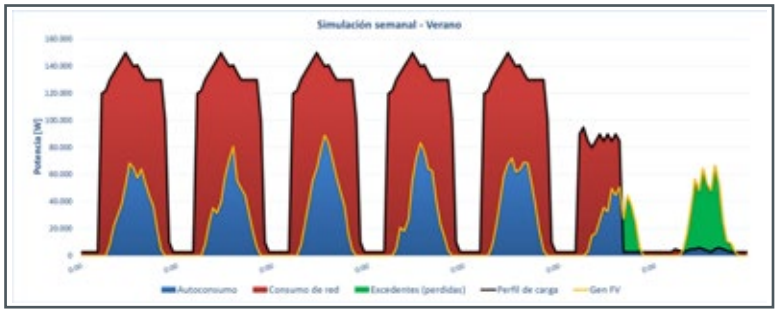
- **Self-consumption**
- **Consumption from the grid**
- **Surpluses (losses)**



Solar fraction of the 95 kWp Zurc system

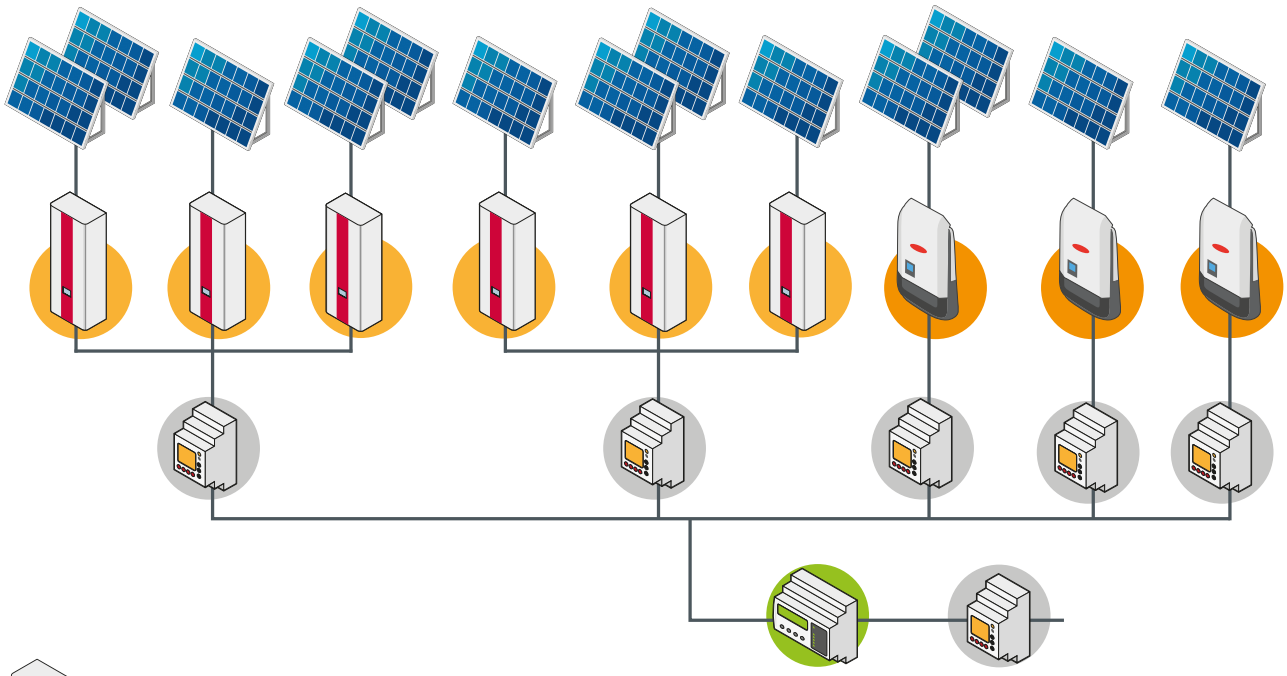
Software
PowerStudio

Installation control software



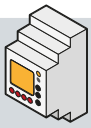
Simulation weekly (summer) 95 kWp installation Zurc

Diagram of the ZURC solar energy system

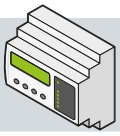


CirPower Hyb
Solar Inverter

Fronius
Solar Inverter



CVM MINI
Power analyser



CDP-0
Dynamic Power Controller

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