CASE STUDY
Highlighted Project

34kW installation in Tarascon, France

OVERVIEW

Special Focus: Aging & module mismatch

Installer: JD Energies

Installation Date: July 2010

Location: Tarascon, France

Average Irradiance:
1686 kWh/m^2/year

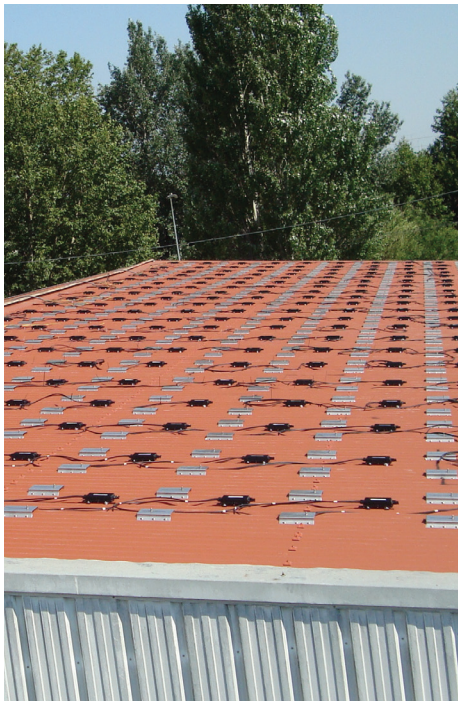
Installed Capacity: 34kWp

Modules: Trina 189 x 180W

Power Optimizers:
189 x 250AOB

Inverters: 6 x SE6000

Layout: 2 strings per inverter, strings of different lengths

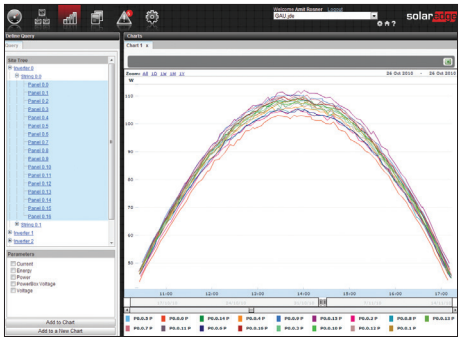


ESV Energie, a French-American company which specializes in implementing energy efficiency projects across Europe, acquired a 34 kW system in the French town of Tarascon. The installation at Tarascon is made up of 6 x SolarEdge SE6000 inverters and 200 Trina Solar 180W monocrystalline modules with SolarEdge power optimizers. It is meant to serve as a long term financial investment.

"ESV Energie mentioned that both energy yield and long term assurances were crucial elements for them" said Michel Ayache of Yomatec, distributor of SolarEdge's products in France. The profitability of a project is based on estimates of a system's performance, usually over the course of the next 20 to 25 years. However, few PV systems have been operational for a period of time long enough to demonstrate how their energy output changes over time.

Several factors related to the aging process of an installation are known to have a derating effect. One of the most prevalent is mismatch between modules that grows over time. The SolarEdge power optimizers are designed to prevent power loss from mismatch between modules. Even if each module in a string had completely different electric parameters, they would still continue operating at their individual maximum output. Overcoming the mismatch between the modules allows the SolarEdge system to harvest more energy from the Tarascon installation than would a traditional inverter system. This advantage is very likely to increase over the next few years, as modules age and mismatch between them grows.

All modules at the Tarascon site are connected to the SolarEdge Monitoring Portal. This real time online portal displays the energy output of each module, allowing the system owners to closely follow the system's operation and diagnose possible faults at the module-level. Its automatic analysis and remote troubleshooting capabilities shorten the time spent at the site on searching for the source of malfunction. As a result, ESV Energie saves about one third of expenses on operating and maintaining their site.



Screenshot: Individual module power curves plotted by the SolarEdge Monitoring Portal. Despite noticeable mismatch between modules, weaker modules do no limit the performance of more powerful modules in that string.

"Our team at ESV conducted a thorough study of the market and we realized that the SolarEdge system harvests more energy than the other systems available on the market. Moreover, a standard 12 years warranty on the inverter and 25 years warranty on the power optimizers demonstrated to us the lasting durability of SolarEdge's products, which is equally important. We feel that SolarEdge is better equipped to withstand future challenges to the performance of our installation."

Sebastien Lecomte
Project Director
ESV Energie