

CASE STUDY

Remedying Mismatch and Shading with Tigo's Monitoring & Optimization Functionalities

Summary

Connected in March 2011, the Jessolar PV plant is an integrated PV system that is compliant with the second edition of the Italian Feed-In Tariff ("Secondo Conto Energia"). It consists of 8,610 solar modules with a total power of 1,980kWp.

Over the years, this system revealed a 9% decrease in production. Therefore, the adoption of a monitoring system to identify, contain, and solve the reasons of this efficiency drop became mandatory. After an accurate analysis and the official approval from GSE ("Gestore Servizi Energetici", or the Italian National Grid Operator and Supervisor of Feed-In Tariff scheme) in 2015, the customer opted for Tigo's optimizers with monitoring, rapid shutdown, and optimization functionalities.

The Solution

Thanks to Tigo's monitoring and optimizing functions, the customer observed a clear improvement in mismatch and shading production issues. The customer is now capable of easily finding and solving other problems affecting this plant - including:

- Ten disconnected strings (~200 modules) have been reconnected;
- More than 210 damaged solar modules have been detected (whose production drop fluctuated between 33% and 100%);
- Two inverter anomalies have been discovered and since remedied by the manufacturer's technical service.

Comparing PV production data between H1-2016 and H1-2017, there is a clear 14.2% performance improvement. This result improved even more after the scheduled substitution of the 210 damaged solar modules (the optimization feature helped contain the issue at the time).

INSTALLER

Jessolar

INSTALLATION TYPE

Commercial

LOCATION

Italy



FEATURES

-  Optimization
-  Monitoring
-  Rapid Shutdown



Results

"With the Tigo system, our PV production increased by 10% and - above all - I now have a prompt and precise string and modules monitoring solution" as Massimo Gribaldo, Managing Director at Jessolar srl, stated in 2017 "Furthermore, rapid shutdown feature - cutting voltage at module level - prevent any fire risk. Even on-site cleaning operations have been streamlined. Right now, the operator can act in real time, managing any eventual problem or anomaly concerning each solar module.

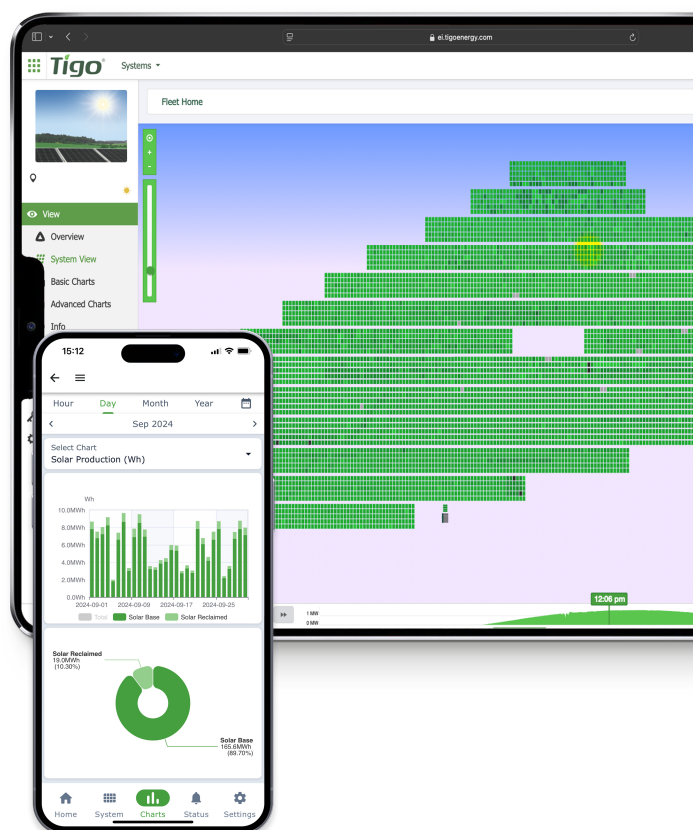
In view of a total expense of about 250k €, I predict a recovery of approximately 120k € by the end of 2017, with a two years ROI. Moreover, Tigo's monitoring solution offers me more bargaining power with modules/inverters manufacturers."

Optimization Impact Over Time

For the last seven years, the module-level monitoring functionality - accessible through the Energy Intelligence portal - has continued to deliver value to the system owner by promptly notifying anomalies and clearly identifying areas requiring intervention. At the same time, the percentage of Reclaimed Energy has consistently remained in the double digits, with an upward trend especially evident over the past two years - a strong indication of the Tigo's Flex MLPE effectiveness and long-term reliability.

Equipment summary

- Commercial installation
- System capacity: 1.98MWp
- PV Modules: 225Wp UE Solar, 235Wp CNPV
- Inverter: FRIEM RECon 30H-600



For more information on **Tigo Flex MLPE solutions**, for C&I installations visit: tigoenergy.com/ts4-x