



Case Study: Remedying Mismatch & Shading with Tigo's Monitoring & Optimization Functionalities

"With the Tigo system, our PV production increased by [more than] 10%... I now have a prompt and precise strings and modules monitoring solution." – Commercial PV system Owner

Location:	Jesolo (VE), Italy
System size:	1,980kWp
Modules:	UE Solar & CNPV (225W & 235W)
Inverter:	FRIEM RECon 30H-600
Installer:	Jessolar S.r.l.

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. It consists of 8,610 solar modules with a total power of 1,980kW.

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 (Italian National Grid Operator and supervisor of Feed-In Tariff) in 2015, the customer opted for Tigo's optimizers with monitoring 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:

1. ten disconnected strings (~200 modules) have been reconnected;
2. more than 210 damaged solar modules have been detected (whose production drop fluctuated between 33% and 100%);
3. 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 will improve even more once the scheduled substitution of the 210 damaged solar modules is complete (currently, this issue is contained by optimization features).



Customer Experience

"With the Tigo system, our PV production increased by 10% and – above all – I now have a prompt and precise strings and modules monitoring solution."

Furthermore, PV-Safe function – cutting voltage at module level – prevents 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 module.

In view of a total expense of about 250.000 €, I predict a recovery of approximately 120.000 € by the end of 2017, with a two years ROI. Moreover, Tigo's monitoring solution offers me more bargaining power with modules/inverters manufacturers."

--Massimo Gribaldo, Jessolar Srl