Deeply Distressed PV Plants Revived by Alectris
Resulting in Dramatic Increase of the Solar Portfolio’s Profitability

The Solar PV Portfolio
The project owner is a reputable and specialized investor in large-scale PV projects. This solar PV portfolio is made up of seven plants, approximately 1 MWp each for a total of 7MWp, composed of biaxial trackers. It is located in Puglia, Italy, and was constructed between 2009 and 2010.

The Challenges – Underperformance and Safety
The portfolio was experiencing severe underperformance and safety issues.

The underperformance of the portfolio was attributed to:
- Bad system design
- Lack of proper maintenance
- Complete absence of proper monitoring
- Issues’ Root cause never properly investigated

Results of Underperformance
The plants were producing well below the Base Case Scenarios leading to cash flow issues with overall financial performance of the investment below the budgeted values, up to 25% below base case scenario, leading to an average yearly loss of revenues of 150,000 euro per MW. In addition, huge costs were incurred in order to preserve even the suboptimal operational status of the plants.
The Solution – An Integrated Approach to Margin Protection

Alectris provides an integrated care approach to solar photovoltaic (PV) energy assets. This holistic, step by step process helped identify the main causes of the performance issues and ensured the corrections would create the desired performance results.

Step One – In Depth Analysis of the Design of the Trackers

Alectris stepped into this portfolio as the solar O&M manager starting in late 2013. The company conducted an in depth study of the existing trackers implementation to identify the bottlenecks and deficiencies of the system, paying special attention to the safety mechanisms incorporated. The structural issues affecting the biaxial trackers were identified and summarized for the client.

Step Two – Implement ACTIS for Holistic Control of Trackers and Plant Performance

Plant monitoring via ACTIS, the Alectris Solar ERP Platform, and analysis of the portfolio’s performance and availability revealed severe underperformance. The performance was aggravated by structural issues including: manageability (proprietary protocols bottleneck, inefficient and unreliable hw, difficult and prolonged (re)startup, unreliable tracker positioning) and safety (lack of general alarms, inefficient tracker movement, high consumptions, no alarm positions). ACTIS alerted the team to the range of issues involved and allowed fixes to be adapted readily.

Step Three – Trackers Re-Engineered

Major modifications of the existing biaxial trackers control system were required:
- Identification of proper hardware PLC upgrades
- Correction of any malfunctions of the existing firmware
- Enhancement of alarms, parameters and settings to maximize proper operations and remote control via ACTIS
- ACTIS customization according to trackers requirements

The Outcome

Dramatic increase of the solar portfolio’s profitability.
The new configuration resolved the underperformance and safety issues. The first month of operation showed additionally generated revenue of 15% if compared to the same prior year, resulting in a payback period of the new tracking system installation of few months. Moreover, thanks to the close monitoring reached via ACTIS no manual intervention is required and reliable predictive maintenance can be achieved. Additionally, extra yield can easily reach 33% thanks to further optimization of the backtracking capabilities of the installed firmware.

Full white paper available upon request.

Contact us for a Free ACTIS Demo!

Italy
Emanuele Tacchino
+39 342 8835856
emanuele.tacchino@alectris.com

Greece
Vassilis Papaeconomou
+30 6944 464679
v.papaeconomou@alectris.com

U.S. / Latin America
Marco Lopez
+1 650 296 8782
marco.lopez@alectris.com

alectris.com