PV Asset Management with SolarEdge

- IAOSB, Turkey
- 500 kWp

The Directorate of the İzmir Ataturk Organized Industrai Zone selected the SolarEdge DC optimized inverter system for its 500kW PV system due to its comprehensive operation and maintenance solution.

Capacity: 500 kWp

Location: İzmir Ataturk Organized Industrai Zone (IAOSB), Turkey

Installation Date: June, 2014

Inverter: 26 X SolarEdge SE17kW

Power Optimizers: 962 X SolarEdge P600

Modules: 1924 X Jinko 260 kW

Installed by: RENKO ENERJİ

"As the Turkish PV market is taking off, commercial system owners are looking to install PV technology that helps future proof their solar energy investment. By offering increased energy yield, while reducing risk and operational expenses, the SolarEdge DC optimized inverter system provides system owners the type of superior asset management that allows them to better secure their long-term investments"

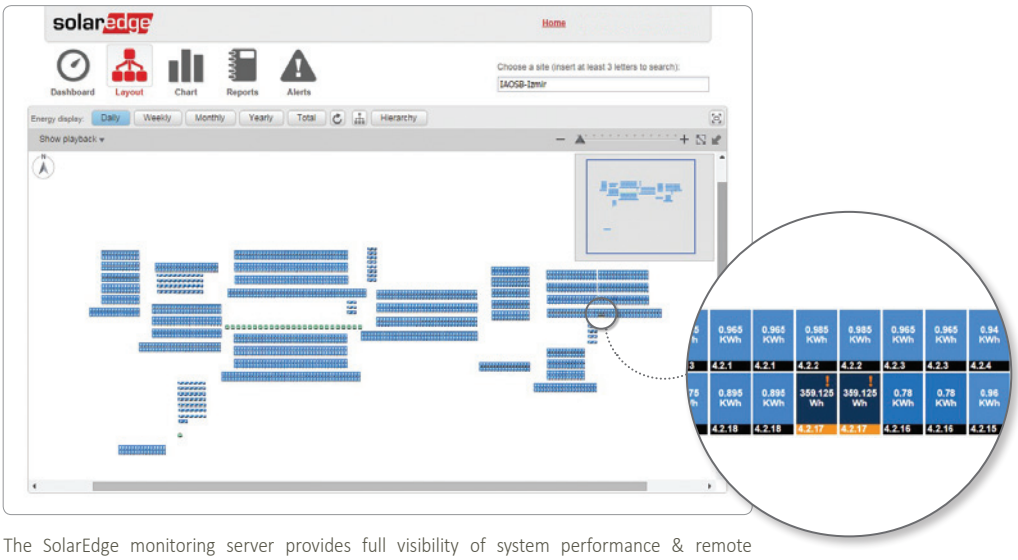
> Dr. Haluk Ors, General Manager, RENKO ENERJİ

Running a 110 MW gas turbine plant to provide electricity to 650 medium-sized companies in its industrial zone, the Directorate of the İzmir Ataturk Organized Industrai Zone (IAOSB) opened a call for tenders for a PV system. In the original bid, the Directorate had specified a centralized inverter, but once RENKO ENERJİ was awarded the project, the PV installer recommended SolarEdge's DC optimized string inverter system. After understanding how its inverter choice could significantly impact its O&M strategy and long-term profitability, the management selected the SolarEdge DC optimized inverter system due to its improved solar asset management capabilities, increased energy yield, and risk reduction.

Solar Asset Management

With a variety of factors impacting the bottom line of a PV system, solar asset management is essential in minimizing operation and maintenance (O&M) expenses and maximizing lifetime energy yield. By selecting the SolarEdge DC optimized inverter system with real-time remote monitoring at the module, string, and system levels, Renko can use the SolarEdge monitoring portal as a strategic O&M tool to proactively manage its solar assets. As a management tool for optimum plant operation, the SolarEdge monitoring portal provides the Directorate of IAOSB increased system uptime and minimized downtime through a variety of features:

- Comprehensive analytics tracking and reports of energy yield, system uptime, and financial performance;
- Pinpointed and automatic alerts for immediate fault detection, accurate maintenance, and rapid response;
- Remote troubleshooting for fast and efficient resolution with minimal onsite visits.



The SolarEdge monitoring server provides full visibility of system performance & remote troubleshooting for effective O&M management. The zoom-in provides module-level energy production and pinpoints underperforming modules, thus allowing the Directorate of the IAOSB to proactively manage its solar assets. This screenshot shows daily energy production.

Risk Reduction

Effective solar O&M also includes reducing plant-wide risk factors that could decrease performance, result in monetary losses, or cause asset destruction. With property protection from potential damage being a top priority, it was important that the IAOSB PV systems meet the most advanced safety standards.

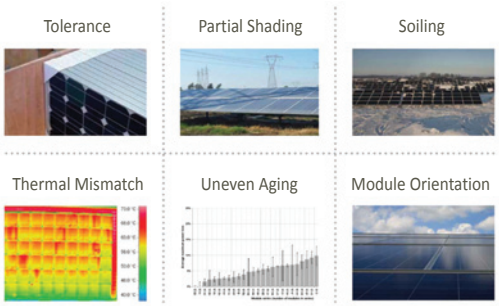
With a built-in safety feature called SafeDC™, the SolarEdge DC optimized inverter system protects installers, maintenance personnel, firefighters, and assets. The certified DC disconnect automatically decreases DC current, as well as voltage from all string wires, whenever inverter or grid power is shutdown. The voltage of each module is reduced to 1V.

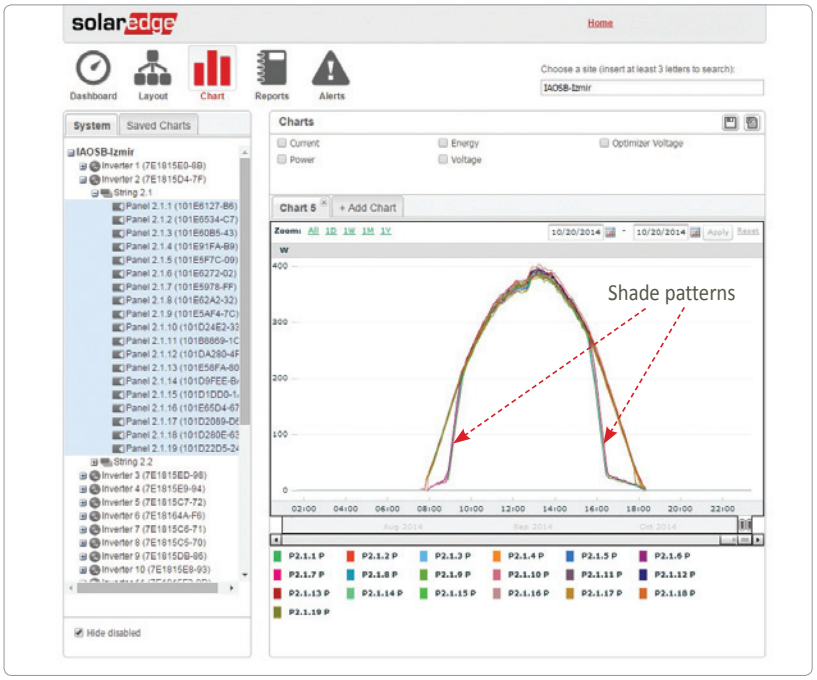
Increased Energy Yield

Being in an industrial real estate zone that continues to expand, the PV installation is susceptible to potential obstructions, such as new buildings, antennas, or growing trees. These potential circumstances could cause less than perfect irradiation conditions and decrease the lifetime energy production of the system, thus decreasing the long-term return on investment. In order to ensure its Performance Ratio, it was important to future-proof the design of the system by expecting the unexpected.

The SolarEdge DC optimized inverter system with module-level optimization mitigates power losses from mismatch between modules, caused by tolerance and thermal mismatch, partial shading, soiling, uneven aging, and module orientation. By using SolarEdge technology to minimize the consequences, the Directorate of the IAOSB protects its future energy yield and investment.

Module mismatch sources





The chart view from the SolarEdge monitoring server shows the performance of individual modules. As illustrated in the graph, the power of each module is optimal and independent of other modules in the same string in order to provide increased energy production throughout the system lifetime.

A Reference Case

Following the success of the 500 kWp installation at the IAOSB, RENKO ENERJİ now uses the site as a reference case and regularly brings visitors from the surrounding region to demonstrate the installation and performance of the SolarEdge DC optimized inverter system.

As a business leader in Turkey, the Directorate of the IAOSB hopes that its PV system will set a new standard for the more than 100 organized industrial zones in Turkey.

Daily energy generation and carbon dioxide savings from SolarEdge's monitoring portal are publicly displayed in the IAOSB to raise awareness.

About SolarEdge

Among the top global inverter companies, SolarEdge is the global leader in DC optimized inverter systems for PV installations. Founded in 2006, SolarEdge established the DC power optimizer segment and is leading it with over 80% market share. SolarEdge has shipped over 150,000 inverters, 4,000,000 power optimizers, and has systems installed in more than 70 countries worldwide. With strategic partnerships across the PV value-chain from module manufacturers to integrators, SolarEdge installations can be found in six continents.