

Enhanced ROI in a 5MW ground mount SolarEdge system in Burdur, Turkey

Mr. Atilla Önal, owner of construction and marble quarries, was in advanced developing stages for his 5MW ground mounted installation when he first encountered SolarEdge. The motivation for the large investment in PV was not only business related but also social responsibility of a large corporation to provide clean and renewable energy. Choosing SolarEdge for this project allowed Mr. Önal to generate more power from each module and maximize system uptime, while keeping low installation and maintenance costs.

- Burdur, Turkey
- 5,916 kWDC



masa 

- Installation Date: May 2015
- Inverter: 290 x SE17K Inverters
- Power optimizers: 9,860 x SolarEdge P700
- Modules: 19,720 x Trina Solar 72 cell 300W TSM-300PC14
- Installed by: Masa Enerji

The SolarEdge SafeDC™ feature was key in making the decision to install SolarEdge, both as EPC and owner of the system, as it guarantees safe DC voltage during installation, maintenance and emergency

“As owners of the system it was highly important for us to use the safest technology available, and we obviously appreciate the increased uptime and added energy provided by the module-level optimization. As EPC of the system the SolarEdge solution allows us to enjoy savings both on CAPEX through a significant reduction of Balance of System components and flexible design and on OPEX through enhanced O&M capabilities.”

Atilla Önal, Owner, Masa Enerji

Increased Energy Yield through Module-Level MPPT

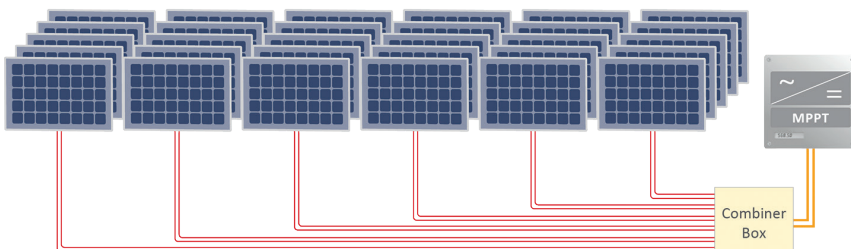
The SolarEdge DC optimized inverter solution performs maximum power point tracking (MPPT) for every two modules, and therefore allows the modules to generate the maximum possible energy. This eliminates power losses due to module mismatch and increases the energy yield for the entire system. In the first 6 months of full operation (July-Dec 2015), the system generated close to 4GWh of energy, with November figures >10% higher than estimated: 4.03kWh/kWp/day production on average, compared to the PVsyst estimates of 3.63kWh/kWp/day, and similar results in December (actual production of 3.25kWh/kWp/day on average compared to 3.02kWh/kWp/day as estimated by PVsyst; 8% higher yield).

Capital Expenditure (CAPEX) Savings

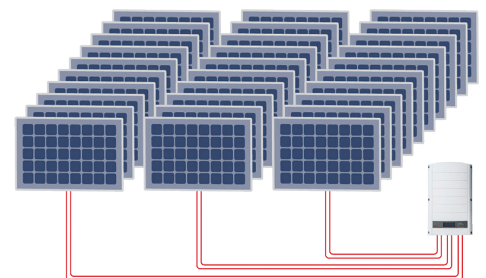
Using a fixed string voltage, the SolarEdge DC optimized inverter system allows connection of modules in strings that are significantly longer than traditional inverter strings. This allows reduction of the number of strings which results in a significant reduction of Balance of System components such as cables, fuses, combiner boxes, etc.

As one of the very few installations of this size using 72-cell panels in Turkey, the combination with the SolarEdge system ensured yield maximization at a very competitive CAPEX level. The panels were laid out in a landscape orientation, which improves electricity production but usually significantly increases BoS costs. Thanks to the long strings enabled by the SolarEdge system, this increase in BoS cost was eliminated, resulting in a truly optimized system lifetime value.

Traditional string inverter



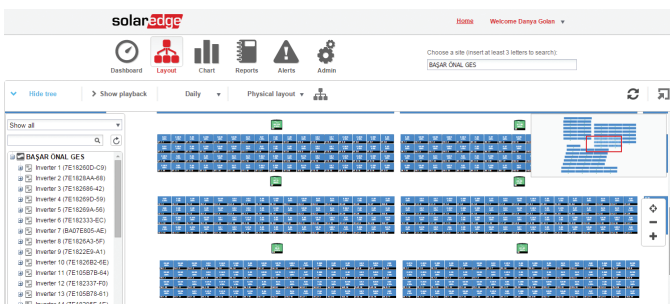
SolarEdge system



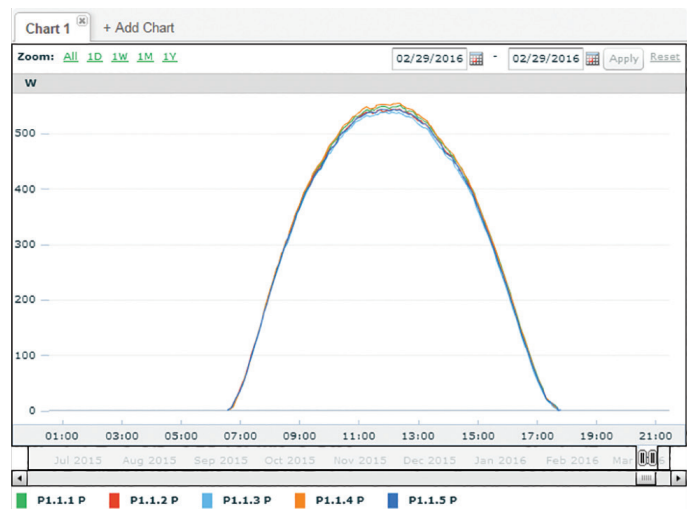
Reduced Operational Expenditure (OPEX)

The real-time remote monitoring at the module, string, and system levels acts as a strategic PV asset management tool. The ability to monitor every module separately helps reduce operation and maintenance (O&M) expenses and increase system uptime. The SolarEdge monitoring portal provides clear tracking of the system's performance through a variety of features:

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



The layout view from the SolarEdge monitoring portal shows the performance of individual modules and their physical location. The graph illustrates the power of each module and the slight inherent mismatch between modules. Mismatch losses are eliminated due to the module level optimization



Superior Safety

One of the main reasons to choose SolarEdge for this installation was the built-in safety feature SafeDC™. This feature allows the SolarEdge DC optimised inverter system to protect installers, maintenance personnel, firefighters, and assets. The VDE-2100 certified DC disconnect is designed to automatically decrease DC voltage from all string wires, whenever inverter or grid power is shut down. The voltage of each module is reduced to 1V.

