

Floating PV generates revenue while providing solar energy to 5000 people

Partnered with Ener-T International, SolarEdge offers design flexibility amounting to 15% more solar PV to generate more power

Background

Ener-T is a pioneer in the renewable energy industry. The company is active in many renewable energy fields and has 40 years of experience.

The Ener-T Ramon project was initiated in the south of Israel, in Mitzpe Ramon municipality, known for 500- meter-deep crater and its popularity as a tourist destination. Located in the desert, it is subject to extreme weather: hot and dry weather prevails in the summer with strong winds, and the winter is very cold, with occasional snow. The general abundance of sunshine made Mitzpe Ramon a good choice for a large solar array. The site hosts a 242,811 sqm water reservoir consisting of recycled sewage water that is used for local agriculture and other needs in the area.

The Challenge

Ener-T came up with the idea to use the reservoir as a source for energy production. In order to maximize ROI Ener-T decided to cover the entire reservoir with solar strings, including the banks of the reservoir. This resulted in unique challenges both from an engineering standpoint and Operation and Maintenance safety perspective.

Covering the whole reservoir with PV meant that the tilts of each string had significant mismatches at both ends relative to the middle of the string. This kind of mismatch would significantly reduce power generation in a traditional solar system.

In addition, the reservoir water levels would rise and fall depending on local agricultural use, which would lead to difficulties in accessing the panels.

Quantified benefits



Reduces water evaporation by **20 to 30%**



3,456K - Kg Co2 Emissions saved in one year



Energy produced for **5,000** people for 25 years



40% less DC cabling required



35% Saving on O&M costs



"SolarEdge is a company with advanced technological capabilities, along with solid financial backing. They have the ability to accompany us as an entrepreneur in all phases of the project, and no less important, the ability to meet new challenges as they arise."

Asaf Harats, CEO of Ener-T International

Performance and Safety Risks of Floating PV

Performance and Safety Risks of Floating PV infrastructures include their susceptibility to wear and tear, and weather erosion which could jeopardize the long-term performance of the installation.

With longer strings, there's a concern that damaged cables could cause a fire hazard, and therefore safeguarding the site for installers and service crews was extremely important. Another challenge was the high cost of constructing the necessary mounts for the system. And Ener-T's CEO, Asaf Harats, set an aggressive 6-month timetable for the project, which meant that planning and installation had to be expedited quickly.

The Solution

SolarEdge provided a full solution to address all the site-specific Floating PV challenges such as covering the full reservoir and adjusting to extreme weather conditions.

With SolarEdge Power Optimizers, each module operates independently, overcoming module mismatch and producing significantly more power. The Power Optimizers also enable visibility at the panel level which is viewed on the Monitoring Platform.

This saves Ener-T time and money on site maintenance by making it easy to pinpoint any faults which need to be addressed. In addition, SolarEdge's SafeDC feature is designed to provide enhanced safety for all personnel by automatically reducing system voltage to a touch safe level during grid failures or AC power shutdown.

SolarEdge's Consultative Approach

While SolarEdge technology was a perfect fit in meeting Ener-T's requirements, the SolarEdge team went above and beyond in providing creative solutions for a cost effective and safe structure.

The SolarEdge team's availability, the quality of service, and their ability to deal with difficult challenges at the site, directly led to the success of the project.

Installation at a Glance



5 MW
Capacity



240k+ sqm
Floating PV
installation in Israel



8,850
Modules



4,425
Power Optimizers



123
Inverters



About SolarEdge

SolarEdge is a global leader in smart energy, delivering innovative commercial and residential solutions that power our lives and drive future progress. Leveraging world-class engineering and worldwide experience, SolarEdge developed a ground-breaking intelligent inverter solution that changed the way power is harvested and managed in photovoltaic (PV) systems. Over 50% of Fortune 100 companies have SolarEdge technology on their rooftops and the company (SEDG) is traded on Nasdaq.