



SolarEdge partners with BP as it emerges from stealth

Israeli solar firm unveils distributed DC solar systems that reduce energy losses and cost, and that hold possibilities in batteries and other clean technologies.

May 27, 2009

By Emma Ritch

Herzliya, Israel-based [SolarEdge](#) said today it's partnering with [BP Solar](#) to commercialize a power-harvesting system for solar panels that could improve energy efficiency by 15 percent to 20 percent while reducing costs.

The Israeli startup unveiled its technology for the first time today at the Intersolar conference in Munich, Germany.

BP Solar, a division of [BP Alternative Energy](#), is the first major solar company to work with SolarEdge, but CEO Guy Sella told the Cleantech Group that the company seeks to have its technology integrated into a number of manufacturer's PV modules starting in 4Q09, as well as sold as a retrofit for existing installations in mid-3Q09.

"It's the first holistic system that addresses solar power's inefficiencies, along with the safety and security concerns," Sella said.

SolarEdge used semiconductors and software to create a system to harvest and monitor power from solar panels. The technology works in place of central inverters, which typically maximize a string of solar panels by establishing a common voltage and power output, and then convert the power from DC to AC. The problem is that each panel can perform differently because of shading, deterioration, debris, and minor component differences, Sella said.

"All panels see the same current, and as a result none is at the optimal point," Sella said. SolarEdge's technology performs maximum power-point tracking (MPPT) regulation in each module to boost voltage to 400 volts before sending it across power lines to the inverter, and then to the user. Those lines have the added function of allowing

communication, enabling the customer to monitor performance and detect panel theft remotely. The system is also designed with a shut-off switch in case of emergencies.

The system contains three components: the PowerBox, assembled on the back of modules to optimize energy output and monitor performance; the central inverter, which has the only function of converting DC to AC, allowing it to be smaller than traditional inverters and to guarantee a 12-year lifespan; and the Web-based monitoring software that provides module-, string- and system-level performance data.

Sella said the system comes at the same cost as conventional power-harvesting systems. The recent awareness of the potential underperformance of solar panels due to central inverters has led a number of companies to offer potential solutions (see [Extreme makeover: Solar edition?](#)). Competitors in the space include [National Semiconductor](#), which also launched its product, SolarMagic, today at Intersolar (see [National Semi plans to reduce solar energy losses due to shading](#)), as well as [Enphase Energy](#) (see [Enphase introduces micro-inverter system](#)).

Still, Sella says his system is superior. The problem with micro-inverters is that they add cost but reduce efficiency, he said. And traditional inverters deteriorate in less than 10 years, while solar panels last 20 to 25. Although SolarEdge's system is warranted for 12 years, Sella said he thinks it will last at least 25.

“We’re at least a year and a half ahead of everybody, and we have a much broader product offering,” he said. “In 20 years, not everyone will use our architecture, but every panel will have active electronics embedded.”

SolarEdge’s power-harvesting system is designed to boost output of photovoltaic solar systems, including rooftop or utility-scale installations. The system also has applications in car batteries, because each cell has slightly different characteristics, Sella said. Additionally, it could be used to optimize the power consumption at data centers, he said.

SolarEdge has raised \$34.8 million in venture capital, including a \$23 million Series B round in December that included Vertex Venture Capital, Walden International, Opus Capital, and Genesis Partners (see [New year money goes to biofuels](#) and [Solar continues to take in cash](#)). The company has enough funds through the end of 2010 but is seeking additional money before it closes its most recent round, Sella said.

BP Solar and SolarEdge also secured a research grant from the U.S. and Israeli governments through the Bi-national Industrial Research and Development, or BIRD, foundation. The companies didn't specify the value.

Sella founded the company in August 2006. Previously, he served as the head of technology for Israeli military intelligence and as a partner with STAR Ventures of Israel. He has applied for 17 patents of the SolarEdge technology.

The company has 13 systems installed with test partners in the U.S., Japan, France, Spain and Germany. The company has small-scale production in Israel but is in talks with a contract manufacturer to boost production to the equivalent of 8 MW of systems this year and 60 MW in 2010.

The company has 60 employees in Israel and Japan, with plans to open an office in Germany. SolarEdge plans to sell systems with 3-kiloWatt inverters to maximize tariffs in France, Italy and Japan (see [ET Solar to sell modules to Italy](#) and [Spain leads 2008 solar market](#)). The company is also planning 5 kW, 6kW, 10 kW and 120 kW systems.