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Solar Power Boosting Technology Storms Market

Start-up SolarEdge is planning to integrate its converters and inverters with BP Solar panels and expects more than \$10 million in revenue next year. National Semiconductor is collaborating with Suntech Power, even as start-ups like Tigo Energy and Enphase Energy raise new venture rounds.

By Yuliya Chernova

A flurry of deals is hitting the market for companies that offer technologies boosting the power output of solar installations.

Israeli start-up SolarEdge is negotiating with a strategic investor for additional capital, as the company readies its converters and inverters for wide release, Guy Sella, SolarEdge's chairman, chief executive and founder, said in an interview with Clean Technology Insight.

Others entering the market with new technologies include National Semiconductor Corp., which is testing its products with Suntech Power Holdings Co.; Tigo Energy Inc., which just secured a \$10 million Series B round; and Enphase Energy Inc., which raised \$22.5 million in a round earlier this spring.

SolarEdge and its competitors are addressing what Sella called the "very, very sensitive" nature of solar arrays, which lose a lot of their power output because of the shading of a single panel or the inability of a large inverter to deal with minute change in voltage.

At a time when solar projects are more expensive because of the higher cost of financing, installers and panel makers are looking everywhere to improve the economics of each project installation, and power boosting may help. Several of the offerings include monitoring software that allows solar owners to know which of their panels are having problems.

"We expect to have \$20 million to \$30 million in revenue in 2010," said SolarEdge's Sella, "and to be cash-flow positive in the last quarter of 2010."

The start-up teamed up with BP Solar International Inc. to commercialize its panel converters and inverters by combining them with BP panels. It also just signed its first big order from a German integrator. SolarEdge will be adding its converters and inverters to 12 megawatts of that company's existing solar installations.

SolarEdge, which raised a \$23 million Series B round in December from Vertex Venture Capital, Walden International, Opus Capital and Genesis Partners, "is negotiating with a few strategic investors," said Sella, and it expects to take "some credit lines from venture lenders." The strategic investors are "big electrical companies that have access to utilities in the field of power meters and grid balancing," he said, declining to name them.

Sella says that SolarEdge's product has the big advantage of selling at the price of standard inverters, while offering a multitude of benefits. He said the package of 25 converters and an inverter from SolarEdge costs about 50 cents per watt.

SolarEdge is negotiating with two contract manufacturers, Jabil and Flextronics, said Sella, which will make the company's converters and inverters.

The company's products should reach "full general availability by the end of September," Sella said. It is opening an office in Munich in June and a California office in the fall.

"We are impressed with the initial performance and reliability tests of SolarEdge's solution," said Eric Daniels, chief technology officer of BP Solar, in a statement.

In company tests SolarEdge claims that its offer of adding individual power converters to each panel and a simplified inverter to the entire array increases the electricity output of solar systems from 2% for large power plant installations to close to 20% in homes.

Santa Clara, Calif.-based National Semiconductor, meanwhile, a publicly traded company, signed a memorandum of understanding with Wuxi, China-based Suntech to test National's power boosting tool with Suntech's panels.

The deal with National Semiconductor "is not exclusive," said Steve Chadima, Suntech's spokesman. "We are constantly looking at a wide variety of new technologies and adopt those that we feel are appropriate."

National Semiconductor, which markets its SolarMagic box installed at every panel, requires panel makers or installers to purchase the product at \$199 per unit in addition to the standard inverter they need. It says that retrofits on existing installations can often be useful, as trees or additional structures might appear after a solar array was installed and affect the array's output.

The company's product can also be used with new installations. Under its deal with Suntech, for example, "Pending successful evaluation, National and Suntech may jointly develop and market solar panels with the SolarMagic technology."

National just bought another start-up, Act Solar, which made power-boosting technology that improves power output of a string of panels, as the bigger company focuses its attention on the solar market, away from the chip industry. National stresses its experience with semiconductors that helps make its solar products reliable.

Another company in the space, Los Gatos, Calif.-based start-up Tigo Energy, raised a \$10 million Series B round from venture capital firm ICV and return investors Matrix Partners, OVP and Clal Energy, as it moves into volume production of its power-converting technology. It places an electronics box at every panel, which helps to improve inverter reliability and power efficiency of the systems.

Finally, micro-inverter maker Enphase Energy secured a \$22.5 million round this spring and is working with solar installer and panel manufacturer Akeena Solar on distributing Enphase's technology together with Akeena's panels.