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Solar Startup Energy Innovations, Funded and Incubated by Idealab, Begins Production in San Diego

By Bruce Bigelow
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Energy Innovations, a solar energy company founded by entrepreneur Bill Gross, opened the doors of its new headquarters and manufacturing facility today in the suburban San Diego community of Poway, CA, after gestating since 2001 at Idealab, the business incubator Gross runs in Pasadena, CA.

Energy Innovations has raised a total of $60 million in venture capital to develop its solar energy technology over the past nine years, according to Energy Innovations CEO Joe Budano. Idealab provided most of the funding, along with Mohr Davidow Ventures of Menlo Park, CA, and an unnamed individual investor, whom Budano describes as the founder of "a modestly successful Internet search engine that now has an annual budget bigger than many countries."

Budano tells me he relocated Energy Innovations to suburban San Diego because the area "has a pretty good cleantech cluster forming here," he knows the region and can recruit the kind of engineering talent he needs here, and because he got a good deal on the 60,000 square-foot building. The facility includes the company's headquarters, design center, and global manufacturing operations.

Energy Innovations already has begun making its "Sunflower" solar energy modules, which uses a sun-tracking system to follow the sun's course through the sky and a proprietary optical system to concentrate the sun's energy onto a photovoltaic (PV) cell made of gallium arsenide. The combined effect of the solar tracking feature, the highly concentrated photovoltaic (HCPV) design, and the ultra high-efficiency of the gallium arsenide semiconductor enables the module to convert more than 29 percent of the sun's energy into electricity.

The solar energy-to-electricity conversion rate of Energy Innovation's module is more like 38.5 percent under idealized laboratory conditions, according to Budano, the firm's CEO. The conversion rate of advanced PV cells under similar idealized conditions can exceed 23 percent, but Budano says most commercial PV panels have a conversion rate of about 15 percent, and thin-film solar is at about 10 percent. As a result, Budano estimates a 1-megawatt solar energy facility using the Sunflower technology will generate about 30 percent more electricity than a 1-megawatt facility using conventional PV solar.

"We've shipped product already to Korea, and we're sending some modules to Caltech," Budano says, referring to the California Institute of Technology in Pasadena. He estimates the company currently has a $2 million backlog of orders.

Energy Innovations currently employs 25 people, although Budano estimates the company will hire about 100 workers over the next six months, primarily in manufacturing, to staff three production shifts.

Solar module production should increase by more than a factor of six, Budano says, from about 3 megawatts this year to more than 18 megawatts in 2011.