



Israeli Greentech Companies Make Their Pitch

Israeli greentech companies look for funding at a Palo Alto, Calif. event, while Tigo Energy announces a collaboration with Clal Energy, which will take a 10 percent stake in Tigo and deploy its module output improvement systems on large-scale solar projects.

By: Jeff St. John November 11, 2008

As a country with limited water and little in the way of natural energy resources, it perhaps isn't surprising that Israel is second only to the United States in startup companies pursuing renewable energy, water efficiency and other green technologies. But what these companies need now, they say, is money – and many attended the Israel Cleantech Showcase in Palo Alto on Tuesday, to ask for it.

Meir Ukeles, general partner with Israel Cleantech Ventures, which raised \$75 million in May to invest in clean technology companies, said that in 2005 there were "virtually no VC dollars available" for Israeli greentech startups. VCs invested over \$1 billion into Israeli startups that year—the country typically receives more VC funds annually than any European country – but the vast majority went to chip, security and biotech companies. By 2008, in contrast, venture capital investment in the country's greentech sector had grown to about \$200 million in more than 20 deals, he said.

"That is not enough," Ukeles said. His firm and the few others focusing on cleantech investing in Israel won't be able to fund what he said were more than 600 companies seeking investment. Given that fact – as well as the global economic crisis that has dried up money for new companies – "bringing investment from Silicon Valley is going to be critical," he said.

In cleantech, Israel's water treatment and management industry is well known, with more than \$1 billion a year in water technology exports, said Eric Weiss, cleantech initiative chairman for the California Israel Chamber of Commerce, which co-hosted the event with the Cleantech Group. Along with established companies, universities like Technion try to incubate companies from research projects. Israel is also a major center for desalination.

Israel's solar power industry has also received its share of attention, Weiss said. Among those with connections to Israel is BrightSource Energy Inc., an Oakland, Calif.-based solar thermal power startup that has a deal to provide up to 900 megawatts to California utility Pacific Gas & Electric.

And then there's Better Place, the electric-transportation company founded by Israeli-American entrepreneur Shai Agassi, which has chosen Israel as one of the first markets to build its network of electric vehicle battery recharging stations. The firm hopes its recharging stations could someday replace the world's fossil fuel-based transportation-fueling infrastructure. In some ways, Israel was a logical choice. Electric cars have trouble going over 150 miles before needing a recharge, and it is difficult to drive that far in Israel without plunging into the ocean or over a somewhat hot border. But Ukeles noted that Israeli startups in other fields – including information technology to manage and conserve energy and power storage projects based out of Israeli military research – also show future promise.

One of Israel Cleantech Ventures' portfolio companies presenting their business plans Tuesday was Emefcy. The name is a spelling-out of the acronym for the company's microbial fuel cell technology, which CEO Eytan Levy said could tackle the challenge of making wastewater treatment cheaper and producing renewable energy production in a single swoop. (Levy used to run a water purification company called AqWise.) In simple terms, Emefcy has created electrogenic bacteria that can treat wastewater by splitting the organic materials within it into protons and electrons. By using low-cost electrode materials and other proprietary processes, Emefcy's "Megawatter" system could produce electricity as cheap as 10 cents per kilowatt hour, he said.

"The U.S. electricity bill for wastewater treatment [is only] \$1.6 billion a year," Levy told the forum audience. "It's a huge amount that can be saved." Besides energy production that could offset treatment plants' power bills, Emefcy's technology reduces the levels of sludge left in treated water, he said.

To get to the proof-of-concept phase, Emefcy is seeking \$3.5 million to \$5 million in a Series A funding round, and will need about \$9 million in about three years to reach its goal of profitability by 2013, Levy said. Emefcy's technology can also produce hydrogen from wastewater, which could be collected and sold to power fuel cells, he said.

Another Israeli company taking a new tack on an age-old technology is Coriolus Wind, which has developed a wind energy system that is essentially a standing grid of many smaller turbines that spin on a vertical axis, rather than the single large turbines that spin on a horizontal axis that now dominate the \$30 billion wind power industry.

Acting CEO Radi Gidron said Coriolus' system could produce energy at about 70 percent of the cost of those traditional large turbines, due to their lower cost of manufacturing and ability to capture lower-speed winds. Gidron is also a partner in Precede Technologies, a venture capital firm that backed Coriolus in its initial \$1 million funding round. Coriolus is now seeking \$10 million more "as soon as practical" to build a prototype system in southern Israel and prove its technology to the wind power developers it hopes to sell to, Gidron said.

Jerusalem-based 3G Solar, which is developing dye solar cells, was also in Palo Alto on Tuesday to promote its fundraising plans. CEO Barry Breen said the company's dye solar cells have achieved efficiencies of 11.3 percent in lab tests, and are aiming for efficiencies of 7.5 percent for commercially produced cells and 7 percent for modules by mid-2009, and eventual efficiencies of as high as 10 percent.

Photovoltaic cells made from organic dyes are less efficient in converting sunlight to electricity than those made from minerals like silicon. Critics also point out that dyes may not last as long as solid silicon or glass panels. But proponents of the technology, which include companies such as Konarka Technologies Inc., Dyesol, Heliatek and G24 Innovations, say dye solar cells can also be produced at much lower costs.

The company's goal is to produce cells at less than \$1.40 a watt initially, and reduce that cost to less than \$1 a watt eventually, Breen said. Achieving such a low cost could place it in competition with low-cost thin-film leaders like First Solar (NSDQ: FSLR). To get there, 3G – which so far has raised \$4.5 million in venture funding from 21 Ventures– is seeking to raise \$5 million this year and \$10 million next year through an initial public offering on the Toronto Stock Exchange.

"That does not say we aren't interested in private placement - we are," Breen told Tuesday's audience. An initial \$5 million would fund a pilot plant for 3G's cells, and the remaining \$10 million would allow the company to build a commercial-scale plant able to make 8 megawatts of cells per year, he said.

"That may sound modest, but it's intentional," he said. "We're looking at off-grid, local production" near rural markets where the needs are great for cost-effective renewable electricity generation for lighting, communications and agricultural operations. Breen said the company is looking to make its panels, which could be made at a "fraction of the cost" of silicon or thin-film solar panels, close to the markets it wants to serve through partnerships with local manufacturers. Additionally, 3G is considering placing pilot projects in India, as well as Brazil and African countries including Senegal, he said. Improving solar module efficiency isn't just about breakthroughs in their design - innovations in managing them once they're built and installed can also make a big difference.

That's the proposition that Tigo Energy brought to Tuesday's conference. The Los Gatos, Calif.-based company, which in June raised \$6 million in a funding round co-led by Matrix Partners and OVP Venture Partners, promises to boost the energy of solar systems by up to 20 percent for residential systems and up to 8 percent for larger-scale systems by controlling and monitoring them on a module-by module basis with a set of hardware and software.

Tigo on Tuesday also announced it had formed a collaboration with Clal Energy, a subsidiary of Israel-based conglomerate IDB, in which Clal Energy will take a 10 percent ownership stake in Tigo and deploy Tigo's technology on major photovoltaic power projects. Dollar amounts of the ownership stake were not disclosed. "The positive thing about it is, it's a real acknowledgement of [Tigo's] technology, and applicability of the technology to larger-scale projects," said Jeff Krisa, Tigo's vice president of sales and marketing.

The company was founded by Ron Hadar, the former CEO of Tenta Technology, a U.S.-Israeli based company in the semiconductor capital equipment control systems business that was acquired by MKS Instruments (NSDQ: MKSI) in 2002.