

All in the Family

A FATHER-SON TEAM THINKS GLOBALLY, ACTS SOLARLY

by Patricia Kutza

It wasn't easy being green in the Ukraine during the '70s. That was a time when champions of environmentally friendly messages were considered eccentric or sentimental. But a lack of popular interest in his beliefs didn't stop scientist Viktor Vasylyev from following his passion. Believing that solar energy could be the engine that provides an economically viable source of power to society, this scientist focused on translating his theories into practical solutions.

From his West Sacramento-based office, Sergey Vasylyev, Viktor's oldest son and business partner, recalls the early years in the Ukraine: "My father, founding chair of the Ukrainian section of the International Solar Energy Society, created a number of inventions that drew from his astronomy and space physics background."

But being able to commercialize those inventions was not possible, Sergey says, because of the depressed Ukrainian business climate during that time. "There was no access to capital then," he says, "and the economy was so depressed that many businesses really struggled to survive."

What Viktor did have access to was some Sacramento business connections, and a son whose passion for creating renewable energy solutions had already been stoked from working long hours alongside his father. Armed with degrees in physics and astronomy from Ukrainian-based Kharkov State University, Sergey arrived in the Sacramento area in the early 2000s with the goal of making their shared vision a reality.



The base for the Vasylyev family business is SVV Technology Innovations Inc. in West Sacramento. Its portfolio is steeped in information technology and space physics concepts, with the centerpiece an innovative solar concentrating collector design. This collector uses reflective surfaces to concentrate sunlight onto a small area, where it is absorbed and converted to heat or, when used with solar photovoltaic devices, into electricity.

Sergey says that his collector design is a cost-effective and versatile alternative to the current alternatives, such as a parabolic trough. The parabolic trough system concentrates its energy through long rectangular mirrors. These mirrors are tilted toward the sun, focusing sunlight on a pipe that runs down the center of the trough. This heats oil that's flowing through the pipe and that's later used to boil water in a conventional steam generator to produce electricity.

Sergey explains that the power of his solar-collector design will eventually bear fruit in the form of 4-kilowatt solar panels that will need less silicon, a product that normally drives up the cost of the panels.



His partnership with his father spans the globe: Viktor works on their solar-energy pilot project from the Ukraine while Sergey shares development responsibilities from the West Sacramento office.

The Vasylyevs have received some funding from the California Energy Commission, the Sacramento Municipal

Utility District and, at federal level, from the Department of Energy. Their timeline to market is about three years out, depending on whether they can meet some design and regulatory challenges.

"We want to be able to lower the current price point of \$3 per watt," Sergey says. To achieve that goal, he says, they need to have enough demand to

produce their panels in volume and will be positioning their product for sales in both the utility and residential sectors.

If a spate of new solar-powered housing projects launched around Sacramento this summer signals a growing trend, then the Vasylyevs' worry about demand may soon fizzle. There are more than 3,000 solar homes in the pipeline locally.

Straying from the design norm might have its competitive advantages, but it could also be an impediment when it comes to getting their product certified. "There's no type of certification yet for the type of concentrator we have created," Sergey says.

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— Sergey Vasylyev,
co-founder,
SVV Technology Innovations Inc.

Nor is there legislation that takes into account the burgeoning array of alternative technologies coming to market. Sergey gives Gov. Arnold Schwarzenegger points for raising awareness about the urgency of adopting sustainable-energy solutions. But he thinks there is a danger of selling his vision and the public short, unless there is a greater understanding of all the technological options available. "Solar concentrating collectors are still not recognized by legislation. Nobody knows how tech will look in the next few years. We need more legislation that will allow a wider array of technologies to compete." ■



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