

Clean Light

Neal Verfuert has no doubt that growing concerns about climate change are helping to boost business for Orion Energy Systems.

"The world is realizing that what's going on in energy is real, global warming is real," says Verfuert, president and chief executive officer. "It's time for solutions we can do right now that are immediate and make economic sense, that don't need to be subsidized - they're just good, prudent business."

Since Orion began manufacturing highly efficient industrial lighting fixtures in Plymouth six years ago, the company has seen a three-year growth rate of 324 percent, earning it a spot on the Inc. 500 list of the nation's fastest-growing companies in 2006.

Its core product is a simple fixture that makes the most of reflective and heat absorbing materials to provide brighter, broad-spectrum T-5 or T-8 high efficiency fluorescent lighting. It uses half the electricity of high intensity discharge lights (HID), commonly used in manufacturing plants today.

Orion is positioning its products as one answer to the global energy crisis. A recent report from the United Nations Intergovernmental Panel on Climate Change, which offered a sobering assessment of the impact global warming could have on the climate, and Gov. Jim Doyle's announcement to form a Task Force on Global Warming, are indications that the appetite for energy efficient products is likely to grow. Forty companies - including Boeing, IBM, John Hancock and Whirlpool - have endorsed the notion that climate change is real by joining a business council organized by the Pew Center on Global Climate Change.

To be sure, skeptics exist, Verfuert says. But plain and simple, if industry cuts its electric consumption, it saves money. All the other benefits - reduced Co2 emissions, reduced reliance on fossil fuels - will be gravy.

"I don't think anybody can deny that if you're putting mercury and carbon dioxide and sulfur dioxide into the atmosphere, it's not a good thing," Verfuert says. "But this costs a lot less than traditional lighting, and it's cleaner. It doesn't really matter what your politics are or the science is, it just makes good sense."

With \$50 million in revenue as of the fiscal year ending March 31, Orion now counts 76 Fortune 500 companies among its clients, including Toyota, Kraft, PepsiCo, Quad/Graphics and Sysco Foods. Orion has attracted national press, not to mention numerous awards, including the Wisconsin Manufacturer of the Year Award (twice) and the 2004 Ernst & Young Entrepreneur Of The Year Award.

Privately held by more than 420 shareholders, Orion was among 20 emerging clean technology companies invited to present company overviews at the annual Cleantech Venture Capital Forum in San Francisco in February. The invitation came not long after Orion garnered \$4.5 million in venture capital from Expansion Capital Partners LLC, a New York City firm that invests in companies which develop products that reduce ecological

impact. In November, Madison-based Capvest Venture Fund invested another \$500,000.

"That's dramatic exposure for us to meet and discuss and exchange ideas with top tier investment firms nationwide and internationally," says Jim Prange, Orion's vice president of business development. "It appears everyone is having issues with the cost of their electricity and it seems to accelerate upward. The timing is outstanding for us to really accelerate our growth."

Two years ago, Orion moved its main manufacturing operations into the former Mirro distribution center in Manitowoc, gaining 266,000 square feet of space. Its 23,000 square-foot building in Plymouth still houses administration and logistics. Every month, Orion ships out 40,000 light fixtures, which save the equivalent of 10 megawatts of power, about as much energy as it takes to provide electricity to 10,000 homes.

On a tour of the Manitowoc plant, Verfuert points out a new product the company introduced in February: light pipes. Not skylights in the traditional sense, but "direct renewable" fixtures that funnel natural light from large, plastic bubbles in the ceiling and channel it through highly reflective, broad pipes, providing enough illumination to switch off other lighting on most days. Orion recently filled its first order for 70 light pipes to Ralph Lauren Polo, for its North Carolina distribution plant.

The company works with its industrial customers to determine the best mix of lighting solutions for each situation, Verfuert says. In the last five years, Orion has helped its customers remove 182 megawatts from the grid, save 1.95 billion kilowatt hours, and save \$150 million in energy costs.

"In Wisconsin alone, we could save up to 1,500 megawatts of power if Orion's technology is employed throughout the state," Verfuert says. "That would be like shutting off three nuclear power plants like the one in Kewaunee."

In the last year, Orion has added 80 employees, taking its payroll to 185. Verfuert says his No. 1 obstacle today is "time." While he claims few or no other companies today offer the same advantages as Orion, competitors are hot on their heels because they, too, recognize the demand for energy-efficient lighting.

"An industry like this becomes a land grab," Verfuert says. "There are a lot of people who will buy a solution that might not be their first choice because they didn't know about us."

Orion holds 15 patents on its lighting platforms and additional product enhancements. Customers say plenty of similar products exist, but Orion offers advantages that the competitors don't. For one, their ballasts and bulbs are designed to be easily replaced; they do not have to be taken down to snap in new parts.

"I think they should be hanging their hat on the fact they have an industrial fixture, which makes their fixture better," says Jerry Eaton, director of energy and utilities for Mercury Marine, Fond du Lac.

Mercury tested fluorescent lighting from the top six manufacturers 24/7 for eight weeks at its Fond du Lac plant before deciding to buy the Orion fixtures. All of them had similar light levels and consumed about the same amount of electricity (half as much as the HID lights), but Eaton says the Orion fixtures were sturdier and easier to install.

"For ease of replacement parts, with its plug-and-play type system, Orion was hands down,

the best," Eaton says. "With the others, you have to take them down, bring them to the shop, replace the ballast and install them again. Even though they have a life expectancy of five years, sooner or later they will go bad. And 15 or 30 seconds vs. half an hour (to replace bulbs) is a big deal."

Based on electricity usage since Mercury replaced 3,000 metal halide light fixtures with Orion fixtures last fall, Eaton expects the company to save 4.23 million kilowatt hours annually.

Half the lighting cost

Given that the lighting in a typical manufacturing plant often accounts for 35 to 50 percent of its total energy costs, the savings can be great. Pewaukee-based Quad/Graphics saved about \$2 million annually, plus \$336,730 in maintenance savings, according to Chairman of the Board Thomas A. Quadracci, who serves as Orion's board chairman.

"Orion is a standard setter not only for the lighting industry but for all businesses in general," Quadracci says in a testimonial. "Its commitment to advancing lighting systems technology for efficiency and cost-effectiveness - as well as protecting the environment - is exemplary."

The Milwaukee Journal Sentinel had just purchased HID lights for its new, 448,750 square-foot production facility when Orion approached the company the first time. Facility manager Dennis Laskaskie was sufficiently impressed with a demonstration comparing energy use of the Orion fixtures to the HID lights that he agreed to meet again in two years. The Journal Sentinel tested eight fixtures over a period of time and found that the company could realize substantial savings. Not to mention, they measured a 30 percent increase in foot candles and employees liked the brighter, full-spectrum lighting without the glare of the HID lights. When Laskaskie calculated the ROI, the Journal Sentinel decided to replace all its lights with Orion fixtures.

Orion guaranteed a 26-month payback. Including a Wisconsin Focus on Energy grant worth \$25,541, the lights paid for themselves in just 13 months, Laskaskie says. With the new lights, the Journal Sentinel saves \$64,889 in energy costs annually, plus another \$12,978 in maintenance costs.

"Our energy costs were very high," says Laskaskie. "We took out the HID lights, which were only two years old. It was painful for upper management - until they saw the numbers. Their only regret was that they didn't look at this prior to building the building. When we added on a 30,000 square foot distribution center, we put the (Orion) lighting in right away."

A big challenge for Orion is "old thinking" Verfuert says. When plant managers hear of a product that can save 50 percent on energy costs, they think it's too good to be true.

"We're all raised to be cynical, and if it looks too good to be true, it probably is," he says. "A lot of people have made promises and not delivered. People see the savings with this the first year and they wait for the other shoe to drop."

In a conference room at the Manitowoc plant, Verfuert shows visitors a real-time, Web broadcast demonstration of Orion lights vs. the HID, or "legacy" lights that the company kept in the ceiling of the former Mirro plant, for comparison purposes. The computer is connected to the electrical meter in the building, and a large-screen wall monitor shows a Web-cam picture inside the plant while a line on a graph charts the amount of electricity consumed. Another graph shows the levels of emissions from carbon dioxide, sulfur dioxide, nitrous oxide and mercury representing the waste from a coal-fired power plant per kilowatt consumed. All drop measurably when the Orion lights are on vs. the HID lights.

Verfuert turns off half the Orion lights. The plant dims slightly but not enough to interfere with production. Photometric standards from the Illuminating Engineering Society determine the optimum and minimum level of lighting in a manufacturing plant, he explains, and productivity levels can remain high even when lighting is reduced by 40 percent for a couple of hours during the workday. Orion is currently working with Tridium, a global software and technology company specializing in building automation, to allow light levels within plants to be reduced remotely in the event of an unusually hot or cold day, when power plants are stressed, the cost of energy is high and peaker plants kick in to avoid rolling blackouts.

"We'll have the ability to aggregate all of our customers that want to participate, and sell it (saved kilowatt hours) into the grid at real time pricing," Verfuert says. A power company can measure the amount of electricity removed from the grid and provide large financial incentives to those that save power during peak times.

Energy efficiency advocate

Orion has deployed Steve Heins, vice president of communications, to promote this notion and other changes in energy policy. The Alliance to Save Energy, a Washington, D.C. non-profit coalition, is among the advocacy groups Orion has joined.

"Wisconsin's Orion Energy Systems has clearly made a commitment to lowering our nation's energy use in order to save money, help protect the environment and enhance national security," says Alliance President Kateri Callahan. "Orion not only produces energy-efficient lighting systems for use in a variety of settings, the company also advocates in Congress for federal policies, programs, and research to advance energy efficiency."

Heins advocates a concept called decoupling, for one, which would remove the link between energy sales and utility profits. California has already done this, and half a dozen other states, including Wisconsin, are looking into it.

Wisconsin Public Service Commission Spokesman Linda Barth says although a recent request from Wisconsin Public Service Corp. to allow decoupling was turned down, the commission is exploring many ways to provide incentives for utilities to conserve energy.

"Decoupling is one of many things we are looking at as a way to improve energy efficiency in the state," Barth says.

Heins says another way Orion hopes to capitalize on the energy efficiency trend is to advocate for energy-saving devices to be considered on par with alternative energy, so that savings in kilowatt hours can translate into emissions credits in the Chicago Climate Exchange, of which Orion is a member.

Verfuert has devised a shared savings program that makes it hard for companies to turn down his products. The company guarantees in writing that a customer will realize a defined savings in energy costs of at least 50 percent. The customer receives a "bill" for nega-watts, or watts saved because of the Orion fixtures, and uses the savings to pay for the fixtures. About 70 companies have purchased Orion lights over the past two years under this arrangement, but more often than not, the projected savings simply closes the deal.

"Many times, what people end up doing is paying cash," says Verfuert.

Environmental altruism will never go as far as money when it comes to energy efficiency, he adds. People have tried to curb their lifestyles to help the environment, but when they're

asked to sacrifice comfort or convenience, these efforts rarely last. Businesses won't conserve energy if it costs more or results in lower productivity, either, and Verfuertth doesn't blame them.

"As Americans, we're not a society that's going to compromise our standard of living to save a few bucks on energy. It's just not our style. So we innovate a better way."

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