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Firms explore new ways to power plants

By Steve Toloken PLASTICS NEWS STAFF

ONTARIO, N.Y. (July 13, 5 p.m.) - Bob Bechtold's seemingly quixotic quest began eight years ago with a question: Could he power his injection molding company, Harbec Plastics Inc., with renewable or more environmentally friendly energy?

On July 9, he took a giant step toward making that a reality.

He switched on the last of the microturbines powering his Ontario, N.Y., plant, and he now can generate 100 percent of his company's power. The decision carries a big risk - if the local utility has its way, Harbec and its 23 injection presses could be forced to disconnect completely from the electric grid.

To some, Bechtold may sound like a plastics-industry version of Don Quixote, tilting at windmills as he pursues an idealistic but impractical dream. But the toolmaker-turned-entrepreneur, which founded the precision injection molding company 24 years ago, insists his power plan makes economic sense. "I very much believe that you could sell this thing completely on economics," Bechtold said. "The environmental part becomes obvious when you talk about it, but that's not the lead. It won't work in American society today if it has to be environmentally driven."

He's had to make some changes along the way. Using renewable energy alone turned out to be impractical - instead, he's using natural-gas-powered microturbines, which he claims will be cheaper and pollute less than most utilities' power plants. And he plans to add his own wind generator within the next year - which could generate as much as half the power he needs, without pollution, when the winds blow favorably off Lake Ontario.

It's been a costly, eight-year battle. He said he's had to fight his local utility, get rejection letters from 30 different lenders, and spend time weighing alternatives and seeing some of his would-be suppliers go out of business. A big part of his motivation is economic: New York is a high-cost state for power, and he's trying to escape from his 10.5 cent-per-kilowatt-hour power bills. But Bechtold runs his factory with an environmental bent. For example, he's trying to get part of it certified as the first warehouse that meets the standards of the U.S. Green Building Council.

Here are the numbers: Harbec has a long-term natural gas supply agreement that will cost him 7.5 cents per kilowatt-hour for power. The cost of paying off the turbines comes to another 3-4 cents a kilowatt-hour, assuming they are paid off in eight to 10 years. Most importantly, the company can use co-generation, taking the exhaust heat from the turbines and using that energy to heat and cool the factory floor for free. In the summer, that makes employees more comfortable, and it reduces moisture in the molding room and makes the parts better, said Harbec's corporate counsel, Gerry Wahl. There have been challenges. Until six weeks ago, the software in the microturbines made the system shut down if the lead turbine had problems, but that's been fixed, Wahl said.

If the local utility, Rochester Gas & Electric Corp., wins a battle with state regulators, RG&E will be allowed to levy a standby power charge almost equal to Harbec's current bill, even if the company does not use any power from RG&E, Wahl said. If that happens, Harbec will disconnect from the grid, but "there is a



risk to Harbec if that wire comes off the wall," Wahl said. RG&E spokesman Mike Power said the standby charge is not as high as a monthly bill, but he declined to provide specifics. Power said the utility needs to charge companies to maintain the system in case they need power. "They don't understand it costs more to deliver energy than it does to make the energy," Power said.

Environmentally, Bechtold claims his microturbines pollute much less than large power plants. The manufacturer, Capstone Turbine Corp. in Chatsworth, Calif., said the microturbines generate fewer nitrogen oxides than central power plants. An analysis prepared for the Regulatory Assistance Project, a Montpelier, Vt., federal contractor, found that microturbines generate the same amount of power more cleanly than traditional fossil-fuel power plants. Rick Weston, a principal in the firm, said the emissions answer is different, of course, if the microturbines are displacing power from a very clean source like hydroelectricity.

The environmental analysis can get complicated. An Energy Department official said that a large, combined-cycle natural-gas plant could have lower emissions than a microturbine. Harbec's plan to add wind power would not pollute, of course, but the company also plans to use a hybrid diesel/natural gas generator as a backup. While diesel rates poorly for emissions, Bechtold said his will use biodiesel fuel, a more-expensive form of diesel made from seed oil, soy and waste oil, to minimize the environmental impact. Harbec is one of apparently just a handful of plastic processors trying to power their electricity-hungry businesses with nontraditional means.

Rotational and injection molder Schafer Systems Inc. in Adair, Iowa, put up a 132-foot-tall wind turbine at its factory in 1995 and has received at least 40 percent of its power from it since then. While the company had environmental motives, its primary reason was for marketing - the tower and its 44-foot spinning blades are a good marketing tool, since the factory sit along Interstate 80, said Phil Littler, vice president of operations. "Our company philosophy is to do everything as economically and environmentally friendly as possible," he said. "The main thing we are trying to accomplish is drawing attention to our facility at the edge of the interstate."

The wind tower will be paid off in two years and essentially will generate free power, minus the \$5,000 annual maintenance budget. But the company is not sure it will put up another one, Littler said. Since Schafer Systems put up its tower, it went from being entirely owned by the Schafer family to almost 40 percent employee-owned. That has changed the economic calculus, he said. Executives say they can get a better return by spending the \$300,000 on other equipment, rather than a second windmill, he said.

As far as performance, the wind tower and the 225 kilowatts per hour it generates have met expectations. The company put a wind meter on top of a flagpole for a year before building the tower to get good estimates of how much power its location, on a high point near a long valley, could produce. "It has produced very close to what they projected, and its reliability is good," Littler said. "Iowa is a pretty good state for wind energy."

Schafer's story illustrates what seems to be a truism about environmentally friendly power in the business world, for the moment, at least. To deal with the added worries, a company has to be willing to look at more than just the bottom line. "A good businessman will not talk about [environmental issues] because he discredits himself," said Bechtold. "That's why you won't see much of it done. You can't put an economic viability on the environment and sustainability."

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