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A Swedish solution for biofuels

By **THOMAS LEE**, Star Tribune

October 5, 2008

MANKATO - Amid the throngs of iPod-toting, hoodie-wearing college students scurrying across the campus last week at Minnesota State University, Mankato, something was burning.

Several things actually: grain, chips and wood pellets. Inside a large white tent outside the student center, men with names like Per and Christofer were demonstrating the pride and joy of Swedish ingenuity: energy-efficient biofuel furnaces that emit far less pollution than their traditional counterparts. Nearby, Swedes and Americans furiously scribbled notes, exchanged business cards, shook hands and passed out literature.

The scenes belonged to an ambitious commercial and diplomatic effort to lure Swedish clean-energy firms -- and their technology -- to Minnesota. Led by the BioBusiness Alliance of Minnesota, the state hopes to spur local adoption and commercialization of biofuels -- energy made from animal waste, crops and straw -- by emulating the Swedes, who consume renewable energy sources the same way Americans guzzle gasoline.

"Sweden is 20 years ahead of us in green renewables," said Dale Wahlstrom, chief executive of the BioBusiness Alliance. By importing Swedish technology like biofuel-powered stoves and automated heating systems, "we will create awareness among the population that this stuff can be applied to daily life. Our future [energy] technology is just as good as their future technology. But there is a big gap in immediate applicable technology [in the United States]. Swedish technology can fill the gap."

Cooperation between U.S. and Swedish firms has long been championed by Michal Wood, U.S. ambassador to Sweden. Through his "The One Big Thing" initiative, Wood has actively played matchmaker between Sweden's clean-technology industry and American investors, companies and researchers.

Venture capitalists invested \$5.2 billion in clean-tech start-ups in North America and Europe last year, a 44 percent jump from 2006, according to the Cleantech Group, a research and consulting firm in San Francisco.

Amid high oil prices and concerns over global warming, the United States is finally getting serious about clean energy, said Hema Gunasekaran, vice president of clean technology and renewables investment banking for Piper Jaffray & Companies.

"Sweden has gone through the process for several years," Gunasekaran said. "We can only learn from it."

Sweden today generates about 40 percent of its energy from renewable sources like biomass, hydroelectric and geothermal power. Sweden, one of the first countries in the world to levy a carbon tax, has pledged to cut carbon dioxide emissions 25 percent by 2020. The country has already reduced greenhouse emissions by 7 percent between 1990 and 2005 while managing to grow the economy by 36 percent in the same period,

according to a white paper authored by the U.S. Embassy in Sweden.

"We have already invented the wheel," said Bengt-Erik Lofgren, CEO of AFAB, a bioenergy consulting firm in Sweden.

Minnesota potential

When Wood established the International Renewable Energy Technology Institute earlier this year, Minnesota successfully lobbied to host the research organization at Minnesota State University, Mankato. Next year, the institute will launch a for-profit entity devoted to tech transfer and business development between the United States and Sweden.

Wahlstrom said he's hopeful that organization, called AFAB USA, also will be based in Minnesota.

Those ties seem to be paying off. At last week's International Bioenergy Days conference in Mankato, Swedish and Minnesota firms were already talking deals. In one meeting room, Chris Huisinga, director of business development at Life-Science Innovations in Willmar, Minn., listened intently as Lars Norman, sales and marketing manager for Ageratec Biodiesel Solutions in Norrköping, Sweden, explained how Ageratec's technology could efficiently turn feedstocks like animal fats and vegetable oil into biodiesel fuel.

Huisinga said Life-Science Innovations, which advises and funds several agricultural companies, wants to cut transportation costs by providing its trucks with fuel made from crushed soybean oil. The technology to do this does not yet exist in America, he said.

"Most people [in the U.S.] have broad concepts but not actually technology," Huisinga said.

Since biodiesel fuel can also be made from animal fat, Huisinga urged Ageratec to build a manufacturing facility near Willmar, noting the presence there of the Jennie-O Turkey plant.

Minnesota has the potential to be a clean-tech hub, said Dan Carr, CEO of the Collaborative, which brings together local financiers and technologists through forums and networking. Not only is the state home to agribusiness giant Cargill Inc. and Xcel Energy, the country's largest producer of wind power, Minnesota also boasts a skilled workforce that could prove attractive to Swedish clean-tech firms looking to crack the U.S. market, he said.

"We have all of the components that one would want for a cluster," Carr said. "Having the Swedish companies come and set up U.S. operations [here] clearly helps."

Minnesota may also have the ultimate advantage: its ethnic and cultural ties to Sweden.

"Many companies in Sweden are small and afraid to do business in the U.S.," Lofgren of AFAB said. "This business climate is more familiar in Minnesota than Texas and Colorado and anywhere in the United States. We heard a number that 35 percent of people in Minnesota are related to Scandinavian people. We feel a little bit like home when we go to Minnesota."

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