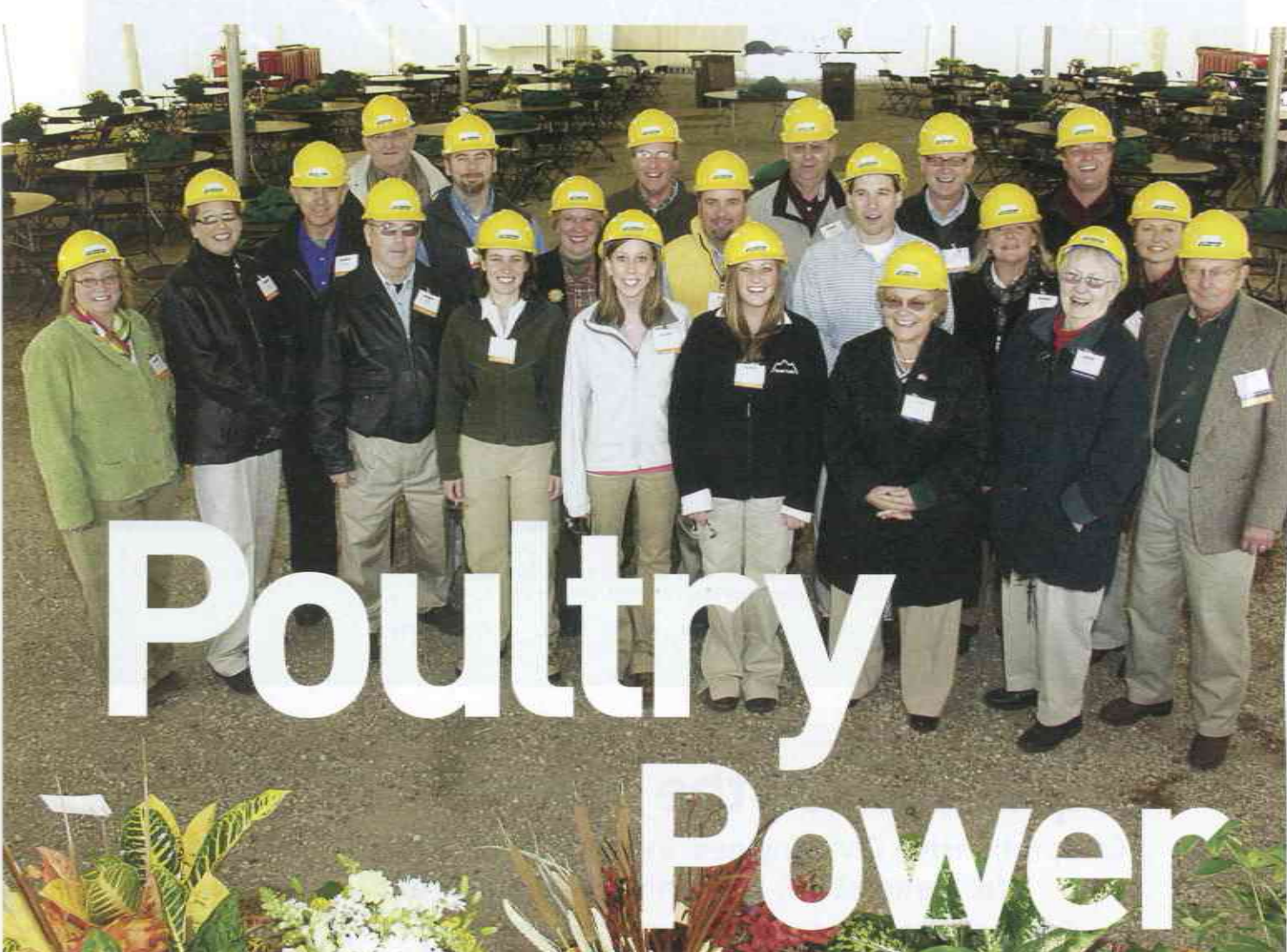


Backed by experience in the UK and a successful plant in Minnesota, this company is bringing another renewable energy option to the US.



Poultry Power

The US poultry industry is a global success story. It feeds millions, provides jobs, and creates fertilizer. Thanks to Fibrowatt, it can add another feather to its cap—energy producer.

Founded in 2000, Fibrowatt is owned by holding company Homeland Renewable Energy. Its roots can be traced to the UK, where the family of Fibrowatt's CEO and co-founder Rupert Fraser built the world's first three poultry litter electrical plants in the 1990s.

The company's first American project began development in 2000 in Minnesota. Construction began on the Benson, Minn. plant in December 2004, financed on the basis of a sale-leaseback with an issue of \$200 million of long-term project finance debt taken up by institutions including

Prudential, John Hancock, and Metropolitan Life. The project completed construction two and a half years later and has operated under Fibrowatt's control for nearly two years.

"The plant is running extremely well. It is a 55 MW turkey-litter fueled power plant that burns more than 500,000 tons of turkey litter per year alongside other bio-mass," said Fraser. "Minnesota is the leading turkey-producing area in the US and therefore the world."



Rupert Fraser,
co-founder and CEO

Request for proposal

Locating these plants near to major poultry producing centers is critical to the model's long-term success. But Fibrowatt is



sensitive to the needs of the communities it would like to enter. Although it is exploring potential future projects in Arkansas, Georgia, Maryland, Mississippi, North Carolina, Alabama, Texas, and other states, the company's philosophy is to only go where it's invited.

"Our projects bring benefits to the poultry industry and to rural infrastructure, communities, and the environment, which means when elected officials and local community representatives see what we do and talk to the existing neighbors of our projects, they decide they want us as a neighbor," Fraser said.

In Minnesota, 35 communities competed to have the company locate the Minnesota plant, known as Fibrominn, in their area. That occurred after a number of communities sent representatives to the UK to meet local residents, mayors, and farmers located near the UK plants to determine if those plants were good neighbors.

Fraser said the same is true in North Carolina, the state where Fibrowatt has the strongest interest toward construction of its next plant. During 2008 and 2009, the company has been assessing potential sites, and it has selected Sampson County, Surry County, and Montgomery County for three potential plants in the state, with construction on the first one expected to start in late 2010.

As one of the leading poultry producing states in the country, North Carolina grows nearly as

many turkeys as Minnesota and a large number of chickens. Fraser said it probably has as much poultry litter as any other area in the world, meaning there's enough to fuel more than one, and possibly as much as three, projects of Fibrowatt's typical size of 40 MW to 50 MW. Fifty communities invited the company to consider locating a plant in their back yard, and the state legislature passed a renewable energy standard with a specific poultry-litter-to-power requirement covering approximately 130 MW of poultry litter power to be purchased by state utilities.

Fibrowatt aims to acquire 50% of the poultry litter in the areas it operates, an amount that is generally in surplus—the rest is still used as fertilizer by local farmers. The litter is transported using significant improvements to the biosecurity of the poultry industry, which is important because the poultry industry is highly focused on bio-security, hygiene, and disease control. Fibrowatt brings the litter to its plant and stores it inside a negative pressure area in a controlled fuel storage hall.



"Smells cannot escape. Our neighbors confirm they are not able to smell our power plant past our site boundary. We have been told that our operations helped reduce odors from poultry litter in the area," said Fraser. "There is still some being applied as fertilizer, but there is no longer a need to stockpile the surplus."

Essentially, Fibrowatt provides three separate benefits: a



bio-security and waste management service to the poultry industry, renewable energy produced from a local resource, and a reduction in groundwater pollution from surplus land application of nutrient-rich fertilizer.

Future potential

On a county-by-county basis, Fibrowatt has identified 15 locations across the US where plants could be built, with an average size of just under 50 MW. That represents a significant quantity of renewable energy, clustered in the Southeast, an area that historically had a lower share of available renewable energy resources.

"In the Southeast, the main fuel resource is biomass. The main industries are animal husbandry," Fraser said. "If you look at where chickens are grown, it is all Southeastern states. There is plenty of scope for the Southeast to benefit from this type of renewable energy."

The plants also have the benefit of limiting the environmental impact of intensive animal farming, making it more sustainable by taking surplus fertilizer nutrients out of watersheds where they are out of balance. In addition, Fraser said the plants have a minimal impact on air quality because chemicals emitted when poultry litter is burned using Fibrowatt's

extensive pollution control equipment are similar to what is released into the environment when poultry litter used as fertilizer decays in the fields. Despite spending significant time explaining its environmental benefits to local communities, the company has run into some resistance from those concerned only about air quality issues, but Fraser is pragmatic about the situation.

"I acknowledge that some people are concerned with a single issue and fight anyone who produces anything that goes into the air," he said. "I feel they would support us if they were to consider the whole picture; they would see we are curing an out-of-balance water pollution problem, recycling nutrients, and reducing greenhouse gases."

PFLIPSEN TRUCKING

Fibrominn LLC has played a big part in the success of Pflipsen Trucking LLC. We are greatly privileged to have been a part of the green renewable energy movement since 2007. Fibrowatt has a great way of combining farming with energy for a green tomorrow.

Although the company is actively working on projects in more than 10 states, the process is slow, as many community stakeholders are waiting to see what policy changes will come out of Washington and affect the renewable energy world. But Fibrowatt's long-term plans include



diversifying into marketplaces such as Brazil, as well as exploring other renewable energy projects using its expertise in wood-fired power projects.

"Whenever you are changing the way things have been done, you must keep focused on the fact that what you're doing is right. We are present in a particular community because the citizens there and the agricultural interests in the state want us," said Fraser. "As long as we are responding to a genuine need, I believe there is a big opportunity to grow a business." 🌻

—Eric Slack

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