



Konecranes Supplies Four Automated Cranes to First Poultry Litter Fueled Power Plant in United States

Features and Benefits

Worldwide experience with this unusual customer application

Ability to design and deliver special features for highly corrosive operating environment

In-house automation capability to deliver a turnkey product

Industry Group: Crane Manufacturers Association of America (CMAA)



The Opportunity

A year-round stream of poultry litter generated by Benson, Minnesota turkey raising operations totaling 700,000 tons each year combined with the tradition of spreading litter on agricultural fields as fertilizer had begun to impact water quality in central Minnesota. Also, litter could not be disposed of during the winter months. Turkey raisers, an important part of the Minnesota economy, needed a year-round disposal alternative that was better for the environment.

The Solution

Minnesota's solution was a landmark power plant project that converted Benson's annual output of poultry waste and bedding into 55MW of electricity. Fibrowatt, the operator of several groundbreaking poultry-litter biomass power plants in the UK, brought the process to Benson. The new plant, known as Fibrominn LLC, now supplies power to 55,000 households, reduces litter volume by 90% and resolves a serious environmental concern.

Konecranes, crane supplier to Fibrowatt's inaugural UK plant, was also the supplier of choice for this project, which is the first poultry litter-fueled power plant in the United States. Konecranes had a strong track record in the waste-to-energy field, with a portfolio of projects completed throughout Europe,

Asia, and the Americas.

Waste-to-energy cranes typically operate in the harshest of environmental conditions. Konecranes supplied four fully automated 20-ton CMAA Class “F” cranes positioned on two runways over bays that receive 3,260 tons of poultry waste five days per week. Each of the PLC-equipped cranes spans 70 feet and is linked to a control room and a PC, which controls motions of the bridge, trolley and hoist.

The cranes were optimized with special features for the highly corrosive environment. Positive pressure inside the electrical cubicles prevents dust from entering. Walkways are constructed of grating to prevent dust accumulation, and stainless steel fasteners are used throughout. The four cranes are identical to standardize service and reduce the number of spares required.

And the customer says

“This fuel doesn’t make for an easy working environment– it’s a very heavy duty cycle, and the cranes work very hard,” says David Frith, product engineering manager for the Fibrominn plant.

“Software is important as well. The fuel is variable, yet we must supply a consistent product to the boiler for optimum power generation. The ability to know what you’ve brought in and track it through the fuel storage is quite valuable. KCI Konecranes had experience with this material from Fibrowatt’s first UK plant. Secondly, they paid a lot of attention to what we asked, and listened to what we told them. Because the UK plants are effectively the only plants in the world fueled by this material, these are lessons you can’t learn anywhere else.”

Frith also said that Konecranes’ in-house automation capability was a critical factor. “The benefits of working with one company who could design both the cranes and the automation without involving another vendor were clear to us. Their experience with dockside container cranes gave them a head start. Software is so important– if you have to start from scratch glitches are inevitable. We felt it was better to have something we could adapt.”



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