



# Sweet Turnaround

## Aventine Restarts 110-MMGY Aurora West on Beet Sugar

Mark Beemer has been busy making changes at Aventine Renewable Energy since he took over as chief executive officer in December 2012, renovating, repairing, and remaking Aventine's ethanol production plants.

When Beemer joined Aventine, the company had six ethanol plants. Only the wet mill plant in Pekin, IL, was running and it was operating at 80% capacity.

Beemer brought in a new management team soon after taking over and Aventine's board directed the new team to develop a two-year strategic plan targeting key investments that needed to be made to insure the survivability of the company, which had been on a financial roller coaster since it was formed in 2006.

In an interview at the 110-million-gallon-a-year (MMGY) Aurora West ethanol plant in Aurora, NE, Beemer outlined the efforts that led to Aventine's turnaround, including a \$30 million renovation plan being carried out at the company's two ethanol production plants in Pekin, IL, and an expenditure of \$17 million in efficiency improvements at Aurora West and Nebraska Energy, LLC (NELLC), a 45-MMGY-ethanol plant next door in Aurora.

"Rejuvenation of the company has been wildly successful," Beemer told *BioFuels Journal*. "We shattered Aventine's old production record in October 2013, broke the production record again in December

2013, and broke it again in April 2014."

None of the extensive renovations has attracted as much attention, however, as Aventine's decision to develop its sweet tooth for ethanol processing.

In December, Aventine's board of directors decided to begin full production at the Aurora West plant, which was shut down shortly after it was completed in December 2010.

### Sweet Restart

In an effort to reopen the Aurora West plant economically, Aventine bid on and was awarded 165,250 tons of sugar beet sugar for \$12 million, which was enough to fill 1,650 railcars that

the government owned in Nebraska, Wyoming, and Colorado. Aventine bought the most sugar among the three ethanol producers that bid on and purchased the sweet commodity.

The sugar was owned by the U.S. Department of Agriculture (USDA) as part of its Feedstock Flexibility Program, which permitted Aventine and the other two ethanol produc-

## Facility Feature

**Aventine Renewable Energy**  
309-347-9222 | Pekin, IL  
[www.Aventinerei.com](http://www.Aventinerei.com)

Mark Beemer, CEO  
Brian Steenhard, CFO  
Mike McFate, Sr. VP Operations  
John Valenti, VP Operations  
Chris Nichols, Secretary Counsel  
John Shriver, Director of Human Resources

**Employees:** 285  
**Capacity:** 360 MMGY (4 plants)  
**Feedstocks:** Beet sugar, corn



Mark Beemer

ers (Pacific Ethanol, Inc. and Central Indiana Ethanol, LLC) to buy the sugar at below-market prices at government auctions. The USDA had taken ownership of the sugar when processors forfeited the commodity in lieu of repaying their loans from the federal sugar program. The USDA is required to auction the sugar it owns for non-food uses, such as ethanol production.

"It was an entrepreneurial move on our part to take the sugar," Beemer said. "It was a simple way for us to reopen the plant, without having to grind corn or produce dried distillers grains (DDGs)."

The sugar was railed from the warehouses where it had been stored to Giltner, NE and Hampton, NE and then trucked 14.5 and 6.5 miles, respectively, to Aurora.

Aurora West started processing the beet sugar in late February 2014, Beemer noted, but it didn't start producing extensive quantities of ethanol until May and June 2014, because the plant hadn't been properly shuttered.

The first railcar of sugar beet ethanol left the plant on May 28.

Beemer said Aurora West will run sugar through September and then begin a gradual transition to corn. "We're testing the equipment for processing corn now," Beemer said. The switch to corn will come just as harvest begins of what is expected to be a record crop that will send corn prices to lows not seen for several years.

### More Changes

But sugar was just the sweetener for other changes Beemer was bringing to Aventine.

"When I was named chief executive



*Aventine CEO Mark Beemer stands alongside a pile of beet sugar stored at the Aurora West ethanol plant for processing. The plant will process sugar through September.*



*New Rice Lake Weighing Systems truck scales, with a streamlined accounting system from Intelligo and an automated truck management system from CompuWeigh, have been installed by Aventine at Aurora West and NELLC.*

officer, I was charged with fixing the operations of the company," Beemer said. In April 2013, Aventine's board of directors approved the management team's \$35 million capital expenditure plan to make major renovations and updates at the two Aurora, NE plants and two plants operated by Aventine in Pekin, IL.

The company raised \$35 million by June 2013 to pay for the changes, with \$10.5 million of that earmarked for working capital.

### Significant Renovations

The \$17 million that Aventine has spent on significant renovations and maintenance work at the 110-MMGY Aurora West plant and the 45-MMGY NELCC facility include:

- Updating four truck dumps and four ethanol rail loadouts, along with a streamlined accounting system from Intelligo and an automated truck management system from CompuWeigh. According to Tim Ciucci of CompuWeigh Corp., Woodbury, CT (203-262-9400), the company has installed a SmartTruck system that consists of an RFID-based truck management and ticketing system that interfaces to Aventine's back-end accounting system, Intelligo. "What is unique to this at both plants is that they installed a traffic gate prior to the dump pits," Ciucci said. "If a truck's grain does not pass grade, the gate will not open, and the truck must leave the plant. I do not know of any other ethanol facility that has taken automation to this level with regard to grain passing grade."

CompuWeigh also installed its SmartFlow loadout system at both Aurora plants. "We are interfacing to their AccuLoad flow meters and recording data through our GMS software," Ciucci said.

"We then once again push the completed transaction information to Intelligo."

- The CompuWeigh equipment is part of two new truck scale systems from Rice Lake Weighing Systems, Rice Lake, WI (715-434-5136). Rice Lake also supplied three new truck scale systems at both of Aventine's Pekin ethanol plants.

"With both Aurora plants operating with inbound corn and outbound WDGs and DDGs, we had to increase the efficiency of receiving the corn and outbound loads," Beemer said. The two Aurora facilities have 300 trucks entering and exiting the facilities daily.

- Adding a 1.55-million-bushel steel

*"I do not know of any other ethanol facility that has taken automation to this level with regard to grain passing grade."*

**- Tim Ciucci, CompuWeigh**

tank from Behlen Mfg. Co., Columbus, NE at Aurora West.

- Enlarging the wet distillers grains pad at Aurora West to store four days of production.

- Adding 750,000 bushels of steel corn storage by Behlen and a 20,000-bushel grain leg by Intersystems, Omaha, NE at NELLC.

- Building a new, two-story grain grading lab with Seedburo Equipment grain grading equipment and new truck probes from Union Iron, Decatur, IL that are linked to the CompuWeigh system.

- Building new roads and widen- ►





*An extended pad for additional WDGs storage will be built at Aurora West to hold four days of production.*

ing existing roads at both sites.

In addition to the work at Aurora West and NELLC, Aventine has spent \$30 million upgrading and renovating the wet mill plant in Pekin, IL. Those projects include:

- A \$13.2 million expenditure to replace three 70-year-old coal-fired boilers with two new, large high-pressure cogeneration natural gas boilers purchased from the Indeck Power Equipment Co., part of the Indeck Group of Compa-

nies, located in Wheeling, IL.

The two new Indeck A type watertube package boilers each produce 250,000 pounds per hour (PPH) of steam flow at 430 pound-force per square inch gauge (PSIG) operating pressure and 565 degrees Fahrenheit while meeting modern low nitrogen oxide (NOx) Maximum Achievable Control Technology (MACT) emission limits, according to Gary Blazek, director of business development at Indeck.

- A new grain dumping facility capable of handling 60 trucks an hour with new 30,000-bushel-an-hour grain legs from Intersystems or the ability to unload 110-car unit trains from BNSF in 10 hours.

- A new 38-inch Alfa Laval starch separator machine for \$1.4 million that replaced a 30-year-old machine.

At the Pekin dry mill plant, \$2.5 million has been spent on upgrades and renovations, Beemer said, including repairing the thermal oxidizer refractory, installing new molecular sieve beads and laterals, rebuilding all the centrifuges, and completing significant repairs to all fermenters, agitators, and pumps.

Another big change came in March 2014, when Aventine sold its 110-MMGY ethanol plant in Mt. Vernon, IN, to Valero Renewable Fuels Company LLC, a wholly-owned subsidiary of Valero Energy Corp., for \$34 million.

## Plant History

Aurora West is a 110-MMGY ethanol plant built by Fagen, Inc. with a Delta T design on a 75-acre site one mile west of Aurora, NE. After starting construction of the Aurora West plant in 2008, Aventine produced ethanol there only briefly because of the economic recession, the company's bankruptcy, the relatively high price of corn, and poor margins in the ethanol industry. Aurora West reopened at the end of May using beet sugar.

It is located adjacent to the NELLC plant, which has an annual production capacity of 45 MMGY. It began production in 1985 as a Vogelbush plant and was moved to Aurora, NE, from Louisiana to take advantage of economic incentives for ethanol production granted by Nebraska's state government.

In mid-June, NELLC was restarted using corn as its feedstock.

The Pekin, IL dry mill ethanol plant is



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a Fagen-built, 57-MMGY facility that also produces 167,000 tons of DDGs and wet distillers grains (WDGs).

The Pekin wet mill originally was built in 1899 as a sugar processing facility. It was converted from producing corn starches and sweeteners to ethanol in 1981. It has a capacity of 100 MMGY and produces ethanol, industrial-grade alcohol, fuel-grade alcohol, corn gluten feed, corn gluten meal, corn germ, wet distillers grains, and yeast.

The Pekin, IL site consists of 200 acres with a railyard that can hold approximately 200 railcars.

Aventine also has an idle ethanol plant in Canton, IL, with a capacity of 38 MMGY, that was purchased by Aventine on Aug. 6, 2010, for \$16.5 million from New CIE Energy Opco, LLC, which was doing business as Riverland Biofuels.

### Company Organization

Aventine was organized in February 2006 as a publicly-traded company on the over the counter (OTC) market. It filed for reorganization under the Chapter 11 U.S. bankruptcy code in March 2009 and emerged from bankruptcy in March 2010. It was taken private in September 2012.

Aventine has a total of 285 employees and a \$13.5 million annual payroll. The Aurora plants have 75 employees hired since December 2013, with an annual payroll of \$5 million.

The Pekin plants have 166 employees who are represented by the United Steelworkers Union and a total workforce of approximately 210 employees, making it one of the largest employers in the Pekin area. Aventine has had a huge impact on the Pekin community, Beemer said, with several employees being the third or fourth generation of their families to have worked at the wet mill.

### Feedstock

Beet sugar has been processed at the Aurora West plant since May and corn at NELLC since mid-June.

### Marketing and Co-products

All ethanol is marketed by Aventine to end users. Aventine's Nebraska-made ethanol is shipped by rail to Texas, Arizona, the Pacific Northwest, and California. The Pekin plants' ethanol is marketed to the East Coast.

DDGs and WDGs from NELLC are sold to cattle feeders within a 50-mile radius of the plant.

Corn is procured by Aventine at its Pekin headquarters and Aventine sells the ethanol and DDGs produced by its plants.

### Capacity

Aurora West produces 110 MMGY of ethanol and 334,000 tons of DDGS a year. NELLC produces 45 MMGY of ethanol and 140,000 tons of DDGS.

### Transportation

The Aurora plants have unit-train and single-car manifest capabilities. Pekin's two facilities are multi-modal with truck, rail, barge, and container capabilities and access to eight railroads.

### The Future

Beemer said that the future of ethanol is as bright as it has



*A new, 1.55-million-bushel steel bin will be built at Aurora West by Behlen Mfg. Co. adjacent to this 550,000-bushel grain tank.*

ever been as a result of the maturing ethanol industry. There is a fixed ethanol capacity in the industry and much greater corn production as a feedstock because of genetic engineering and favorable returns for farmers who grow corn. The result, he said, is that farmers in the Corn Belt are producing the most economically-viable feedstock for the ethanol industry. "There is a robust export program as a result of ethanol being the most competitively-priced octane enhancer in the world and the United States has been a large exporter to Brazil and other countries who produce ethanol," he said.

*Jerry Perkins, editor*

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