Glasrud, FHR Pine Bend refinery focus on new innovations

Refinery currently constructing $150 million CHP system

By: ANDREW WHITE, Senior Editor

According to Geoff Glasrud, vice president and manufacturing manager of Flint Hills Resources' (FHR's) Pine Bend refinery in Minnesota, construction is well underway for a new $150 million state-of-the-art Combined Heat and Power (CHP) system that will allow the refinery to operate more efficiently. The CHP system will use natural gas and a heat recovery process to produce approximately 50 megawatts of electricity, or roughly 40 percent of the energy required to power the refinery. The project also contributes to the State of Minnesota's goal to double the amount of power generated from CHP in the state. The system is expected to be operational later this year.

"The CHP project will help maintain the long-term viability of our business and benefit the environment," Glasrud said. "We need to be extremely efficient in every aspect of our business to remain competitive well into the future."

For more than 60 years, the Pine Bend refinery has played a major role in producing transportation fuels used throughout the Midwest, including most of Minnesota's gasoline, diesel fuel and jet fuel. The refinery also produces propane, asphalt and heating fuels, as well as the chemical building blocks that are essential for products such as plastics, fertilizers, medicines and synthetic materials.

FHR is a refining, pipeline, chemicals and biofuels company with operations primarily in Texas and the Midwest. It is a subsidiary of Koch Industries, a Kansas-based company that got its start more than 75 years ago in the refining industry. The Pine Bend refinery began operations in 1955 with a processing capacity of 25,000 barrels per day.

"The refinery is a landmark like no other in Minnesota," Glasrud said. "The tall columns, bright lights at night and steam clouds on cold winter days can be seen from miles away. Less visible are the more than 1,000 men and women who work hard each day to safely and efficiently make transportation fuels and other products people need."

FHR's new $150 million state-of-the-art Combined Heat and Power (CHP) system will allow the Pine Bend refinery to operate more efficiently.

Glasrud is locally grown, having graduated from Hastings High School, which is less than 15 miles from the Pine Bend refinery. After high school, he attended the University of Minnesota, where he earned a bachelor's degree in chemical engineering. Glasrud's professional career with the FHR Pine Bend refinery started in 1995 shortly after he graduated. Throughout the years, he has held a number of positions at the refinery that have involved process engineering, technical leadership and operations leadership. He's also served in leadership positions at FHR's refinery in Corpus Christi, Texas.

"Today, as vice president and manufacturing manager of FHR's Pine Bend refinery, I'm responsible for overseeing day-to-day operations, including production, reliability, compliance and, most importantly, environmental, health and safety," Glasrud said. "I've been in my current role for two years."

Glasrud emphasized there are many important skills a refinery leader must have, including technical skills such as problem solving, decision making and marginal analysis, but the most critical skills lie in communication and leadership capabilities.

"The speed and magnitude of our site's advancement lies in the power of our people to run the business as owners," Glasrud said. "Effectively motivating our people requires leaders to connect people to a vision of where the plant is headed, opportunities that create the most value and how their work is meaningful. In addition, leveraging the power of employees requires creating an environment for healthy challenges and innovations and fostering a mindset that there is always a better way. For me, these skills are all about better applying Market-Based Management®, our business philosophy that replicates the attributes of a free society in our business."

The refinery's top priorities

According to Glasrud, protecting the environment and keeping people safe are always the refinery's top priorities. Its dedicated workforce has helped the Pine Bend refinery become one of the safest, cleanest and most efficient refineries operating in the U.S., and it continues to improve.

"Pine Bend has decreased OSHA-recordable injuries by more than 70 percent in the past 15 years," Glasrud said. "We are also leaders in process safety, and we are using the latest in technology, including virtual reality training, to help avoid serious incidents and keep our people safe."

In 2017, the FHR Pine Bend refinery received two awards for strong rail safety performance: the Chemical Safety Excellence Award from CSX Corp. and the Thoroughbred Chemical Safety Award from Norfolk Southern Corp. In 2016, the refinery was recognized by the Association of American Railroads as an exemplary shipper. In 2014, the Pine Bend refinery became the first facility in the country to be certified as a PRO-10 worksite.

Expansion and investment

The Pine Bend refinery has made nearly $2 billion in investments in the past eight years to improve utilization, reliability and overall efficiency. According to Glasrud, this has resulted in an increase in production while also reducing permitted emissions. Today, the Pine Bend refinery operates near its nameplate capacity of approximately 340,000 barrels per day.

"Since 1997, the refinery has lowered emissions of traditional criteria pollutants by approximately 65 percent while also increasing production," Glasrud said. "The refinery has reduced total on-site emissions in 11 of the past 15 years. Our emissions per barrel are approximately 20-percent lower than other U.S. refineries."

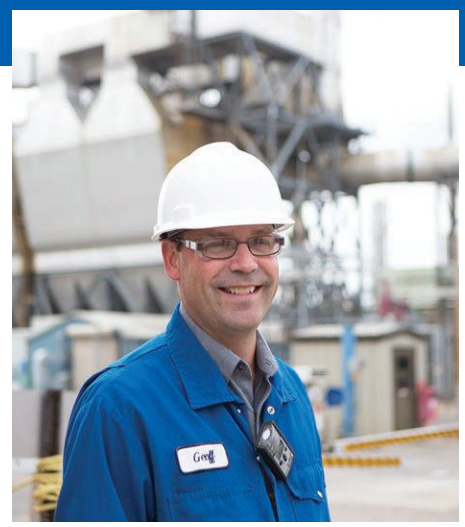
Glasrud expects the refinery to continue to make investments that improve the efficiency of its operations.

"We will also continue to focus on innovation," he said. "We are using technology to improve every aspect of our business. Advancements in technology have always been game-changers, but those advancements have never come more quickly than they are today. Breakthroughs in artificial intelligence and automation not only promise to change the game but also have the potential to redefine the very nature of our business. The wider use of automation, data analytics, smart-bot technology and other technological advancements is transforming our businesses, improving our competitiveness and preparing us for whatever opportunities and challenges lie ahead."

Supporting Minnesota

Glasrud and the Pine Bend refinery are proud to support many of the programs and organizations that contribute to the high quality of life in Minnesota. The refinery contributes time, talent and dollars to a variety of organizations focused on the areas of environmental stewardship, science education and safety.

"Some of our most notable community partnerships include being the title sponsor of the Flint Hills Family Festival, in partnership with the Ordway Center for the Performing Arts, since 2001; a founding sponsor of Project Green Fleet, a collaborative effort with Environmental Initiative to install pollution-control equipment in thousands of Minnesota school buses, heavy-duty trucks and other diesel vehicles; and a 20-year partnership with the Science Museum of Minnesota, which has allowed more than 150,000 Minnesota students to experience interactive school assemblies and take memorable sleepover field trips to the museum," Glasrud said. "Two of the main industry associations we are associated with are the American Fuel & Petrochemical Manufacturers and the Association of Oil Pipe Lines. Knowledge-sharing and advancing industry best practices are key reasons we participate in them." ●



Geoff Glasrud
Vice President and Manufacturing Manager
Flint Hills Resources Pine Bend Refinery

Flint Hills Resources' Pine Bend Refinery

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www.pinebendrefinery.com

Employees: More than 1,000 full-time employees

Products: Gasoline, diesel fuel, jet fuel, asphalt, petroleum coke for electric power generation, sulfur for manufacturing medical products, propane and butane, avgas for small aircrafts and fertilizer

Size: Approximately 4,700 acres