SIEMENS

Press

Houston, October 24, 2018

Abengoa selects Siemens' compressor train for renewable fuels plant in Nevada

 Fulcrum's municipal solid waste-to-fuels plant will contribute to a sustainable future

Abengoa, a Spanish engineering, procurement and construction (EPC) contractor, recently selected Siemens to supply a compressor train for Fulcrum BioEnergy's Sierra BioFuels Plant that will use gasification technology to produce low-carbon fuels from municipal solid waste. The plant will be located in Storey County outside of Reno Nevada and is expected to produce approximately 11 million gallons of biofuel per year that will be used by the aviation industry.

Fulcrum's Sierra BioFuels Plant will divert municipal solid waste that would otherwise be landfilled and will convert it into low-carbon transportation fuel. The fuel produced at the plant will reduce carbon emissions by more than 80%.

Siemens scope of supply includes a steam turbine, three synthesis gas

Dresser-Rand DATUM compressors, and balance of plant equipment including
coolers, filters and valves. The equipment is expected to ship to Fulcrum's plant in
mid-2019.

Synthesis gas, which is created from the gasification of municipal solid waste, needs to be compressed to high pressures. The highly efficient DATUM

Siemens AG Communications Head: Clarissa Haller

Reference number: PR2018100035PGEN

Werner-von-Siemens-Straße 1 80333 Munich Germany

Unrestricted Page 1/3

Siemens AG Press Release

compressors, driven by Siemens steam turbine, reduce the plant's demand for electricity.

Additionally, the DATUM compressor's modular bundle assembly enables rapid change-out of rotating elements in one cartridge-style unit. The modular bundle allows a DATUM module to be replaced in the field, typically in less than a day – compared to a traditional design that could require a plant to shut down for more than five days – which greatly reduces maintenance time and improves plant availability.

"Abengoa selected Siemens for this important project because of our unique technology offering and proximity to the site," said Matthew Chinn, Executive Vice President Sales for Siemens Oil & Gas. "The DATUM compressors will be built and tested at our world-class manufacturing operation in Olean, New York, facilitating quick delivery and convenience for inspection and maintenance," Chinn added.



Above: Multiple DATUM compressors, like those shown in this photo, will compress synthesis gas to high pressures.

This press release and press picture are available at www.siemens.com/press/PR2018100035PGEN

For further information on **DATUM compressors**, please see: https://sie.ag/2uJ4bFG

For further information on steam turbines, please see: https://sie.ag/2NZ6uxf

Siemens AG Press Release

Contact for journalists

Janet Ofano

Phone: +1 803-389-6753

Email: janet.ofano@siemens.com

Andrew Gumbiner

Phone: +1 202-375-9742

EMail andrew.gumbiner@siemens.com

Follow us on Twitter at: www.twitter.com/siemens press and @Siemens Energy

Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for 170 years. The company is active around the globe, focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of efficient power generation and power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. With its publicly listed subsidiary Siemens Healthineers AG, the company is also a leading provider of medical imaging equipment – such as computed tomography and magnetic resonance imaging systems – and a leader in laboratory diagnostics as well as clinical IT. In fiscal 2017, which ended on September 30, 2017, Siemens generated revenue of €83.0 billion and net income of €6.2 billion. At the end of September 2017, the company had around 377,000 employees worldwide. Further information is available on the Internet at www.siemens.com.