Fuels Industry Newsletter

February 2014

“West Texas Gas to Supply Carbon Sciences' First Gas-to-Liquids (GTL) Plant”

Press Release, *The Wall Street Journal, Market Watch*, January 28, 2014

Company Signs Letter of Intent With Major Distributor to Provide up to 30,000 Mcf per Day of Natural Gas

SANTA BARBARA, CA, Jan 28, 2014 (Marketwired via COMTEX) -- Carbon Sciences Inc., provider of a complete solution for transforming abundant and affordable natural gas into clean burning gasoline and other transportation fuels, today announced that it has signed a letter of intent with West Texas Gas to supply up to 30,000 Mcf per day of natural gas for the company's planned gas-to-liquids (GTL) plant.

"We have decided to build our first GTL plant in Texas and West Texas Gas has agreed to supply all the natural gas required to feed this new plant," said Trey Smith, the company's Executive Vice President. "We are very fortunate to have a major distributor step forward and be willing to commit resources at this time. This will allow us to immediately proceed with our project."

West Texas Gas (WTG), headquartered in Midland, Texas, has core businesses in natural gas distribution operations, natural gas transmission services, gas gathering/processing, and natural gas liquids transmission services. WTG owns and operates approximately 5,192 miles of Natural Gas Distribution mainlines and serves 28,108 customers within the states of Oklahoma and Texas.

WTG is a local distribution gas company in twenty-nine (29) incorporated Texas cities and twelve (12) incorporated Oklahoma cities. WTG owns and operates approximately 1,680 miles (non-contiguous) of Natural Gas Transmission pipelines within the states of Kansas, Louisiana, New Mexico, Oklahoma and Texas. WTG owns and operates 528 miles of gathering pipelines within the states of Kansas, Louisiana, Oklahoma and Texas. WTG owns and operates approximately 67.4 miles (non-contiguous) of Hazardous Liquids (NGL) Transmission pipelines within the state of Texas.

According to Kendall Carew, the company's Vice President of Business Development, "With West Texas Gas serving as our supplier of natural gas, we can now finalize arrangements to acquire a plant site. We have identified a number of attractive possibilities and expect to make a final decision within the next 60 days."

Carbon Sciences previously announced its plan to build a miniGTL plant, designed in a modular nature, which will allow the matching of the equipment to the quantity of natural gas, as well as allow for portability if gas flow declines over time. The company estimates that a miniGTL plant producing approximately 1,000 barrels per day of transportation fuel can be contained in as few as 60 modules. A modular design enables rail car or truck transportation and installation to remote sites with limited infrastructure. Modular construction additionally will allow the company to manufacture in low cost production centers and then transport the modules to the gas field, resulting in a substantial cost savings over on-site construction.

Unlike large scale GTL plants, such as those developed by Royal Dutch Shell and Sasol that require large gas fields, a miniGTL plant in the 1,000 to 3,000 barrel per day range can be built to monetize small to medium size fields, which account for nearly 40% of gas fields in the world.

Read more: http://www.marketwatch.com/story/west-texas-gas-to-supply-carbon-sciences-first-gas-to-liquids-gtl-plant-2014-01-28

"Gas2 pilot plant produces hydrocarbon liquids in GTL technology test success"

Oil Voice, January 29, 2014

Gas reforming company Gas2 has achieved a second significant milestone at its 3 bpd (barrels per day) Wilton Research Centre pilot plant in Teesside, UK as it develops a new generation of natural gas-to-liquids (GTL) process technology which has the potential to deliver lower cost solutions for small scale plants.

By successfully commissioning and starting-up the Fischer Tropsch (FT) reactor, using syngas produced in the syngas reactor, the company has produced hydrocarbon liquids. The test run success follows that of the syngas reactor which has been operated successfully at a range of operating pressures, showing minimal loss of conversion at higher pressures.

Gas-to-liquids (GTL) is a two-step petro-chemical process to convert natural (methane-rich) gas into liquid hydrocarbons such as synthetic crude oil (syncrude). The first step produces synthesis gas (syngas) from a combination of natural gas and oxygenate. Step two comprises FT reactor units which convert the syngas into GTL fuels.

Gas2's GTL process is a simplified system compared with other available GTL processes, with one potential advantage being the elimination of the intermediate compression stage between syngas and FT reactors, which are an expensive part of other systems. This could play a significant role in driving down capital and operating costs. Operating syngas reactors at higher pressures with minimal loss of conversion is key to intermediate compression elimination.

Read more:
http://www.oilvoice.com/n/Gas2_pilot_plant_produces_hydrocarbon_liquids_in_GTL_technology_test_success/dc21ea570bb1.aspx#gsc.tab=0

“Primus Green Energy Patent Application for Gas-to-Liquids Technology Allowed by USPTO”

PR Newswire, February 5, 2014

Patent secures IP around STG+, company's novel single-loop, thermochemical liquid fuel synthesis process

HILLSBOROUGH, N.J., Feb. 5, 2014 /PRNewswire/ -- Primus Green Energy Inc., an alternative fuel company that converts natural gas and other feedstocks directly into drop-in transportation fuels and solvents, announced today that the company's patent application1 covering its STG+ liquid fuel synthesis technology has been allowed by the U.S. Patent and Trademark Office (USPTO).

STG+ produces high quality, cost-effective, drop-in liquid transportation fuels such as gasoline, diesel and jet fuel directly from syngas derived from natural gas and other carbon-rich feedstocks in a single-loop process. Primus is well positioned to capitalize on favorable gas-to-liquids (GTL) industry fundamentals, including the low cost of natural gas, through its STG+ technology.

STG+ represents a cost breakthrough for the GTL industry, as it demonstrates compelling economics at scales of less than 6,000 barrels per day. The patented process is far simpler and more efficient than existing GTL technologies as it transforms syngas to liquid fuels with only one condensation step and also recycles untransformed gases. These efficiencies result in a high-yield process – STG+ can convert one MMBtu of natural gas into more than five gallons of 90+-octane, drop-in gasoline.

"STG+ is a new, proprietary thermochemical GTL process that fundamentally transforms the efficiency and economics of liquid fuel synthesis technologies," said Robert Johnsen, CEO of Primus Green Energy. "The allowance of this patent application validates the novelty of the technology we have developed and proven at scale in our research facilities and commercial demonstration plant here in Hillsborough. Further, it greatly strengthens our intellectual property portfolio, an important step as we look toward construction of our first commercial GTL plant."

In October 2013, Primus successfully commissioned its 100,000 gallon-per-year natural gas-to-gasoline demonstration plant. A recently concluded independent engineers report found that both catalyst performance and STG+ system economics exceeded expectations during demonstration plant operation. The company is now working toward construction of its first commercial plant, which is expected to produce 27.8 million gallons per year of drop-in gasoline from natural gas. The company expects to break ground on the plant in 2014.

Final issuance of the patent covering the STG+ technology is expected in March 2014.

Read more: http://www.prnewswire.com/news-releases/primus-green-energy-patent-application-for-gas-to-liquids-technology-allowed-by-uspto-243682641.html

Related article available *

* "US approves Primus Green Energy patent for gas-to-liquids technology"

Hydrocarbon Processing, February 7, 2014

Read more: http://www.hydrocarbonprocessing.com/Article/3306703/US-approves-Primus-Green-Energy-patent-for-gas-to-liquids-technology.html

"New ethanol industry blooms in Iowa, but it could soon be uprooted"

By Donnelle Eller and Christopher Doering, *Des Moines Register*, February 23, 2014

Three big U.S. production plants will begin making the next generation of biofuels this year - two of them in Iowa. But a proposed rule change could cut demand.

EMMETSBURG, IA. — The line of headlights begins close to 6 a.m. as trucks and other vehicles file into the $250 million construction project south of this northwest Iowa town of 3,900.

Some of the 300 construction workers come from Iowa. But most — with license plates from Nebraska, Texas and Minnesota — fill about every apartment, hotel and trailer in a 30-mile radius. The workers pack the local Casey's for breakfast pizza, line up at Fareway's meat counter and drop by Don Jose's for dinner.

"I'm pretty sure it's the biggest construction project Emmetsburg has ever seen," said Daron Wilson, general manager of the plant being built by Poet-DSM. He points out six cranes on the prairie skyline, a sight little seen in Iowa outside of Des Moines or Cedar Rapids.

Poet's Project Liberty is one of three large-scale U.S. plants that will begin making cellulosic ethanol this year, using corncobs and husks collected from area farmers' fields. It has taken a decade of research and $120 million in government subsidies at this plant alone to bring the ultra-green fuel to commercial-scale production.

But just as a new industry for Iowa is about to take root, a proposed change in government policy could limit demand for ethanol and send new plants and jobs to other countries. Think Brazil, China or European nations.

"There will be a Plant Two for us. What we can't say is whether that plant will be in the U.S. or Iowa or some other country," said Steve Hartig, general manager of Poet-DSM Advanced Biofuels, a joint venture between Poet, a Sioux Falls, S.D., maker of ethanol, and DSM Royal, a Dutch maker of enzymes.

Read more:
http://www.desmoinesregister.com/article/20140223/BUSINESS01/302230074/New-ethanol-industry-blooms-in-Iowa-but-it-could-soon-be-uprooted?Frontpage&nclick_check=1