Fuels Industry Newsletter

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"P.C. company turns natural gas to liquid"

By Ryan Horn, *Marysville Journal-Tribune*, April 30, 2013

The Union County company held its unveiling event Monday, officially becoming the first business in the state to explore the process of turning natural gas into usable and clean fuels.

With all eyes on the future of natural gas production in Ohio, Velocys finally puts a face to the debate.

Monday afternoon, the Plain City business unveiled its new Gas-to-Liquids (GTL) Customer Training Center and Pilot Plant at 7950 Corporate Blvd., which will begin converting natural gas into useable fuels for cars, trucks and planes. It is considered the first operation of its kind within Ohio.

But what is important to note, from a business and cultural perspective, is that Velocys' new technology brings the large and complex field of hydraulic fracturing and natural gas production to a new small-scale level. Not only does the GTL production process cost less and require fewer resources, company officials said, but it also creates "ultra-clean" liquid fuels within minutes.

Read more:
http://www.marysvillejt.com/web/index.php?sid=50&id=18148&m=&y=&d=&pg=1&archive=

Related article***

*** "Pilot gas-to-liquids plant operating in central Ohio"

By Bob Downing, *Ohio.com*, May 4, 2013, Oxford Catalyst Group, Press Release, April 30, 2013

The Oxford Catalyst Group's new Customer Training Centre and Pilot plant, located at the site of the Group's US-based subsidiary, Velocys, Inc. in Plain City, Ohio, USA was officially opened yesterday. The event was attended by prospective customers, suppliers, partner organizations and the press. Visitors were given the opportunity to tour the facility.

The integrated gas-to-liquids (GTL) facility includes microchannel Fischer-Tropsch (FT) and steam methane reforming (SMR) reactors developed by the Oxford Catalysts Group and marketed under the brand name Velocys, as well as a conventional SMR plant provided by the US Air Force. It has been operating since 22 March, and is producing nearly 1 barrel per day of

ultra-pure synthetic liquids and waxes. Future plans include adding a microchannel hydroprocessor to the pilot plant to enable the production of finished fuels.

The Velocys Customer Training Centre and Pilot Plant will be used to test commercial plant configurations at commercially relevant operating conditions, as well as for customer operator training. The pilot plant augments the company's previous field demonstrations, including one incorporating a nominal 25 bpd FT unit located at an integrated energy company.

Read more: http://www.ohio.com/blogs/drilling/ohio-utica-shale-1.291290/pilot-gas-to-liquids-plant-operating-in-central-ohio-1.395015

"Syntroleum Announces First Quarter 2013 Results"

Syntroleum Corporation, Press Release, *The Wall Street Journal*, May 3, 2013

TULSA, Okla., May 3, 2013 (GLOBE NEWSWIRE) -- Syntroleum Corporation (Nasdaq:SYNM) today announced financial results for the three months ended March 31, 2013.

Highlights

Syntroleum's net income was $11.0 million or $1.15 per share for the three months ended March 31, 2013, compared to a net loss of $1.9 million or $0.20 per share for the corresponding period in 2012.

The financial statements for all prior periods have been retroactively adjusted to reflect the April 11, 2013 one-for-ten reverse stock split of the Company's common stock which allowed the Company to regain compliance with NASDAQ's minimum price Marketplace Rule as of April 26, 2013….

About Syntroleum

Syntroleum Corporation owns the Syntroleum(R) Process for Fischer-Tropsch (FT) conversion of synthesis gas derived from biomass, coal, natural gas and other carbon-based feedstocks into liquid hydrocarbons, the Synfining(R) Process for upgrading FT liquid hydrocarbons into middle distillate products such as synthetic diesel and jet fuels, and the Bio-Synfining(R) technology for converting animal fat and vegetable oil feedstocks into middle distillate products such as renewable diesel and jet fuel using inedible fats and greases as feedstock. The 50/50 venture -- known as Dynamic Fuels -- was formed to construct and operate multiple renewable synthetic fuels facilities, with production on the first site beginning in 2010. The Company plans to use its portfolio of technologies to develop and participate in synthetic and renewable fuel projects. For additional information, visit the Company's web site at www.syntroleum.com.

Read more: http://online.wsj.com/article/PR-CO-20130503-912789.html?mod=googlenews_wsj

“New Mechanism Converts Natural Gas to Energy Faster, Captures Carbon Dioxide”

Science Daily, May 7, 2013

Chemical engineering researchers have identified a new mechanism to convert natural gas into energy up to 70 times faster, while effectively capturing the greenhouse gas carbon dioxide (CO2).

“This could make power generation from natural gas both cleaner and more efficient,” says Fanxing Li, co-author of a paper on the research and an assistant professor of chemical and biomolecular engineering at North Carolina State University.

At issue is a process called chemical looping, in which a solid, oxygen-laden material -- called an "oxygen carrier" -- is put in contact with natural gas. The oxygen atoms in the oxygen carrier interact with the natural gas, causing combustion that produces energy.

Previous state-of-the-art oxygen carriers were made from a composite of inert ceramic material and metal oxides. But Li's team has developed a new type of oxygen carrier that include a "mixed ionic-electronic conductor," which effectively shuttles oxygen atoms into the natural gas very efficiently -- making the chemical looping combustion process as much as 70 times faster. This mixed conductor material is held in a nanoscale matrix with an iron oxide -- otherwise known as rust. The rust serves as a source of oxygen for the mixed conductor to shuttle out into the natural gas.

In addition to energy, the combustion process produces water vapor and CO2. By condensing out the water vapor, researchers are able to create a stream of concentrated CO2 to be capture for sequestration.

Read more: http://www.sciencedaily.com/releases/2013/05/130507124807.htm

“Argentina, Indonesia Hit With EU Tariff on Biodiesel Imports”

By Jonathan Stearns, *Bloomberg*, May 28, 2013

The European Union imposed tariffs on biodiesel from Argentina and Indonesia, expanding renewable-energy trade barriers after EU import levies against the U.S.

The duties punish Argentinian and Indonesian exporters of biodiesel, a type of biofuel made from vegetable oils and animal fats for use in diesel engines, for allegedly selling it in the EU below cost, a practice known as dumping. Molinos Rio de la Plata SA, Aceitera General Deheza SA and Pelita Agung Agrindustri are among the companies targeted by the levies as high as 104.92 euros ($135.46) a metric ton, or 10.6 percent.

EU producers including Verbio AG (VBK) in Germany, Diester Industrie SAS in France and Novaol Srl in Italy suffered “material injury” as a result of dumped imports from Argentina and Indonesia, the European Commission, the 27-nation bloc’s trade authority in Brussels, said today

in the Official Journal. The levies, due to take effect tomorrow, are for six months and may be prolonged for five years.

The duties to curb competition for European biodiesel producers in their 12 billion-euro home market highlight tensions accompanying EU efforts to increase the use of biofuels, a renewable energy from crops such as rapeseed, corn, wheat and sugar, amid a crackdown on fossil fuels blamed for global warming. Ethanol is another kind of biofuel.

Read more: http://www.bloomberg.com/news/2013-05-28/argentina-indonesia-hit-with-european-union-levies-on-biodiesel.html

"Ethanol production hits 11-month high, discount to gas 22 cents"

By Holly Jessen, *Ethanol Producer Magazine*, May 28, 2013

The most recent data from the U.S. Energy Information Administration shows that ethanol production is ramping up, reaching the highest weekly average since the end of June. In the meantime, futures prices for ethanol were at nearly 22 cents less than RBOB gasoline, compared to a 20 cent discount last week.

Ethanol production averaged 875,000 barrels per day or 36.75 million gallons daily in the week ending May 17. That's an increase of 18,000 barrels per day from the previous week.

Ethanol stocks are down 1.5 percent from last week, landing at 16.2 million barrels. For the sixth time in seven weeks, zero barrels of ethanol were imported to the U.S. In addition, gasoline demand was at the highest of the year, sitting at an average of 369.2 million gallons daily.

Read more: http://www.ethanolproducer.com/articles/9898/ethanol-production-hits-11-month-high-discount-to-gas-22-cents

"Scientists capture CO2 and produce 'supergreen' hydrogen fuel"

By Kristen Butler, *UPI.com*, May 29, 2013

CO2 sequestration technique produces "supergreen" hydrogen fuel and neutralizes ocean acidity.

Scientists have demonstrated a new technique to capture and store atmospheric carbon dioxide, generating carbon-negative hydrogen and producing alkalinity, which can be used to offset ocean acidification.

The Lawrence Livermore team's system uses the acidity produced in saline water electrolysis to accelerate silicate mineral dissolution while producing hydrogen fuel and other gases, reports Phys.org. The resulting electrolyte solution was shown to absorb and retain atmospheric CO2.

A significant portion of atmospheric carbon dioxide is absorbed by the ocean, forming carbonic acid, making the ocean more acidic. By the middle of this century, the oceans will experience a more than 60 percent increase in acidity relative to pre-industrial levels.

With further research, the alkaline solution generated by the new sequestration process could be added to the ocean to neutralize this acid and help offset its effects on marine life.

"But the process also would produce a carbon-negative 'super green' fuel or chemical feedstock in the form of hydrogen," said Greg Rau, an LLNL visiting scientist, senior scientist at UC Santa Cruz and lead author of the paper published in the Proceedings of the National Academy of Sciences.

"When powered by renewable electricity and consuming globally abundant minerals and saline solutions, such systems at scale might provide a relatively efficient, high-capacity means to consume and store excess atmospheric CO2 as environmentally beneficial seawater bicarbonate or carbonate," Rau said.

Most prior methods for atmospheric carbon dioxide capture and storage proved cumbersome and costly, using thermal/mechanical procedures to concentrate molecular CO2 from the air while recycling reagents.

Read more: http://www.upi.com/blog/2013/05/29/Scientists-capture-CO2-and-produce-supergreen-hydrogen-fuel/5931369824964/

"Pacific Ethanol Begins Production of Corn Oil at Magic Valley Plant"

Source: Pacific Ethanol, Inc., *Globe Newswire*, May 29, 2013

SACRAMENTO, Calif., May 29, 2013 (GLOBE NEWSWIRE) -- Pacific Ethanol, Inc. (Nasdaq:PEIX), the leading marketer and producer of low-carbon renewable fuels in the Western United States, has begun commercial production of corn oil utilizing ICM Inc.'s Advanced Oil Separation System™ at its Magic Valley, ID plant.

Neil Koehler, the company's president and CEO, stated: "Corn oil is a high value co-product with multiple markets including animal feed and biodiesel. Corn oil sales at our Magic Valley plant diversifies our revenue streams, providing greater financial stability to the plant, and is expected to contribute as much as $4.5 million or seven cents per gallon of operating income annually."

About Pacific Ethanol, Inc.

Pacific Ethanol, Inc. (Nasdaq:PEIX) is the leading marketer and producer of low-carbon renewable fuels in the Western United States. Pacific Ethanol also sells co-products, including wet distillers grain ("WDG"), a nutritious animal feed. Serving integrated oil companies and gasoline marketers who blend ethanol into gasoline, Pacific Ethanol provides transportation, storage and delivery of ethanol through third-party service providers in the Western United States, primarily in California, Arizona, Nevada, Utah, Oregon, Colorado, Idaho and

Washington. Pacific Ethanol has an 83% ownership interest in New PE Holdco LLC, the owner of four ethanol production facilities. Pacific Ethanol operates and manages the four ethanol production facilities, which have a combined annual production capacity of 200 million gallons. The facilities in operation are located in Boardman, Oregon, Burley, Idaho and Stockton, California, and one idled facility is located in Madera, California. The facilities are near their respective fuel and feed customers, offering significant timing, transportation cost and logistical advantages. Pacific Ethanol's subsidiary, Kinergy Marketing LLC, markets ethanol from Pacific Ethanol's managed plants and from other third-party production facilities, and another subsidiary, Pacific Ag. Products, LLC, markets WDG. For more information please visit www.pacificethanol.net.

Read more: http://www.globenewswire.com/news-release/2013/05/29/550483/10034361/en/Pacific-Ethanol-Begins-Production-of-Corn-Oil-at-Magic-Valley-Plant.html

"Big Island Biodiesel completes testing of distilled product"

By Pacific Biodiesel Technologies, *Biodiesel Magazine*, May 29, 2013

Big Island Biodiesel, in partnership with Hawaii Renewable Energy Development Venture, installed a high-vacuum distillation (HVD) unit at its new biodiesel facility on Hawaii Island in 2012, and this month testing of fuel produced at the facility was completed.

The state-of-the-art biodiesel refinery, with a capacity of 5.5 MMgy, has since been ramping up production and dialing in the procedures for the HVD unit—a technology that has proven to be an important component in recycling even the most highly degraded waste oils into premium quality biodiesel. The facility has also provided high-quality, local green jobs to more than 20 employees on Hawaii Island, ranging from engineering and operations to administrative positions.

Distillation of biodiesel under high vacuum is a new approach to addressing the shortcomings of traditional biodiesel refining techniques when dealing with degraded feedstock. The biodiesel produced with the new process is an extremely pure fuel.

Due to this advanced technology and the efficiency of the Keaau facility, laboratory test results from BIB distilled product "have been astounding," according to industry pioneer

Bob King, president of Pacific Biodiesel Technologies, the company that developed Big Island Biodiesel. King noted that the fuel quality is exceeding all of the individual biodiesel test component requirements of ASTM standards. For example, the sulfur limit in ASTM D6751 is 15 ppm. Using the D5453 test method, the BIB plant with HVD resulted in a mere 0.9 ppm sulfur. Also, total glycerin max in D6751 is 0.240 percent (mass); using the D6584 test method for total glycerin, the BIB HVD plant produced biodiesel with just 0.011 percent total glycerin content, well under the limits. The same tests run on fuel produced at Pacific Biodiesel

Technologies' Oahu plant, a standard process without HVD, for sulfur and total glycerin came in at 6.25 ppm and 0.125 percent, respectively.

Read more: http://www.biodieselmagazine.com/articles/9129/big-island-biodiesel-completes-testing-of-distilled-product

"The US Shale-Gas Revolution and European Renewables: Divergence and Cooperation in Alternative Energy"

Science Daily, May 29, 2013

May 29, 2013 — That the United States and Europe have been following different energy policies over the past few decades won't come as a surprise. However, according to one researcher, their divergence -- with the US leading 'the shale gas revolution' and Europe investing heavily in modern renewables -- is a good thing for the development of both alternative-energy sources.

Writing in the Journal of Transatlantic Studies, Marianne Haug of the University of Hohenheim argues that although the transatlantic energy partners continue to be committed to common goals -- namely energy security, environmental sustainability and economic competitiveness -- the relative priority given to each has changed substantially since the early 1990s. Domestic issues, geopolitical concerns, differing resource bases, changing energy markets, government policy, public opinion, the accession of new countries to the EU and the choices of investors have all altered the landscape. To address these new challenges, both the US and Europe have jointly and separately reached out to new markets, partners and collaboration arrangements.

Read more: http://www.sciencedaily.com/releases/2013/05/130529101519.htm