

“Calumet moves to FEED stage on modular GTL proposal in Pennsylvania”

Hydrocarbon Processing, February 28, 2013

Calumet now plans to progress with the more detailed engineering and market analysis for the plant. At the conclusion of this study, which is expected to last six months, Calumet says it will decide whether to proceed with fabrication. Production is expected to begin in the second half of 2014.

Calumet Specialty Products is moving to the front-end engineering and design (FEED) phase for its proposed 1,400 bpd gas-to-liquids (GTL) unit at Karns City, Pennsylvania, officials confirmed on Thursday.

Calumet had commissioned Ventech Engineers, specialists in modular petroleum processing plants, to design and deliver the GTL plant utilizing an autothermal reformer (ATR) from Haldor Topsoe and Fischer-Tropsch technology from Velocys.

Ventech has now completed the plant design and provided a fixed price quote for the modules. Calumet has confirmed that the project economics look “strong”, according to Thursday's statement.

Calumet's appointed third-party owner's engineer also finished a thorough review of the technology, as well as Ventech's GTL design and other intended technology components. Calumet said it concluded that the technology “is fantastic”.

"The project with Calumet will be the only commercial GTL plant in North America to move in to front end engineering, other than Sasol's project in Louisiana," said Roy Lipski, CEO of Oxford Catalysts Group, which describes itself as an innovator for the modular GTL technology.

"If it continues on its current schedule, it will be the first GTL plant to be operational in North America, and the only commercial smaller-scale GTL anywhere in the world," he added. Read more: <http://www.hydrocarbonprocessing.com/Article/3162197/Latest-News/Calumet-moves-to-FEED-stage-on-modular-GTL-proposal-in-Pennsylvania.html>

“Uncertainties threaten natgas development”

Oil and Gas Journal, March 4, 2013

Michael Lynch Strategic Energy & Economic Research Inc. Boston BHP Billiton Ltd., Houston, began its activity in the Fayetteville shale in 2011 when it purchased all of Chesapeake Energy Corp.'s interests there, including a midstream pipeline. The acquisition increased BHP Billiton's net reserve and resource base by 45%, says the company. The assets currently produce more than 400 MMcfd. Photograph from BHP Billiton. The past decade has seen what is now considered to be a revolution in natural gas production, as the industry has discovered how to produce natural gas economically from tight formations such as shales, which are extremely common. Read more: <http://www.ogj.com/articles/print/volume-111/issue-3/drilling---production/uncertainties-threaten-natgas-development.html>

“Tape recording patents inspire chemists to invent new Fischer-Tropsch catalyst”

Provided by University of Amsterdam, *Phys.org*, March 5, 2013

Inspired by patents from the 1960's audio cassette recording industry, UvA chemists now developed a new Fischer-Tropsch catalyst. It can be used for the making of synthetic fuels from natural gas and biomass. This week the research on the new nanocobalt-ironoxide catalyst was published as a VIP article in *Angewandte Chemie*. The catalyst was patented by the Total S.A. oil and gas company.

Roberto Calderone, Raveendran Shiju and Gadi Rothenberg from the Heterogeneous Catalysis and Sustainable Chemistry group (Van 't Hoff Institute for Molecular Sciences) succeeded in growing nanometer-thin cobalt shells on iron oxide particles. These new materials are excellent Fischer-Tropsch (F-T) catalysts, giving good diesel fractions.

The Fischer-Tropsch process is used for producing fuels from synthesis gas, which in turn is made from natural gas, biomass or coal. The large reserves of shale gas and natural gas currently changing the world energy market have raised interest in F-T technology. But there is a catch: F-T reactors are huge, and typically use hundreds of tons of catalyst.

Low cost, high performance

Cobalt-based catalysts are the optimal choice for synthesizing middle distillate fuels such as diesel and kerosene with F-T technology. But cobalt is also expensive. In 2009 the Total Gaz & Power company contacted Rothenberg's group to develop a new F-T catalyst together. The UvA researchers took up the challenge to design a cheaper catalyst that can be prepared on a very large scale, yet performs at least as well as pure cobalt.

The chemical aspects of their ambition were daunting. Gaining an economic advantage requires engineering of the particles at single-nanometer resolution, yet in a manner that can be scaled up to multi-ton scale. This rules out all chemical procedures that require high sophistication, extreme temperatures, or expensive chemicals. Read more: <http://phys.org/news/2013-03-tape-patents-chemists-fischer-tropsch-catalytist.html>

***Related News...

*** “Economic nanostructured iron-cobalt catalysts for the Fischer-Tropsch synthesis”

Nanowerk, March 11, 2013

Audio cassettes make the production process for fuels less expensive: To produce nanoparticles made of inexpensive iron oxide cores with a very thin cobalt shell, an international team of researchers modified a method developed for the production of magnetic audio tapes. As the researchers report in the journal *Angewandte Chemie* ("De Novo Design of Nanostructured Iron-Cobalt Fischer-Tropsch Catalysts"), their particles are easily accessible on a large scale, and are excellent Fischer-Tropsch catalysts for the production of good diesel fractions.

The increasing importance of shale gas and natural gas is bringing a century-old process back into the limelight: The Fischer-Tropsch synthesis, an industrial process for the liquefaction of coal developed in 1925, involves the catalytic conversion of a carbon monoxide/hydrogen mixture (synthesis gas) into gaseous and liquid hydrocarbons. These days, it is used in some countries for the production of ultrapure synthetic fuels from coal or natural gas. Biomass is also a good feedstock for this process. Read more: <http://www.nanowerk.com/news2/newsid=29439.php>

“Chemical, GTL companies at CERAWeek discuss taking advantage of shale resources”

By Molly Ryan, *Houston Business Journal*, March 6, 2013

Now that the U.S. has a plentiful, accessible source of oil, natural gas and natural gas liquids in shale formations, what can we use these products for besides energy?

Chemical and gas-to-liquids (GTL) companies believe they have the answer: turn these products into higher-value products, like chemicals and synthetic fuels.

Executives from both chemical and gas-to-liquids production companies spoke on a panel at IHS CERAWeek about how their companies plan to take the most advantage of shale oil and gas. Read more: <http://www.bizjournals.com/houston/blog/nuts-and-bolts/2013/03/chemical-gtl-companies-talk-at.html>

“Duckweed as a cost-competitive raw material for biofuel production”

Phys.org, March 6, 2013

The search for a less-expensive, sustainable source of biomass, or plant material, for producing gasoline, diesel and jet fuel has led scientists to duckweed, that fast-growing floating plant that turns ponds and lakes green. That's the topic of a report in ACS' journal Industrial & Engineering Chemistry Research.

Christodoulos A. Floudas, Xin Xiao and colleagues explain that duckweed, an aquatic plant that floats on or near the surface of still or slow-moving freshwater, is ideal as a raw material for biofuel production. It grows fast, thrives in wastewater that has no other use, does not impact the food supply and can be harvested more easily than algae and other aquatic plants. However, few studies have been done on the use of duckweed as a raw material for biofuel production.

They describe four scenarios for duckweed refineries that use proven existing technology to produce gasoline, diesel and kerosene. Those technologies include conversion of biomass to a gas; conversion of the gas to methanol, or wood alcohol; and conversion of methanol to gasoline and other fuels. The results show that small-scale duckweed refineries could produce cost-competitive fuel when the price of oil reaches \$100 per barrel. Oil would have to cost only about \$72 per barrel for larger duckweed refiners to be cost-competitive.

The article is titled "Thermochemical Conversion of Duckweed Biomass to Gasoline, Diesel, and Jet Fuel: Process Synthesis and Global Optimization."

More information: Thermochemical Conversion of Duckweed Biomass to Gasoline, Diesel, and Jet Fuel: Process Synthesis and Global Optimization, *Ind. Eng. Chem. Res.*, Article ASAP. <http://pubs.acs.org/doi/abs/10.1021/ie3034703>. Read more: <http://phys.org/news/2013-03-duckweed-cost-competitive-raw-material-biofuel.html>

“Sasol highlights commercial GTL expertise at Natural Gas Conversion Symposium in Qatar”

Sasol, Press Release, *AMEinfo*, March 7, 2013

Sasol, one of the world's largest producers of synthetic fuels, showcased its expertise in gas-to-liquids (GTL) technology at the 10th Natural Gas Conversion Symposium in Doha, Qatar. The Symposium, held for the first time in Qatar, the LNG and GTL capital of the world, and is currently taking place at the Ritz-Carlton hotel through 7 March.

"The NGCS is an ideal platform for Sasol to showcase not only our innovative technology, but the commercial application that has led to our world-leading position in synthetic fuels," said Marjo Louw, Country President, Sasol Qatar.

"Natural gas has emerged as a major component in the global power generation market, but until recently it lacked the versatility to address other pressing energy needs. We must work together to drive commercial acceptance of GTL products," he added.

Hosted by the Natural Gas Conversion Board and Texas A&M University at Qatar, the NGCS 10 is titled, 'Gas Conversion: The Clean Energy of the Future'. Sasol has taken platinum sponsorship of the event with ORYX GTL, its joint venture with Qatar Petroleum in Qatar.

More than 300 researchers, scientists and industry executives from 32 countries are participating in the event, held under the patronage of His Excellency Dr. Mohammed bin Saleh Al-Sada, Minister of Energy & Industry, Qatar. Read more: <http://www.ameinfo.com/sasol-highlights-commercial-gtl-expertise-natural-332485>

“Obama proposes using off-shore royalty payments to fund alternative energy research”

By Bruce Alpert, NOLA.com, *Times - Picayune*, March 15, 2013

WASHINGTON - President Barack Obama is scheduled Friday to unveil his new energy proposals - including setting up a \$2 billion fund from off-shore oil and gas drilling royalty payments to support research on alternative energy. The pot of money, to be made available over a 10-year period, would develop ways to develop and expand use of electrical vehicles, homegrown biofuels, fuel cells and domestic produced natural gas.

Obama administration officials say off-shore royalty payments are expected to increase in coming years based on a combination of leasing, production and price trends.

As part of his new policy, being unveiled at a speech Friday at the Argonne National Laboratory in Lemont, Ill, the president will say the United States should set a goal of cutting net oil imports in half by the end of the decade.

According to the White House, the plan calls for speedier permitting of both alternative energy products and oil and gas. It said the Interior Department will propose more diligent development of oil and gas leases through shorter primary lease terms, stricter enforcement of lease terms and monetary incentives to get leases into production quicker. Read more:

http://www.nola.com/politics/index.ssf/2013/03/obama_proposes_using_off-shore.html

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***** “Obama reiterates plan to use oil revenue for alternative energy R&D”**

By Nick Snow, *Oil and Gas Journal*, March 17, 2013

Technological breakthroughs in the last few years have significantly improved the US energy situation, but more needs to be done, US President Barack Obama said on Mar. 15. He specifically called for creation of an Energy Security Trust to develop and deploy transportation alternatives that would be funded by federal crude oil leasing revenue.

“This is not a Democratic idea or a Republican idea. This is just a smart idea,” the president said in an address at Argonne National Laboratory in Lemont, Ill. “And we should be taking their advice. Let’s set up an Energy Security Trust that helps us free our families and our businesses

from painful spikes in [gasoline prices] once and for all. Let's do that. We can do it. We've done it before."

He acknowledged, as he did in his Feb. 12 State of the Union address, that the idea came from Securing America's Future Energy (SAFE), which is committed to protecting US national and economic security by combating domestic dependence on oil for transportation fuels. Read more: <http://www.ogj.com/articles/2013/03/obama-reiterates-plan-to-use-oil-revenue-for-alternative-energy-.html>

“Sasol's new US ethane operation is a cracker”

By Jana Marais, *Business Day Live*, March 17, 2013

SASOL's planned new ethane cracker in the US will enable the group to benefit from cheap natural gas despite global overcapacity in the chemicals market.

The group, which makes about 66% of its operating profit converting coal to fuels in SA, plans to invest up to \$7bn in the ethane project in Louisiana and up to \$14bn more to build two gas-to-liquids (GTL) plants there.

An analyst said: "I really like Sasol's ethane plans. About half of the globe's ethane crackers rely on oil as a feedstock, while Sasol will use gas, which is much cheaper. If you use oil, as they typically do in Europe and Asia, you're losing money. If you use gas in the US or the Middle East, you can earn record margins."

Ethane crackers use gas or oil as a feedstock to produce ethane, which is used as a fuel, in refrigeration or for the production of other chemicals.

Low US gas prices, due to a boom in production of gas from shale rock, are behind a project pipeline of about \$100bn in gas, oil and chemicals, said Andre de Ruyter, senior executive for global chemicals at Sasol. US gas costs about \$3.75 per million British thermal units, compared with \$16 in Asia and \$11 in Europe. Read more:

<http://www.bdlive.co.za/business/industrials/2013/03/17/sasol-s-new-us-ethane-operation-is-a-cracker>

“BLM seeks comments on EOG's proposed Natural Buttes liquids system”

By Nick Snow, *Oil and Gas Journal*, March 19, 2013

The US Bureau of Land Management is seeking public comments on an environmental assessment of EOG Resources Inc.'s proposed liquids gathering system at the independent producer's Natural Buttes natural gas leases in eastern Utah.

EOG has proposed building buried pipelines to transport water; combined gas, water, and oil; and compressed gas between 2,100 existing, approved, or proposed wells and 14 proposed processing facilities, BLM's Vernal, Utah, field office said in a Mar. 14 notice.

Most of the pipelines would be adjacent to existing roads, it indicated.

The proposed project aims to reduce air pollutant emissions from existing and future operations by removing storage tanks from well sites; substantially reducing truck traffic required to transport liquids; and concentrating liquids processing at centralized facilities equipped with advanced emissions controls, the notice said.

Comments will be accepted until Mar. 29, it indicated. Read more:

<http://www.ogj.com/articles/2013/03/blm-seeks-comments-on-eog-s-proposed-natural-buttes-liquids-syst.html>

“Ethanol’s Discount to Gasoline Narrows on Tight Supplies”

By Kenneth Christensen, *Bloomberg*, March 19, 2013

Ethanol strengthened against gasoline, which dropped the most in almost three weeks as Brent crude fell. Ethanol output is below last year's levels.

The spread narrowed 5.78 cents to 44.01 cents a gallon as gasoline fell with Brent, which settled at the lowest level this year. Ethanol production in the first 10 weeks of the year is down 14 percent from a year earlier, according to Energy Information Administration data. Companies cut output after drought in the Midwest last year elevated corn prices, which advanced for a second day. Read More: <http://www.bloomberg.com/news/2013-03-19/ethanol-s-discount-to-gasoline-narrows-on-tight-supplies.html>

“Petrotranz Announces Liquids Transportation System (LTS)”

Petrotranz, *MarketWire*, March 20, 2013

CALGARY, ALBERTA--(Marketwire - March 20, 2013) - Petrotranz is pleased to announce the commercial release of the Petrotranz Liquids Transportation System (LTS). LTS is an industry solution that automates many of the processes associated with the movement of Natural Gas Liquids (NGLs). LTS is a secure, easy-to-use, web-based communication and collaboration platform that streamlines the manual processes and documentation required in the transportation of NGL's from wellhead to market.

Petrotranz has developed a proven framework and platform for developing and managing secure web-based applications for the energy industry. The platform consists of a database of all industry stakeholders, role based security, workflow, transaction auditing, messaging, reporting and a series of portals delivering specific applications. The applications currently delivered

through web-based portals are a Producer Portal, a Midstream Facility Operator Portal, and a Shipper / Marketer Portal.

LTS provides Producer Operators, Facility Operators (Pipelines/Gas Plants/Fractionators) and Shipper Marketers the ability to manage forecast volumetric data, capture production information and reconcile delivered volumes each month. The capture of actual delivery volumes allows for the detailed analysis of forecasted versus delivery volumes as well as the allocation of marketer splits for each production facility.

LTS helps reduce risk and improve efficiencies for all stakeholders in the Western Canadian Natural Gas Liquids industry through timely reporting, enhanced tracking, and improving the accuracy of volumetric data. Read more: <http://www.marketwire.com/press-release/petrotrans-announces-liquids-transportation-system-lts-1770155.htm>

“Milestone for new carbon capture and clean coal technology”

Source American Chemical Society, *R & D Magazine*, March 20, 2013

An innovative new process that releases the energy in coal without burning—while capturing carbon dioxide, the major greenhouse gas—has passed a milestone on the route to possible commercial use, scientists are reporting. Their study in the ACS journal *Energy & Fuels* describes results of a successful 200-hour test on a sub-pilot scale version of the technology using two inexpensive but highly polluting forms of coal.

Liang-Shih Fan and colleagues explain that carbon capture and sequestration ranks high among the approaches for reducing coal-related emissions of the carbon dioxide linked to global warming. This approach involves separating and collecting carbon dioxide before it leaves smokestacks. Fan's team has been working for more than a decade on two versions of carbon capture termed Syngas Chemical Looping (SCL) and Coal-Direct Chemical Looping (CDCL). They involve oxidizing coal, syngas or natural gas in a sealed chamber in the absence of the atmospheric oxygen involved in conventional burning. Metal compounds containing oxygen are in the chamber. They provide the oxygen for oxidation, take up coal's energy, release it as heat in a second chamber and circulate back for another run in the first chamber. Read more: <http://www.rdmag.com/news/2013/03/milestone-new-carbon-capture-and-clean-coal-technology>

“Both sides agree on tough new fracking standards”

By Timothy Puko, *TribLIVE Business*, March 20, 2013, Updated: March 21, 2013

Some of the world's biggest energy companies are collaborating with the country's biggest environmental groups in an unusual alliance to improve protections for groundwater, air quality and the climate from drilling in Appalachian shale.

Eleven organizations officially began the Center for Sustainable Shale Development at a Downtown announcement on Wednesday. The Tribune-Review first reported on the group in February.

Oil and gas producers have faced relentless pressure from critics to be more environmentally responsible and transparent about industry practices as drilling has increased across the country. The cooperation underscores efforts by the usually fierce opponents to find common ground.

“While the potential economic and environmental benefits of shale gas are substantial, the public expects transparency, accountability and a fundamental commitment to environmental safety and the protection of human health,” said former Treasury Secretary Paul O’Neill, one of several outsiders involved in the group to help balance the environmental and industry members.

By fall, the group hopes to have consultants inspecting drilling operations and performance data to determine whether companies are following the highest possible standards, leaders said. It is starting with 15 standards covering water use and air emissions, with hopes to add safety standards later.

To get certified, drillers won’t be able to use open-air ground pits to store wastewater or be able to vent gas during initial production. They would even have to tighten emissions from the trucks their contractors use on the road, which could be one of the toughest standards to meet, members said. Read more: <http://triblive.com/business/headlines/3690484-74/environmental-drilling-standards#axzz2O6ouVLI4>

“Race is on to ship Pennsylvania natural gas liquids to Gulf sites”

By Erich Schwartzel, *Pittsburgh Post-Gazette*, March 24, 2013

BEAUMONT, Texas -- From some angles, it looks as if all pipelines lead to Beaumont. The Texas town seems to build in bulk when it comes to prisons, Baptist churches and taquerias -- and pipelines are no different, with dozens of them underlying cow pastures or poking out of the ground when they cross a shallow bayou.

Soon, new pipelines originating in Pennsylvania will join the crowded Texas fields after a trip of nearly 1,500 miles. Their cargo: natural gas liquids extracted from parts of the Marcellus Shale that lies under Appalachia.

Traveling from Pennsylvania to Texas via pipeline has become the hottest ticket in the energy industry.

Over the past year, several energy infrastructure firms have announced plans to transport Pennsylvania liquids to the petrochemical facilities and export markets available in towns near the Gulf Coast like Beaumont. Oftentimes, the deals are financed with help from joint venture partners, all trying to solve (and cash in on) Pennsylvania’s energy problem.

What’s the problem? We have the goods but nowhere to take them.

Enterprise Products Partners LP will start building a pipeline next month that will lead from Houston, Pa., to outside Houston, Texas, and should be in service by early 2014. This month, the Williams company announced plans for a joint venture with Boardwalk Pipeline Partners to transport Marcellus liquids from their "infrastructure-constrained" region in Appalachia to a site in Louisiana. Several other firms, including El Paso and Sunoco Logistics, have similar plans. Read more: <http://www.post-gazette.com/stories/business/news/race-is-on-to-ship-pennsylvania-natural-gas-liquids-to-gulf-sites-680633/>

“Blair County processing plant expected for 2015”

By Erich Schwartzel, *Pittsburgh Post-Gazette*, March 26, 2013

A new gas-to-liquid processing plant is expected to be up and running in Blair County by 2015, a \$200 million investment in a region that doesn't have shale gas of its own but still wants a piece of the industry.

Marcellus GTL LLC of Gilberton, Schuylkill County, announced last week it would begin construction on the plant in Duncansville later this year. The facility, called a Clean Energy Center and the first of its kind, will process natural gas to produce about 84,000 gallons of gasoline and propane per day.

It will take up a 10-acre footprint on a 60-acre site, the latest Marcellus-related development to come to Blair County, which borders gas-producing regions but doesn't expect any wells of its own. The site, near Hollidaysburg, is about 90 miles east of Pittsburgh. Read more: <http://www.post-gazette.com/stories/business/news/blair-county-processing-plant-expected-for-2015-680884/>