

“Technologies Offer Gasoline From Natural Gas or Waste as Low as \$75 per Barrel”

Lux Research (Press Release), *The Wall Street Journal*, *Market Watch*, July 25, 2013

Technologies Offer Gasoline From Natural Gas or Waste as Low as \$75 per Barrel Many Alternative Fuels Technologies Remain Uneconomical Today, With Return on Investment of Over 17 Years, but Emerging Technologies Will Drive Down Costs, Says Lux Research

BOSTON, MA, Jul 25, 2013 (Marketwired via COMTEX) -- An unprecedented price disparity between crude oil and other resources -- coupled with the emergence of cheap and abundant shale gas, especially in the United States -- is transforming the alternative fuels landscape, opening up opportunities to produce cheaper gasoline, says Lux Research.

With crude oil price projected to top \$140 per barrel by 2035, alternative fuel technologies, which can produce gasoline at the equivalent of \$75 per barrel, will rise.

"Raw materials such as natural gas and waste biomass will become increasingly viable options for making liquid fuels as new technologies tame high capital and operating costs," said Daniel Choi, a Research Associate at Lux Research and the lead author of the report titled, "Bringing the Heat: Gas- and Waste-derived Synfuels."

Lux Research analysts studied the cost of 21 biomass-to-liquids (BTL) and gas-to-liquids (GTL) processes. Among their findings:

- Methanol-to-gasoline is the cheapest option. At small scale (~1,000 barrels per day), methanol-to-gasoline (MTG) is the most competitive route for liquid fuels from either natural gas (\$82 per barrel) or waste (\$75 per barrel).
- GTL can make ethanol more cheaply, but offers limited product value. Among GTL approaches, ethanol synthesis has the lowest cost of \$80 per barrel, while Fischer-Tropsch costs \$86 per barrel and MTG costs \$82 per barrel. However, ethanol has less product value, due to blending limits and lower energy density.
- Waste biomass is a ubiquitous alternative. The U.S. Department of Energy says that waste biomass could produce 50 billion gallons of ethanol, roughly 3.5 times the current production. Processing the waste is challenging, adding \$3.60/bbl to the fuel price -- but that's often more than offset by feedstock cost savings.

*MSW: Municipal Solid Waste

The report, titled "Bringing the Heat: Gas- and Waste-derived Synfuels," is part of the Lux Research Alternative Fuels Intelligence service.

Read more: <http://www.marketwatch.com/story/technologies-offer-gasoline-from-natural-gas-or-waste-as-low-as-75-per-barrel-2013-07-25>

“DOE supercomputer gives clean energy research "computational muscle"”

By Barbara Vergetis Lundin, *Fierce Energy*, August 4, 2013

U.S. Department of Energy Secretary Ernest Moniz has dedicated one of the world's fastest supercomputers at the National Energy Technology Laboratory (NETL). The high-performance computer for energy and the environment is one of the top 100 supercomputers in the world and is one of the most energy efficient for its size.

The 503 TFlops (trillion floating-point operations per second) supercomputer is a unique tool tailored for engineering calculations in support of fossil energy research, enabling researchers to apply complex model simulations for advanced energy and environmental technology development.

"This new capacity will give us the computational muscle to accelerate the development and design of large scale chemical looping reactors and carbon capture technologies that will allow us to use fossil fuels more cleanly," said Secretary Moniz in a statement. "It will ensure that NETL remains on the forefront of this research, which is critical not only to our economic future but to the environment as well."

Read more: <http://www.fierceenergy.com/story/doe-supercomputer-gives-clean-energy-research-computational-muscle/2013-08-04>

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*** “Energy secretary tours Morgantown research lab”**

By Michael Bradwell, *observer-reporter.com*, August 15, 2013

MORGANTOWN, W.Va. – U.S. Secretary of Energy Ernest Moniz told staffers at the National Energy Technology and Research Laboratory in Morgantown Monday that their work will be front and center in helping the country find energy solutions in the years ahead.

Moniz, who toured NETL’s extensive laboratories devoted to fossil fuels research, also told reporters later Monday that despite the domestic coal industry taking a hit in recent times, the fuel will remain a significant part of the national energy portfolio for years to come.

“This is going to be the place to be over the next few years” with regard to finding more efficient and environmentally friendly ways to use fossil fuels, Moniz told an audience of several hundred scientists, engineers and technicians assembled in the NETL campus auditorium.

“The challenges are serious,” he said. “It’s pretty hard to argue that we are not actually seeing the effects of global warming through droughts, wildfires and increases in naturally occurring (weather) events.”

But Moniz also said he’s optimistic that the country can meet its energy challenges in the same way it has met other challenges in its history.

Reiterating President Obama’s message about using all types of fuels to meet future energy needs, Moniz said, “We have an ‘all of the above’ strategy, and it’s real.

“We’re about preparing that future so that all of our fuels have important roles,” he said.

For NETL, which he helped to transform from a smaller fossil fuels research center into a national one when he was undersecretary of the Department of Energy in the late 1990s, Moniz said the lab will have a critical role in the future uses of fossil fuel.

Read more: <http://www.observer-reporter.com/article/20130729/NEWS01/130729301/-1/NEWS>

“EPA cutting alternative fuels goal in bow to market reality”

By Edward Felker, *The Washington Times*, August 6, 2013

The Environmental Protection Agency bowed Tuesday to the limits of the U.S. market’s ability to work renewable fuels into the nation’s energy mix, disclosing it will set 2014 production goals for alternative motor fuels that are below the target set by law.

The agency said it has no plans to abandon the mandate to increase the use of biofuels as some oil industry critics have suggested, but its plan for reduced targets next year was a tacit acknowledgment the market is not ready yet to handle the production volumes for ethanol and other alternative fuels envisioned by Congress.

The EPA “does not currently foresee a scenario in which the market could consume enough ethanol” to meet the 2014 requirements set forth in the law, the agency said in a fact sheet that accompanied Tuesday’s announcement.

The decision was mixed news for both oil industry groups that oppose the renewable fuels standard, known as the RFS, and biofuel backers, which have argued the more ambitious targets could be met through higher blends of ethanol in gasoline that EPA has approved but which gas stations have yet to adopt.

EPA officials did not say how much they would seek to reduce the law's 2014 target of 18.15 billion gallons of biofuels use in transportation fuels. They will unveil a proposal later this year for comment.

Read more: <http://www.washingtontimes.com/news/2013/aug/6/epa-cutting-alternative-fuels-goal-in-bow-to-marke/>

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**** “Ethanol mandate, 'blend wall' loom large for refiners”**

By Javier E. David, *CNBC*, August 11, 2013

Just when consumers got beyond the "fiscal cliff," they may now have to contend with the "blend wall"—the latest policy catchphrase that could affect prices at the pump.

Since Congress legislated mandated renewable fuel standards in 2007, oil refiners have chafed at the requirement that all gasoline contain 10 percent ethanol. Under current guidelines, refiners must blend increasing amounts of corn ethanol—16.55 billion gallons this year—with overall gas production, currently estimated at 133 billion gallons.

Yet based on current trends of declining gasoline use, the gas-to-ethanol mix will eventually have to exceed the 90-to-10 threshold, creating the "blend wall" refiners say could hike production costs and put upward pressure on gas prices.

In June, Chevron warned ethanol mandates may even spur refiners to export gasoline in order to avert the law's punitive effects. That could in turn cut into domestic supplies and put upward pressure on prices.

Last week, the Environmental Protection Agency extended the deadline for energy companies to meet the quotas, while hinting that it may reduce next year's mandates.

Read more: <http://www.cnbc.com/id/100952221>

“Petroleum Researcher Awarded American Chemical Society New Investigator Grant”

By Jayna Miller, *Uconn Today (blog)*, August 7, 2013

George Bollas, an assistant professor in the Department of Chemical & Biomolecular Engineering, is the recipient of a prestigious American Chemical Society Petroleum Research Fund Doctoral New Investigator Award.

The awards support innovative research in the petroleum field and promote the development of promising engineers and scientists. The award program provides career opportunities to young faculty and their undergraduate and graduate students by supporting advanced scientific research.

The goals of the American Chemical Society Petroleum Research Fund are to support fundamental research in the petroleum field, and develop the next generation of engineers and scientists through the support of advanced scientific education.

Bollas' research project will explore aspects of Fischer-Tropsch Synthesis selectivity. The Fischer-Tropsch process is a collection of chemical reactions that provide a means of producing transportation fuels from carbon monoxide and hydrogen, a combination referred to as synthesis gas. This reaction also produces excess hydrocarbon products in addition to materials for fuel, so there remains a need to make this process more selective.

The equipment Bollas is using in his research includes a conical spouted bed reactor for biomass fast catalytic pyrolysis and chemical-looping combustion of coal or biomass. The development of this reactor was supported in part by the UConn Intermediate Research Equipment Award.

Read more: <http://today.uconn.edu/blog/2013/08/petroleum-researcher-awarded-american-chemical-society-new-investigator-grant/>

“GTL '13: Executive insight into new gas-to-liquids technologies”

By Adrienne Blume, *Hydrocarbon Processing*, August 8, 2013

HOUSTON -- Gulf Publishing Company's inaugural Gas-to-Liquids (GTL) Technology Forum and exhibit took place from July 30–31. Speakers and attendees shared knowledge on gas processing technology developments, project economics and business challenges, with a focus on GTL processing technologies. The event, which featured five technical sessions and two keynote speakers, was sponsored by Honeywell and drew over 160 attendees representing 96 companies from 10 countries.

Networking lunches and refreshment breaks in the Forum's exhibit space allowed delegates to discuss business strategies over coffee and desserts, and learn more about the technology and data management solutions offered by conference exhibitors Pentair, Forum Energy Technologies, AMACS and Construction Boxscore Database. A complete recap of the 2013 GTL event can be read below:

DAY 1. The Forum opened on Tuesday, July 30, with a keynote speech by Mark Schnell (see photo), the general manager of marketing, strategy, and new business development for Sasol, on the role of GTL in the new North American energy landscape. Mr. Schnell called it an "exciting time to be in the North American gas business" for those on the demand side of the equation. He addressed three major topics, including Sasol's progress on its GTL plant in Louisiana, the company's experience on its GTL journey, and where GTL might fit into the energy landscape going forward.

Read more: <http://www.hydrocarbonprocessing.com/Article/3238801/GTL-13-Executive-insight-into-new-gas-to-liquids-technologies.html>

“Louisiana legislative committee delays fuel plant incentives”

By Kevin McGill, *DailyWorld.com*, August 11, 2013

LAKE CHARLES — A legislative committee has delayed approval of an incentive agreement for a huge fuel plant planned for the Lake Charles area, with some members complaining they don't have enough information about the cost of tax incentives used to attract the facility.

The Joint Committee on the Budget's decision Friday to delay approval until its next meeting — expected in two weeks — was a setback for Stephen Moret, economic development chief for Gov. Bobby Jindal. Moret said the postponement sends the wrong message to South African energy company Sasol Ltd., which has spent millions on the project, and to other industries that might look to locate or expand in Louisiana.

Jindal's administration has pledged a more than \$135 million incentive package for the plant. Incentives include tax breaks, a \$20 million worker training facility and a \$115 million payment to the company for land and infrastructure.

“I recognize sending out a bad message to industry. I understand that. I also recognize sending out a horrible message back to my constituents that I just decided to totally abdicate my responsibility,” Sen. Robert Adley, R-Benton, said during the meeting, which was held at the Capitol in Baton Rouge and streamed live on the legislative website.

Adley made the motion to delay approval of an agreement needed to advance the Sasol project.

Read more: <http://www.dailyworld.com/viewart/20130812/NEWS01/308120005/Louisiana-legislative-committee-delays-fuel-plant-incentives>

“Texas A&M Kingsville to Open New Oil Shale Research Center”

By Sara Donchey, *kztv10.com*, August 14, 2013

KINGSVILLE -- Texas A&M University-Kingsville approved the establishment of the new Eagle Ford Center for Research, Education and Outreach (EFCREO), housed in the Frank H. Dotterweich College of Engineering.

Faculty said the idea for the center came about when students already working in the industry voiced concerns that they needed additional job training.

The center is intended to serve as a source for credible scientific information and an intermediary between the local oil industry, local officials and concerned members of the community.

Read more: <http://www.kztv10.com/news/texas-aandm-kingsville-to-open-new-oil-shale-research-center/>

“Technip, Sasol launch engineering alliance for GTL”

Hydrocarbon Processing, August 21, 2013

Technip and Sasol said the alliance, which builds on existing relationships, aims to achieve strong capital productivity through the highest standards of HSE, operability, accelerated innovation and reduced project cycle times. The deal also allows for Technip’s participation during GTL execution stages.

Technip and Sasol, the owner of the world’s leading gas-to-liquids (GTL) technology, have established an alliance for front-end engineering services for future Sasol GTL projects, the companies said on Wednesday.

The alliance also allows for Technip’s participation during the execution stage of future GTL projects. Officials said the alliance, which builds on existing relationships, aims to achieve strong capital productivity through the highest standards of HSE, operability, accelerated innovation and reduced project cycle times.

GTL technology is a process for converting natural gas into petroleum products such as naphtha and diesel fuel that are very clean with effectively no pollution-causing sulfur or aromatic hydrocarbons.

The companies say the high-cetane number of the diesel fuel will help meet future more stringent specifications.

“Sasol is excited about its GTL future,” said Lean Strauss, senior group executive at Sasol. “We are confident that in working closely together, the design and execution expertise of Technip will significantly further enhance the robustness of our GTL value proposition as we grow our business where our technology strength lies.”

GTL technology is becoming increasingly important not only for the environmental advantages of its products, but also because it provides an efficient and safe solution for the transportation of natural gas.

Read more: <http://www.hydrocarbonprocessing.com/Article/3246143/Latest-News/Technip-Sasol-launch-engineering-alliance-for-GTL.html>