MIDSTREAM Monitor

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FEATURES

Biogas In The Energy Equation

JOSEPH MARKMAN
HART ENERGY

WASHINGTON—The astonishing reserves of fossil-based natural gas on the North American continent—100 years of supply for the U.S. and 200 years for Canada—combined with the rapid growth in market share of renewable sources would seem to lock in the energy equation: wind plus solar equals power generation. Except when the wind doesn't blow—or blow sufficiently—and the sun doesn't shine. When that happens, natural gas-fired generation fills in the gaps.

"It's a match made in heaven," said Barry Perry, president and CEO of St. John's,

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Newfoundland-based utility Fortis Inc., at the recent World Gas Conference. "We are working on some other things like [hydroelectric power] but fundamentally, right now, I think natural gas does complement the growth of renewables, in North America especially."

That might preclude the need to pursue other sources of renewable energy, but the U.S. Environmental Protection Agency (EPA), wary of the challenge of methane leaks along the gas value chain, has its eye on other solutions, including renewable natural gas or biogas.

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"Biogas has been captured and used for energy for a long time, for decades both here in the U.S. and around the globe," said Chris Voell of the EPA's climate change division. "Traditionally it's been used for electricity production. Oftentimes that's where the incentives were placed so that's where people had direction."

One of the world's first biogas projects was built in New York City in 1981 and is still operating. And while it remains a nascent industry in the U.S., Voell said, the federal Renewable Fuel Standard and state-level incentives like California's Low-Carbon Fuel Standard are drawing attention to the fuel.

The essence of biogas—or biomethane, renewable natural gas or R-gas as it is also known—is that it is fuel from waste products, either landfills or anaerobic digester (organic waste).

Wheeler's Savvy Will Make Ease EPA Transition

There was an official change at the top the Environmental Protection Agency (EPA) on July 9 when Washington, D.C., insider Andrew Wheeler took over for Scott Pruitt as chief administrator.

But don't expect much change in policy as Wheeler is expected to continue to push President Donald Trump's EPA agenda, which is primarily eliminating Obama-era policies and rolling back regulations. There is one caveat and that is most analysts expect Wheeler to be far more effective than his predecessor because of his political savvy, having worked on Capitol Hill and as a coal lobbyist for years.

Wheeler, 53, was appointed as the acting chief administrator of the EPA on the same day Pruitt resigned, July 5.

"Andy Wheeler will be a source of steady leadership for the agency," said Scott Segal, a partner at Bracewell LLP, who leads the firm's energy and environmental practice. "He will undoubtedly keep EPA on track to meet the White House expectations for defendable and effective regulatory reform."

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FTI Consulting's managing director, Matt Dempsey, agrees. Dempsey and Wheeler began working together back in 2003 as aides for the Senate Environment and Public Works Committee. Their paths have continued to cross over the years.

"One of the key components of what he is going to do at the EPA is Andrew is somebody who has the respect of Republicans and Democrats," Dempsey told Hart Energy. "He is a policy wonk and he is somebody who has the respect of those in Washington, D.C.

"Andrew is a well-respected policy wonk that has the ability to work with folks and will help drive a similar agenda to what Scott Pruitt was doing at the EPA."

That means Wheeler will continue to push Trump's agenda of scaling back environmental policies aimed at keeping the air clean and slowing down global warming. **—TERRANCE HARRIS** | HART ENERGY

FRAC SPREAD

Ethane's Increase Is Anything But Marginal

JOSEPH MARKMAN | HART ENERGY

Ethane shot past 36 cents per gallon (gal)—an 8.4% jump—last week at Mont Belvieu, Texas, to accompany a 23.91% widening of its margin to almost 18 cents/gal.

It is now up 74% for the year in price and 521% (yes, *521%*) in margin. Not bad if you like that sort of thing.

CURRENT FRAC SPREAD (CENTS/GAL)				
JULY 13, 2018	Conway	Change from Start of Week	Mont Belvieu	Last Week
Ethane	11.10		36.63	
Shrink	17.78		18.75	
Margin	-6.68	-9.96%	17.88	23.91%
Propane	74.31		96.58	
Shrink	24.57		25.90	
Margin	49.74	5.59%	70.68	4.60%
Normal Butane	80.69		113.03	
Shrink	27.82		29.32	
Margin	52.87	2.35%	83.71	9.17%
Isobutane	105.81		124.85	
Shrink	26.72		28.16	
Margin	79.09	-7.57%	96.69	-2.42%
Pentane+	134.94		155.70	
Shrink	29.75		31.36	
Margin	105.19	-7.98%	124.34	1.88%
NGL $/Bbl	26.89	-2.59%	36.97	2.86%
Shrink	9.80		10.33	
Margin	17.09	-1.76%	26.64	5.37%
Gas ($/mmBtu)	2.68	-3.99%	2.83	-3.11%
Gross Bbl Margin (in cents/gal)	39.24	-1.17%	62.15	5.46%
NGL Value in $/mmBtu (Basket Value)				
Ethane	0.61	0.00%	2.02	8.44%
Propane	2.58	2.21%	3.35	2.42%
Normal Butane	0.87	0.07%	1.22	5.69%
Isobutane	0.66	-6.69%	0.78	-2.58%
Pentane+	1.74	-7.13%	2.01	0.84%
Total Barrel Value in $/mmbtu	6.46	-1.89%	9.38	3.28%
Margin	3.78	-0.34%	6.55	6.31%

Price, Shrink of 42-gal NGL barrel based on following: Ethane, 36.5%; Propane, 31.8%; Normal Butane, 11.2%; Isobutane, 6.2%; Pentane+, 14.3%, Fuel, frac, transport costs not included. Conway gas based on Midwest region, Mont Belvieu based on Houston region. Shrink is defined as Btus that are removed from natural gas through the gathering and processing operation.

The near-term outlook is promising. U.S. domestic consumption is on track to increase by 55% from 2014 to 2019, the U.S. Department of Energy (DOE) calculated in a **June report**. Almost all domestic output is dedicated as a feedstock for petrochemical plants that manufacture ethylene. A slew of new ethylene plant projects will increase U.S. capacity to nearly 600,000 bbl/d by year-end 2019.

Those new plants will support an export market that is a significant driver of the sector's growth. Switching from net importer to net exporter of ethane for the U.S. happened as recently as 2014 with the start-up of two pipelines to Canada from North Dakota and Pennsylvania. Average ethane net exports, which were about 60,000 barrels per day (bbl/d) in 2015, are expected to climb as high as 350,000 bbl/d in 2019.

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The list of operators building these plants reflects global demand for U.S. ethane:

- Taiwan-based Formosa Plastics Corp.'s Point Comfort, Texas, plant is expected to come online in 2019;
- Bangkok, Thailand-based Indorama Ventures is expected to restart its Carlyss cracker in Louisiana;
- Tokyo-based Shin-Etsu Chemical Co. Ltd. plans to start up its cracker in Louisiana this year; and
- Sandton, South Africa-based Sasol Ltd. is expected to complete its Louisiana cracker in 2020.

Just as important are the projects underway abroad to receive U.S. ethane. Indian refining giant Reliance Industries has built an import terminal and ethane pipeline and has placed orders with Samsung Heavy Industries for six very large ethane carriers. The ships, capable of carrying 87,000 cubic meters of liquefied ethane, cost about $120 million each. The first was delivered in 2016.

New tankers are being specifically designed to move ethane from the Marcus Hook, Pa., export terminal to INEOS petrochemical plants in Scotland and Norway. Marcus Hook will also be the origination point for shipments to the Borealis Group's plant in Stenungsund, Sweden. Those shipments are expected to begin in the middle of 2018. Borealis and Total have created a joint venture to build a $1.7 billion ethane steam cracker in Port Arthur, Texas.

Steel Tariffs: Waiting For The Worst

The Trump administration has been an ally to the energy industry, promising "energy dominance" from the campaign trail to the recent rollback of unnecessary regulations. But its latest move—tariffs imposed on imported steel and aluminum—is proving problematic for the industry.

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In a March 2018 letter to President Trump, nine trade associations including GPA Midstream warned the president of the tariffs' negative impacts. "We fear that broad tariffs on the specialty steels used by our industry would cause future projects to be delayed or canceled, thus threatening America's energy dominance and risking higher prices for families at the gas pump, natural gas ratepayers and energy-consuming employers nationwide," it warned.

On March 8, President Trump announced that the quantity of steel mill articles imported into the U.S. is a threat to national security and that he "decided to adjust the imports of steel mill articles … by imposing a 25% tariff on such articles imported from most countries, beginning March 23." Subsequently on May 31, Trump announced tariffs on steel and aluminum imports from Canada, Mexico and the EU. **—MATTHEW HITE** | CONTRIBUTOR

Linde's Technology Helps Turn Trash Into Treasure

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MIDLAND, Texas—Since the shale boom, midstream vendors have shifted focus from treating natural gas to processing out its treasure. This transition revolves around recovering valuable products from natural gas as opposed to converting it to marketable product.

Leaving the basic practices behind, Linde Engineering North America Inc. has advanced its technologies to adhere to the processing market.

During Hart Energy's Midstream Texas conference in June, Linde Engineering's president of natural gas and refining division, Carlos Conerly detailed the company's new ROC technology. Linde's development is an upgrade from both gas subcooled process (GSP) and recycle split vapor (RSV) plants.

"Lots of technology providers are looking at new processing approaches, however, most of those remain secret as the developers hope to capitalize on their efforts if, and when their processes come to market," he said.

—MARY HOLCOMB | HART ENERGY

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