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FEATURES

EIA: Gas To Overtake Coal In Power Generation This Year

By **JOSEPH MARKMAN**, Hart Energy

The U.S. Energy Information Administration (EIA) projects that 2016 is the tipping year from coal to natural gas in the fueling of U.S. power generation facilities.

The EIA's *Short Term Energy Outlook* forecasts that gas will provide 33% of electricity this year while coal's share dips to 32%—the first time that gas will have the largest share for a year. The share of non-hydro renewables is expected to rise to 8%. Hydropower's share is forecast to be 6%.

Though coal has long been the dominant energy source for producing electricity in the U.S., natural gas first surpassed coal on a monthly basis in April 2015 and the two fuels provided virtually the same amount of electricity generation last year.

Despite the advantages of natural gas over coal from an environmental perspective, economics has driven this trend. The huge increase in gas output from shale fields that began in 2009 narrowed the price difference between coal and gas and slowly cut into coal's 50% market share. The mild winter of 2011-2012 contributed to lower natural gas prices and a displacement of some coal-fired generation. Coal recaptured some of that share when gas prices rose during 2013 and 2014 but lost its advantage when oil and gas prices plummeted.

"Cheaper and more plentiful natural gas has fundamentally shifted our entire generation fleet," Tom Williams, spokesman for Duke Energy, told Hart Energy in a story to be published in the April issue of

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Midstream Business. "We've shut down 40 coal units since 2011 and almost all of that capacity has been replaced by natural gas plants."

The EIA believes that environmental regulations have played a secondary role in the decline of coal's generation share, but some owners of coal-fired plants may be forced to choose between retiring or reducing the utilization rate to comply with the Clean Power Plan, which requires lower CO_2 emissions from existing fossil fuel-fired power plants.

The plan is scheduled to take effect in 2022 but has been stayed by the Supreme Court while awaiting the outcome of ongoing litigation.

"There's a lot of uncertainty regarding the implementation of the Clean Power Plan," John Kneiss, Washington-based director for Stratas Advisors, told *Midstream Business* in the article, "in particular, the time line that may take place because of the litigation."

While a nominee, Merrick Garland, has been chosen by President Obama to succeed the late Associate Justice Antonin Scalia on the Supreme Court, it is not certain that the vacant seat will be filled this year. Kneiss said the Clean Air Act is unlikely to be considered until the court is full.

"This case is big enough and significant enough that it will wait until there are nine justices," he said. "There was a good chance the Supreme Court would have found faults with it and remanded it back to the EPA to make some changes based on the way the agency took its authority to regulate under the Clean Air Act."

Coal's share of the power generation market has also been chipped away by the growth of renewable energy sources, especially wind and solar, the EIA said. Unlike the increased use of gas, which was market-driven, the growth of renewables was pushed by a combination of state and federal policies.

Midstream Connect Series:
The Midstream Means Business

This year's Gas Processors Association convention in New Orleans on April 10-13 will provide attendees with important and information on how the midstream is evolving. Midstream Business Editor-in-Chief offers up a primer on what you can expect at this year's event. To view the video, please visit [Midstream Business.com]

First US Ethane Makes Port In Europe

By DARREN BARBEE, Hart Energy

After a voyage of 3,800 miles and an investment of $2 billion, INEOS *Intrepid*, the world's largest LNG multi-gas carrier, arrived in Rafnes, Norway with the first shipment of U.S. shale gas to hit European shores.

Jim Ratcliffe, chairman and founder of global petrochemical firm INEOS, said the Intrepid's voyage marked a strategically important day for INEOS and Europe.

"We know that shale gas economics revitalized U.S. manufacturing and for the first time ever Europe can access this essential energy and raw material source too," Ratcliffe said.

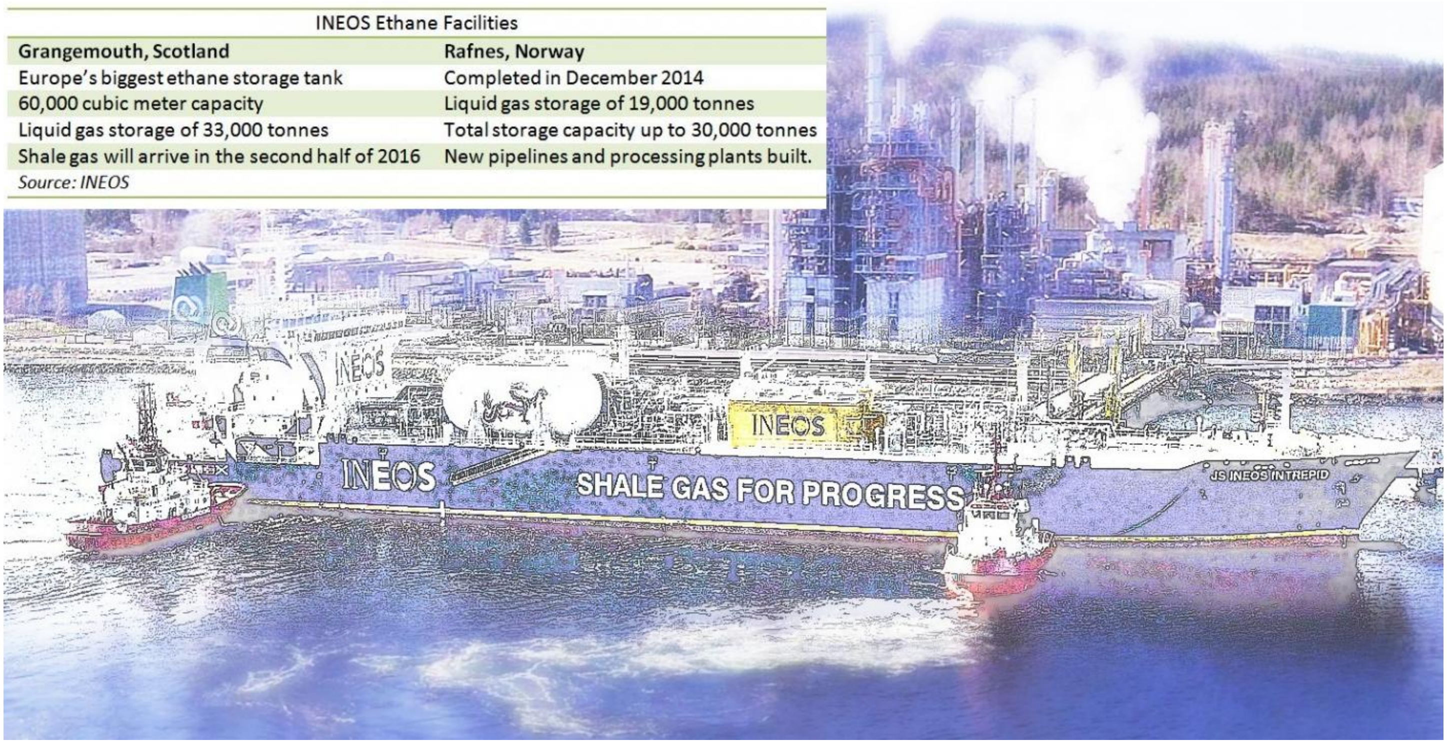
The INEOS ethane carrier		
Dragon Class Dimensions		
	Meters	Feet
Length	180,30	591.5
Beam	26,60	87.3
Depth	14,80	48.6
Source: INEOS		

The ship arrived at an INEOS petrochemicals plant carrying 27,500 cubic meters (971,153 cubic feet) of gas.

INEOS spent five years developing the design and long term charter of eight of its Dragon class ships with connection of the new 300 mile Mariner East pipeline from the Marcellus Shale to the Marcus Hook deep water terminal near Philadelphia, and the creation of new export facilities and storage tanks.

INEOS intends to eventually use eight of the huge ships to provide a virtual pipeline shipping US shale gas to its two petrochemical sites

INEOS Ethane Facilities	
Grangemouth, Scotland	**Rafnes, Norway**
Europe's biggest ethane storage tank	Completed in December 2014
60,000 cubic meter capacity	Liquid gas storage of 19,000 tonnes
Liquid gas storage of 33,000 tonnes	Total storage capacity up to 30,000 tonnes
Shale gas will arrive in the second half of 2016	New pipelines and processing plants built.
Source: INEOS	



in Norway and Scotland, as U.S. shale gas replaces the reducing gas feed from the North Sea. During the course of their contracts, each vessel will travel the equivalent of five journeys from the earth to the moon.

INEOS has constructed the two largest ethane gas storage tanks in Europe at Rafnes in Norway and Grangemouth in Scotland to receive the gas. INEOS will use the ethane from U.S. shale gas in its two gas crackers at Rafnes and Grangemouth, both as a fuel and as a feedstock. The company expects shipments to Scotland will start later this year.

Ethane Prices Primed To Begin Recovery In 2017

By **FRANK NIETO**, Hart Energy

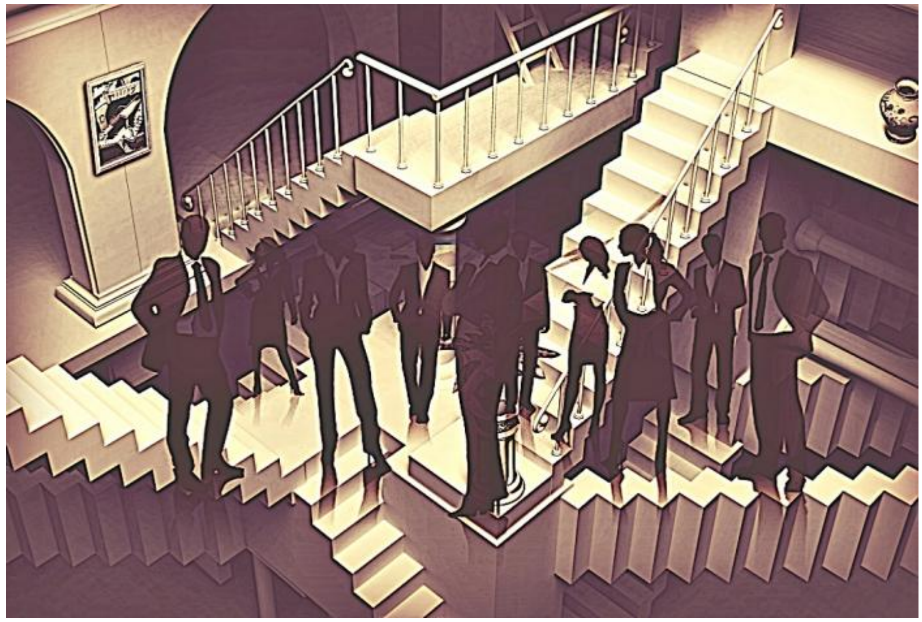
The ethane market's recent uptick in prices improved alongside crude, delivering their strongest margins in two years due to lower gas prices.

Nevertheless, prospects for a price recovery are expected to linger until in 2017 when the full impact of rejection and exports are felt, according to Bentek Energy's Kendall Puig, senior analyst, NGL and LPG.

"Exports are still a small demand source [for ethane]. We're very long on ethane right now and we're seeing rejection occurring across pretty much all basins," she said while speaking on a webcast presented by Deutsche Bank Market Research on March 17.

Since ethane has a more limited customer base than the rest of the NGL bbl. Puig said she doesn't see as much potential for a spot market to develop.

Puig noted that while Sunoco Logistics is now transporting both ethane and propane to Marcus Hook via the Mariner East 1 system and is on the cusp of exporting both products from its terminal at the facility, it has a limited capacity to take ethane. In addition, Enterprise Products Partners won't complete its 200,000 barrel per



day (bbl/d) Morgan's Point, Texas, ethane export terminal until third quarter 2016 and it will take three to four years for that project to reach full capacity due to logistical issues.

Exports will have a positive impact on the market, but the ethane export market is more limited compared to other hydrocarbon and NGL products. "The global feed-slate is really naphtha dominated, and there is not a lot of crackers from an engineering and infrastructure standpoint that have the ability to crack ethane." Shipping ethane by sea also require specific vessels, which are typically connected with a specific project since they need to be built because of the limited export market. There are similarities in the way that contracts related to these projects are set up as they typically involve long-term agreements between a specific supplier and petrochemical producer, Puig said. This will likely cause only contracted volumes to be moved abroad via shipping vessel.

"I think these projects coming online will definitely decrease rejection to some extent, but I don't think it will really move ethane prices substantially in 2016. [Mariner East 1] has 70,000 bbl/d in capacity and it also flows some propane. We estimate that current rejection in the Northeast is around 175,000 bbl/d. Having these exports will decrease it a bit, but there will still be rejection occurring in the basin," she said.

As exports begin to ramp up in the next few years, ethane cracking capacity will greatly expand as well with eight new crackers under construction along the Gulf Coast. These facilities will approximately 530,000 bbl. per day of incremental capacity, but this added capacity will be staggered over several years.
Bentek Energy is forecasting total ethane demand at 190,000 bbl/d in 2016 and 198,000 bbl/d in 2017, which includes this additional capacity as well as some ethane-to-propane switching at existing crackers when several new ethane-only crackers come online.

Puig said that additional demand will be reflected by increased prices beginning in 2017 with prices really taking off in 2018 and 2019. It will require full recovery in PADD III and PADD II in 2017 and then increased recovery in PADD I and PADD IV after in order to cover some of the transportation and fractionation costs.

"The magnitude of this increase really depends on the actual timing of when [new] crackers come online and what is happening in terms of supply growth in different regions," she said. Puig added that Enterprise's 125,000 bbl. per day ATEX (Appalachia to Texas) Pipeline will also need to be expanded to meet demand along the Gulf Coast. While the system can be expanded to 265,000 bbl. per day, it will take 18 months and new volume commitments. If this expansion doesn't take place it could result in stranded volumes in the Northeast and tighten the Gulf Coast market.

While demand and prices will increase, Puig said that rejection will continue in 2017 though it will decrease significantly. Bentek anticipates rejection levels to fall 235,000 bbl/d in 2017, which is about half of the 2015 rejection level.

FRAC SPREAD

Frac Spread: The Market Gets Some Building Blocks

By **FRANK NIETO**, Hart Energy

The heavy end of the NGL barrel (bbl) continued to make gains as West Texas Intermediate (WTI) crude prices held firm around $40/bbl with higher gasoline demand caused by lower crude prices. The market remains hopeful that an agreement among OPEC and major non-OPEC oil producers to freeze production can be reached at a meeting in Doha, Qatar, on April 17.

While the terrorist attacks in Belgium this week resulted in the overall stock market taking a downturn, prices stabilized back to the same level as last week. Current prices are certainly well off their 2014 levels before the market downturn, but there is growing evidence that a floor is forming and a recovery can begin off of it.

Pentanes-plus (C5+) prices hit their highest levels since the first week of 2015 as it benefited from improved WTI prices. The Mont Belvieu price rose 5% to 90 cents per gallon (/gal.) while the Conway price increased 6% to 89 cents/gal.

The lighter NGL products saw some struggles with slight decreases in ethane prices as the market leveled off after surging the previous week. Ethane still posted its second-highest price of the year at Mont Belvieu and its highest price in more than a month at Conway.

Propane has been the success story of 2016 as far as commodities are concerned as exports have worked off a substantial amount of the overhang that was in place heading into this winter. Analysts anticipated a large build due to a mild winter that would limit heating demand, but lower prices have created arb levels that have encouraged very high export demand. This demand has also been supported by new export capacity along the Gulf Coast.

RESIN PRICES – MARKET UPDATE – MARCH 25, 2016

TOTAL OFFERS: 14,880,036 lbs		SPOT		CONTRACT	
Resin	Total lbs	Low	High	Bid	Offer
PP Homopolymer - Inj	3,768,348	0.545	0.71	0.6	0.64
LLDPE - Film	2,608,784	0.49	0.59	0.505	0.545
HDPE - Blow Mold	1,970,944	0.48	0.545	0.485	0.525
LDPE - Film	1,372,116	0.555	0.61	0.535	0.575
HDPE - Inj	1,366,852	0.53	0.565	0.495	0.535
PP Copolymer - Inj	1,248,208	0.58	0.665	0.62	0.66
LLDPE - Inj	1,058,208	0.58	0.615	0.535	0.575
LDPE - Inj	705,472	0.6	0.63	0.545	0.585
HMWPE - Film	529,104	0.48	0.53	0.5	0.54
Scrap/Regrind/Repro	252,000	0.5	0.53		

Source: Plastics Exchange – www.theplasticsexchange.com

The theoretical NGL bbl. price rose 1% at both hubs with the Conway price increasing to $17.43/bbl with a 1% gain in margin to $11.44/bbl The Mont Belvieu price was up to $18.75/bbl. with 4% gain in margin to $12.40/bbl.

The most profitable NGL to make at both hubs remained C5+ at 71 cents/gal at both hubs. This was followed, in order, by isobutane at 42 cents/gal. at Conway and 39 cents/gal at Mont Belvieu; butane at 33 cents/gal at Conway and 36 cents/gal. at Mont Belvieu; propane at 27 cents/gal at Conway and 30 cents/gal at Mont Belvieu; and ethane at 3 cents/gal at Conway and 7 cents/gal. at Mont Belvieu.

CURRENT FRAC SPREAD (CENTS/GAL)				
MARCH 25, 2016	**Conway**	**Change from Start of Week**	**Mont Belvieu**	**Last Week**
Ethane	13.95		18.22	
Shrink	10.87		11.54	
Margin	3.08	-11.41%	6.68	6.88%
Propane	41.52		46.12	
Shrink	15.02		15.94	
Margin	26.50	-3.75%	30.18	0.18%
Normal Butane	49.72		54.26	
Shrink	17.01		18.04	
Margin	32.71	-0.86%	36.22	3.22%
Isobutane	57.90		56.08	
Shrink	16.33		17.33	
Margin	41.57	-4.81%	38.75	3.08%
Pentane+	89.00		90.04	
Shrink	18.19		19.30	
Margin	70.81	7.81%	70.74	7.45%
NGL $/Bbl	17.43	0.74%	18.75	1.09%
Shrink	5.99		6.36	
Margin	11.44	0.80%	12.40	4.16%
Gas ($/mmBtu)	1.64	0.61%	1.74	-4.40%
Gross Bbl Margin (in cents/gal)	25.92	0.38%	28.61	3.90%
NGL Value in $/mmBtu (Basket Value)				
Ethane	0.77	-2.31%	1.00	-0.55%
Propane	1.44	-2.21%	1.60	-1.45%
Normal Butane	0.54	-0.36%	0.59	0.56%
Isobutane	0.36	-3.34%	0.35	0.65%
Pentane+	1.15	6.26%	1.16	4.67%
Total Barrel Value in $/mmbtu	4.25	0.06%	4.70	0.60%
Margin	2.61	-0.29%	2.96	3.79%

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 NGPL Midcontinent zone, Mont Belvieu based on Houston Ship Channel.

NGL PRICES						
Mont Belvieu	**Eth**	**Pro**	**Norm**	**Iso**	**Pen+**	**NGL Bbl**
March 16 - 22, '16	18.22	46.12	54.26	56.08	90.04	**$18.75**
March 9 - 15, '16	18.32	46.80	53.96	55.72	86.02	**$18.55**
March 2 - 8, '16	15.95	44.76	52.98	54.48	80.86	**$17.51**
Feb. 24 - March 1, '16	14.10	41.30	53.24	53.52	75.40	**$16.43**
February '16	14.83	37.42	53.83	53.80	69.04	**$15.68**
January '16	14.99	33.52	49.29	49.26	73.66	**$15.20**
4th Qtr '15	17.50	42.15	60.09	60.57	97.59	**$19.11**
3rd Qtr '15	18.26	40.99	54.16	55.19	100.10	**$18.80**
2nd Qtr '15	17.93	46.30	58.11	59.66	126.14	**$21.48**
1st Qtr '15	18.38	53.01	66.35	67.81	110.53	**$21.94**
March 18 - 24, '15	18.36	50.64	59.36	60.44	112.20	**$21.20**
Conway, Group 140	**Eth**	**Pro**	**Norm**	**Iso**	**Pen+**	**NGL Bbl**
March 16 - 22, '16	13.95	41.52	49.72	57.90	89.00	**$17.43**
March 9 - 15, '16	14.28	42.46	49.90	59.90	83.76	**$17.30**
March 2 - 8, '16	12.18	40.58	49.92	57.16	80.80	**$16.46**
Feb. 24 - March 1, '16	11.10	37.10	47.78	58.16	74.76	**$15.37**
February '16	13.09	33.72	48.44	60.06	69.16	**$15.00**
January '16	14.14	30.31	46.42	53.17	72.76	**$14.72**
4th Qtr '15	14.90	38.06	57.31	64.04	95.84	**$18.20**
3rd Qtr '15	15.47	36.28	48.59	54.34	99.10	**$17.59**
2nd Qtr '15	15.50	40.55	52.40	56.80	121.50	**$19.89**
1st Qtr '15	17.81	49.00	66.13	76.84	106.32	**$21.49**
March 18 - 24, '15	18.35	46.60	56.90	64.10	106.92	**$20.51**

These improved margins were supported by lower natural gas prices, which remain challenged at prices well under $2 per million Btu (/MMBtu) due to high production levels. Bentek Energy released a forecast that production in the Lower 48 states averaged 73.3 billion cubic feet per day (Bcf/d) in February, up 1.4 Bcf/d from the January average. This average was the highest that Bentek has reported since it began tracking production in 2005. The increase was attributed to growth in the Appalachian Basin, which is offsetting declines in other parts of the country. The company noted that while the rig count is down, inventory wells being brought online resulted in the increase.

Natural gas storage levels are expected to exit the heating demand season nearly 1 trillion cubic feet (Tcf) above historical averages at about 2.5 Tcf, according to a March 23 research note from Tudor, Pickering, Holt & Co. This will make it difficult for the natural gas market to achieve balance before the end of the summer cooling season.

"[T]he gas market will have 30 weeks to fix this storage overhang in order to clear the 4.3 Tcf storage cap. The market will need to hold the current 3 Bcf/d undersupply and see at least normal weather to get there. Gas production declines and new LNG export demand both provide a tailwind to keep supply-demand tight but the primary driver will continue to be gas generation market share gains on the back of low prices," the note said.

MORE TOP STORIES

Refiners May Face Supply, Credit Questions As Upstream Distress Grows

By GREGORY MORRIS, Special To Hart Energy

By some estimates as many as one-third of all North American independent producers are at least considering some form of financial restructuring or even bankruptcy as perilously low crude prices persist for more than a year and a half. The "lower-for-longer" outlook for oil is now spreading downstream as recent court decisions modifying or voiding supply contracts have shaken the financial security of many midstream operators. There has yet been no material impact downstream on refiners or petrochemical companies, but industry analysts caution that if current conditions persist, some refiners may face questions about their financial involvement in the midstream, or even their supply situation.

In a closely followed bankruptcy proceeding this week, the U.S. Bankruptcy Court for the Southern District of New York, allowed Sabine Oil & Gas Corp. to discard costly midstream service agreements, deeming the agreements to be executory contracts rather than interests in real property.

"In making this ruling, the court suggested that these midstream agreements were generally not bankruptcy-proof in that they failed to establish the necessary criteria to convey a real property interest," said Teri Viswanath, a managing director with PIRA Energy Group. "Making a relatively important distinction, Judge Chapman highlighted that Texas law considers extracted oil and gas to be personal, not real property. Consequently, the production acreage is seemingly not encumbered by these agreements."

Even though the Court's opinion will not be the final say on the treatment of midstream contracts in bankruptcy, the analysis presented suggests that these transactions are not as ironclad as originally anticipated, Viswanath explained. "At a minimum, the court's decision forces midstream firms, with exposure to distressed producers, to determine whether they now have less bargaining power should these companies seek bankruptcy protection. A few industry observers have even suggested that the ruling will lead to more bankruptcies, given the precarious financial conditions of roughly one-third of oil and gas producers. Yet, we sense that the changed circumstances will more likely lead to new negotiations to re-balance the underlying commodity risk. All told, it would appear no safe harbor exists for those companies tied to a weakened supply chain."

At the end of that now perilous supply chain, are refiners. “Refiners are facing some very important questions,” Viswanath added. “Over the past few years we saw great disintermediation through the whole crude system. That means that now, to feed the machine, refiners are at risk when these price shocks expose weakness in the supply chain. On top of that, with the carnage in share prices for midstream operators, there are credit and operating concerns there.”

As a whole, the midstream supply chain is large enough and broad enough to survive the current financial upheavals, according to Arvinder Saluja, vice president and senior analyst at Moody’s Investors Service. But, if current conditions persist or worsen, some refiners may be at risk. Particularly, those would most likely be smaller companies with just one or two facilities, especially if those are only supplied by one crude pipeline. Other refiners may be under some financial pressure to the extent that they own midstream assets, Saluja detailed.

“Most refiners have several assets and they should be able to adjust,” he said. “It does not seem that crude supplies in the U.S. are rolling over too quickly. Supplies are ample. The bigger concern at this point is the differential. At the end of the day, refiners are tollers; they live and die on margin. Crack spreads are based on global supply and demand, not local or regional. The global situation is tied more to Brent than to WTI.”

So far the effects of contract voidance have been limited to the midstream, Saluja added. “But there could be an issue for refiners that are tied to midstream operations. That is definitely a worry. The knock-on effect from commodity price exposure to the midstream could be material.”

That commodity price risk shows no signs of recovering. Indeed, just after the Sabine bankruptcy decision was handed down, Linn Energy, once one of the brightest stars in the upstream sector, issued its latest guidance. The next day Moody’s revised its ratings on Linn.

Moody’s downgraded Linn’s corporate family rating to Ca from Caa1, probability of default rating to Ca-PD from Caa2-PD, its second lien secured notes to C, its unsecured notes to C, and its speculative grade liquidity rating was lowered to SGL-4 from SGL-3. At the same time, Moody’s downgraded Berry Petroleum’s senior unsecured notes to Ca from Caa2. The rating outlooks at Linn and Berry are negative.

Tidewater Midstream And Infrastructure Closes Bought Deal Financing

Tidewater Midstream and Infrastructure Ltd. closed its bought deal financing in which 57.5 million common shares were issued at CA$1.40 each for gross proceeds of CA$80.5 million, the company said March 23.

The net proceeds will reduce debts partially incurred to fund the acquisition of certain AltaGas Ltd. infrastructure assets; this acquisition closed on February 29. The proceeds will also support general corporate purposes.

The syndicate of underwriters was co-led by CIBC World Markets Inc., Macquarie Capital Markets Canada Ltd. and National Bank Financial Inc. It included Beacon Securities Ltd., Acumen Capital Finance Partners Ltd., FirstEnergy Capital Corp., GMP Securities LP, Cormark Securities Inc., Paradigm Capital Inc., AltaCorp Capital Inc., Canaccord Genuity Corp. and Desjardins Securities Inc.

Tidewater Midstream and Infrastructure Ltd. is based in Calgary, Alberta.

-REUTERS

Williams Launches Second Offgas Processing Plant In Canada

Williams Cos. Inc. said March 23 it has launched a second offgas processing plant in Alberta, advancing its "unique position" in Canada.

The new offgas liquids extraction plant boosts domestic production of petchem feedstocks and significantly reduces emissions in the oil sands production process while recovering valuable NGL and olefins, the release said.

The plant was designed to reduce CO_2 emissions from oil sands production facility by about 200,000 tonnes per year. It will also add 15,000 barrels per day, or 60%, to Williams' NGL production capacity in Canada. Williams said the plant is a key asset in the Tulsa, Okla.-based company's unrivaled value-add Canadian midstream and petchem business backed by multi-decade contracts.

-BUSINESS WIRE

Sunoco Logistics Conducts Hydrotest On Mid-Valley Pipeline

Sunoco Logistics is conducting a hydrotest on its 280,000 barrel-per-day Mid-Valley Pipeline running from Longview, Texas, to Samaria, Mich., and plans to conduct a second hydrotest next month, according to trade sources.

The first hydrotest began on March 16 and will finish on March 25, the source said.

A second test will begin on April 8 and be complete on April 17, a source said.

Sunoco declined to comment on the pipeline.

-REUTERS

Contact Information:

FRANK NIETO Senior Editor
fnieto@hartenergy.com

Contributing Editors: Velda Addison, Darren Barbee, Jay Bolan, Nissa Darbonne, Rhonda Duey, Annie Gallay, Leslie Haines, Paul Hart, Susan Klann, Joseph Markman, Richard Mason, Emily Moser, Brian Mothersole, Erin Pedigo, Larry Prado, Jennifer Presley, Chris Sheehan, Bryan Sims, Steve Toon, Len Vermillion, Theresa Ward, Scott Weeden, Peggy Williams

Graphic Designer: Felicia Hammons

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1616 S. Voss, Suite 1000 • Houston TX 77057-2627 • USA