

NiSource Leverages Appalachian Assets

The company is developing three projects in Marcellus-Utica plays.

BY **FRANK NIETO** | EDITOR, MIDSTREAM MONITOR, MIDSTREAMBUSINESS.COM

As the Marcellus and Utica shales have increased their importance to the U.S. natural gas and energy markets, so, too, has NiSource expanded its reach across the energy value chain.

“We serve high-value energy markets in 16 states with gas transmission, storage, processing and gathering services, including a large portion of the Marcellus and Utica shales,” Jim Avioli, director of commercial development for NiSource, said last month at Hart Energy’s Marcellus-Utica Midstream Conference in Pittsburgh.

Traditionally the company’s footprint in this region has been represented by Columbia Gas Transmission, Columbia Gulf Transmission and Millennium Pipeline through gas storage and transportation services. The company’s growth vehicle is through NiSource Midstream Services, which is adding gathering and processing services in the region.

The company is leveraging its strategic location and asset base to develop three gathering and processing projects in Marcellus-Utica



Location was the key | NiSource’s existing assets in the Appalachian Basin were a key component to it being a first mover in the Marcellus and Utica shales, according to Jim Avioli, the company’s director of commercial development. (Courtesy: Hart Energy)

plays at a total consideration of between \$1 billion and \$1.5 billion. This includes the Majorsville gathering system that is up and running along with the Big Pine gathering system in the last stages of development and the Hickory Bend gathering and processing system that has just initiated construction.

NiSource was an early mover in the Marcellus through the Majorsville system, located in

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HIGHLIGHTS FROM TODAY’S EDITION



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PROCESSING TRENDS

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All for One

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The reversal of Kinder Morgan’s Cochin Pipeline will have a huge impact on the condensate market.

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NGL PRICES & FRAC SPREAD | Week in Review

Conway NGL Prices Fall As Market Rebalances

BY **FRANK NIETO** | EDITOR, MIDSTREAM MONITOR,
MIDSTREAMBUSINESS.COM

Conway natural gas liquid (NGL) prices took a major downturn last week as the market seemed to balance out after being somewhat short on C₅₊ and ethane the previous week.

The downturn in prices the week of February 6 was somewhat surprising since heating demand was still strong as a result of colder-than-normal temperatures. In addition, heavy

CURRENT FRAC SPREAD (CENTS/GAL)				
February 19, 2013	Conway	Change from Start of Week	Mont Belvieu	Start of Week
Ethane	23.74		24.90	
Shrink	21.35		21.75	
Margin	2.39	-58.48%	3.15	-20.81%
Propane	80.36		84.66	
Shrink	29.50		30.04	
Margin	50.86	-1.48%	54.62	-3.25%
Normal Butane	156.88		163.74	
Shrink	33.39		34.01	
Margin	123.49	-9.61%	129.73	-5.02%
Iso-Butane	168.00		174.28	
Shrink	32.07		32.67	
Margin	135.93	-6.02%	141.61	-5.02%
Pentane+	233.83		236.30	
Shrink	35.71		36.38	
Margin	198.12	-9.49%	199.92	0.88%
NGL \$/Bbl	42.05	-6.99%	43.20	-1.54%
Shrink	11.76		11.98	
Margin	30.29	-8.95%	31.21	-2.45%
Gas (\$/mmBtu)	3.22	-1.53%	3.28	0.92%
Gross Bbl Margin (in cents/gal)	67.64	-8.71%	70.42	-2.58%
NGL Value in \$/mmBtu				
Ethane	1.31	-13.48%	1.37	-2.47%
Propane	2.79	-1.50%	2.94	-1.81%
Normal Butane	1.69	-8.00%	1.77	-3.84%
Iso-Butane	1.05	-5.19%	1.08	-3.96%
Pentane+	3.02	-8.36%	3.05	0.89%
Total Barrel Value in \$/mmbtu	9.85	-6.86%	10.21	-1.71%
Margin	6.63	-9.25%	6.93	-2.91%

NGL PRICES						
Mont Belvieu	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Feb. 6 - 12 '13	24.90	84.66	163.74	174.28	236.30	\$43.20
Jan. 30 - Feb. 5 '13	25.53	86.22	170.28	181.46	234.22	\$43.87
Jan. 23 - 29 '13	24.86	86.04	172.94	182.94	232.43	\$43.80
Jan. 16 - 22 '13	23.97	82.05	163.25	175.93	210.87	\$41.03
January '13	23.45	83.42	170.21	181.12	223.98	\$42.51
December '12	22.97	79.70	175.77	184.25	214.89	\$41.75
4th Qtr '12	26.59	88.74	162.76	181.71	215.67	\$42.69
3rd Qtr '12	32.34	89.27	142.76	161.88	200.54	\$41.03
2nd Qtr '12	37.00	97.80	160.76	175.08	207.57	\$44.54
1st Qtr '12	53.93	125.90	192.36	204.32	238.95	\$55.05
Feb. 8 - 14, '12	43.30	121.66	186.20	191.88	240.00	\$52.33
Conway, Group 140	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Feb. 6 - 12 '13	23.74	80.36	156.88	168.00	233.83	\$42.05
Jan. 30 - Feb. 5 '13	27.44	81.58	170.53	177.20	255.15	\$45.21
Jan. 23 - 29 '13	25.68	81.62	178.30	179.42	230.08	\$43.69
Jan. 16 - 22 '13	22.10	77.80	164.73	168.48	216.77	\$40.74
January '13	22.55	78.62	172.77	171.79	221.36	\$41.73
December '12	18.42	73.02	188.65	178.77	211.62	\$40.74
4th Qtr '12	18.45	79.24	164.46	174.39	209.16	\$39.94
3rd Qtr '12	14.60	70.25	124.35	165.61	195.68	\$34.99
2nd Qtr '12	11.18	72.63	135.80	161.38	203.31	\$35.72
1st Qtr '12	26.93	103.34	168.65	184.75	227.16	\$45.92
Feb. 8 - 14, '12	14.82	97.18	156.92	167.43	224.38	\$41.93

(Above) Data Provided by Intercontinental Exchange. Individual product prices in cents per gallon. NGL barrel in \$/42 gallons | Source: Frank Nieto

(Left) 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%, Production and transport costs not included.

Conway gas based on NGPL Midcontinent, Mont Belvieu based on Houston Ship Channel.

Shrink is defined as Btus that are removed from natural gas through the gathering and processing operation. Source: Frank Nieto

NGLs should have performed better since crude oil prices continued to hover around \$100 per barrel (/bbl.).

Instead the C₅₊ price tumbled 8% to \$2.34 per gallon (/gal), though this remained the second-highest price at the hub since April 2012. In reality, there was a sizable downturn in price from the previous week, but overall the

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NGL PRICES & FRAC SPREAD | Week in Review

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price remains strong when compared to prices from the previous 12 months.

The same is somewhat true in the case of Conway ethane as it was down 13% to 24¢/gal. This was the second-highest price at the hub since March 2012. The good news is that frac spread margins remained

positive despite a 59% decrease from the prior week.

Mont Belvieu ethane and C₅₊ performed in a much more expected way as ethane was down slightly at 2% to 25¢/gal from 26¢/gal the previous week while the C₅₊ price improved 1% to \$2.36/gal. This was its highest price since it was \$2.38/gal the week of April 11.

Natural gas prices also moved in opposite directions between the two hubs as the Conway price fell 2% to \$3.22 per million Btu (/MMBtu) and the Mont Belvieu price improved 1% to \$3.28/MMBtu.

Propane prices dipped at both hubs as the market remains oversupplied. In addition there were reports that some trad-

KEY NORTH AMERICAN HUB PRICES	
2:30 PM CST / February 14, 2013	
Gas Hub Name	Current Price
Carthage, TX	3.23
Katy Hub, TX	3.26
Waha Hub, TX	3.21
Henry Hub, LA	3.30
Perryville, LA	3.27
Houston Ship Channel	3.27
Agua Dulce, TX	3.59
Opal Hub, Wyo.	3.29
Blance Hub, NM	3.25
Cheyenne Hub, Wyo.	3.25
Chicago Hub	3.43
Ellisburg NE Hub	3.33
New York Hub	3.52
AECO, Alberta	3.00

Source: Bloomberg

Conway price dipped 1% to 80¢/gal, which was also its lowest price in a month. The Conway frac spread margin dropped 2% as a result of the downturn in gas prices. The Mont Belvieu margin fell 3%, primarily due to improved natural gas feedstock prices.

ers were selling off propane in advance of an expected downturn in heating demand as weather forecasts anticipate temperatures to normalize for the bulk of the remainder of winter in the Northeast while warming up slightly in parts of the Midwest and South.

The Mont Belvieu price decreased 2% to 85¢/gal, its lowest price in a month. This resulted in a 3% drop in margin. The

RESIN PRICES – MARKET UPDATE – FEBRUARY 14, 2013					
TOTAL OFFERS: 16,603,792 lbs		SPOT		CONTRACT	
Resin	Total lbs	Low	High	Bid	Offer
LDPE - Film	4,135,888	0.69	0.75	0.67	0.71
LDPE - Inj	3,559,888	0.725	0.85	0.74	0.78
HDPE - Blow Mold	2,992,300	0.71	0.91	0.81	0.85
LLDPE - Inj	2,226,496	0.625	0.725	0.64	0.68
PP Copolymer - Inj	1,204,000	0.85	0.92	0.83	0.87
PP Homopolymer - Inj	746,644	0.66	0.77	0.67	0.71
HDPE - Inj	661,380	0.76	0.76	0.68	0.72
LLDPE - Film	573,196	0.67	0.78	0.71	0.75
HMWPE - Film	336,000	1.04	1.07	1.02	1.07
GPPS	84,000	1.02	1.02	0.68	0.72
HIPS	84,000	0.805	0.805	0.9	0.95

Source: Plastics Exchange – www.theplasticsexchange.com

The theoretical NGL barrel fell at both hubs with the Conway price experiencing a larger decrease. The price fell 7% to \$42.05/bbl. with a 9% drop in margin to \$30.29/bbl. The Mont Belvieu price decreased 2% to \$43.20/bbl. with a 3% drop in margin to \$31.21/bbl.

The most valuable NGL to make at both hubs was C₅₊ at \$1.98/gal at Conway and \$2.00/gal at Mont Belvieu. This was followed, in order, by isobutane at \$1.36/gal at Conway and \$1.42/gal at Mont Belvieu; butane at \$1.24/gal at Conway and \$1.30/gal at Mont Belvieu; propane at 51¢/gal at Conway and 55¢/gal at Mont Belvieu; and ethane at 2¢/gal at Conway and 3¢/gal at Mont Belvieu.

Natural gas in storage for the week of February 8 decreased 157 billion cubic feet to 2.527 trillion cubic feet (Tcf) from 2.684 Tcf according to the Energy Information Administration. This was 10% below the 2.797 Tcf figure reported last year at the same time and 16% above the five-year average of 2.179 Tcf.

The National Weather Service's forecast for this week anticipates that winter temperatures will be normal in the Northeast, much of the Midwest and parts of the Gulf Coast. Parts of the Southeast are expected to experience warmer-than-normal temperatures with the West Coast experiencing colder than normal temperatures for winter.

PROCESSING TRENDS | An Inside Look

Deckelbaum: NGL Prices To Face Challenges In 2013

BY **FRANK NIETO** | EDITOR, MIDSTREAM MONITOR,
MIDSTREAMBUSINESS.COM

One of the big stories of 2012 was the large difference in prices for natural gas and natural gas liquids (NGL), but 2013 could see NGL values slip further from crude oil prices and create a period of “trifurcation,” according to David Deckelbaum, senior E&P analyst at KeyBanc Capital Markets.

Speaking at Hart Energy’s Marcellus-Utica Midstream Conference in Pittsburgh, last month, Deckelbaum said that as more producers focus on liquids-rich plays it is creating a glut of NGL supplies in the market that could weaken prices.

“A chief problem we see developing for many E&Ps is not the fear of crude oil weakening from \$96 per barrel (/bbl.) levels; rather it is the malaise of another year of abysmal gas pricing and potentially persistent weakness for NGL pricing,” he said.

NGL prices are down 25% on a year-on-year basis as supplies, especially for ethane and propane, are exceeding demand. “The situation shouldn’t be as dire as the natural gas market, but it likely won’t be correcting itself any time soon,” Deckelbaum said.

He stated that the correlation between NGL prices and crude prices has broken down significantly, which is creating an extra variable of concern for investors by pinching debt-adjusted growth and expanding multiples.

One of the headwinds that producers are facing in early 2013 is the ability to hedge NGL prices. Ethane is nearly impossible to hedge because of a combination of excess supplies and limited demand. Producers have found some success hedging heavy NGLs due to their strong correlation with crude prices, but this

is beginning to reach a bit of a tipping point with heavy NGLs making up only 25% of the NGL barrel, but nearly 50% of the revenue from a barrel of NGLs.

It is unlikely that there will be a large slowdown in liquids-focused drilling. However, the rig count should see some erosion in 2013 as a result of NGL prices dislocating from WTI crude prices. He estimated that if NGL prices decrease 30%, the Woodford Cana and the wet portion of the Eagle Ford shale would become marginal to produce.

“Our NGL-weighted universe is down 16% since the beginning of 2012, with the actual NGL barrel down 25% over the

same period,” he said. However, Deckelbaum noted that ultimately crude prices will still help NGL prices. “As such, WTI prices don’t truly disincentive drilling until the price reaches \$75/bbl.,” he said. This situation isn’t entirely bad for gas prices, as supply-and-demand levels are balancing in that market, as gas-directed rigs are cut back, according to Deckelbaum.

This improvement will be curtailed somewhat, though, as KeyBanc Capital Markets anticipates dry gas production to

increase about 9% in 2013 and 21% in 2014 due to associated gas and improved drilling technology. As more fractionation capacity is added in North America, this production could increase further.

The NGL market should also experience a similar situation as the investment firm anticipates liquids production to increase 21% in 2013 and about 24% in 2014. Despite some of the headwinds facing NGL prices in 2013, Deckelbaum stated that the market doesn’t face quite the same challenges as those that caused the natural gas market to crater in the last few years. “Not counting any ethane rejection, we would expect that NGL prices would have to fall another 40% before all NGL rigs are laid down,” he said.



STORMY WEATHER AHEAD | NGL prices are likely to experience difficulties in 2013, according to David Deckelbaum of KeyBanc Capital Markets (Courtesy: Hart Energy)

PROCESSING TRENDS | An Inside Look

Marcellus JV Partners Discuss The Power Of Collaboration

BY **MICHELLE THOMPSON** | HART ENERGY

Last March, Chesapeake Energy Corp. announced that its subsidiary, Chesapeake Midstream Development LP (now Access Midstream Partners LP), would build eastern Ohio's largest integrated midstream service complex. It would do so in partnership with M3 Midstream LLC (Momentum) and EV Energy Partners LP. The partnership said at the time it would invest about \$900 million during the next five years into the facility. The complex will include natural gas gathering and compression facilities and processing, natural gas liquids (NGL) fractionation, loading and terminal facilities.

During Hart Energy's recent Marcellus-Utica Midstream Conference in Pittsburgh in late January, partnership executives discussed the benefits and challenges of bringing the project to life. When undertaking a project, Momentum's chief executive Frank Tsuru told conference attendees that he always strives to join forces with the companies that control the drill bit and own the acreage.

"That's been a successful way to go," he said. "By collaborating with an upstream and a midstream company, what you can do right away is build for a very large project. And by building for a very large project, you enjoy the economies of scale."

Collaboration can also reduce the lag that exists between upstream and midstream projects, Tsuru added. This, he said, allows partnerships to build just-in-time assets.

"Nobody likes to have a processing plant or pipe or fractionators waiting there empty," said Tsuru. "And so we like to build them just in time."

When it's complete, the cryogenic processing facility will have an initial capacity of 600 million cubic feet (MMcf) per day. It will have a fractionation capacity of 90,000 barrels (bbl.) per day. The first 200 MMcf of cryogenic processing, alongside the associated fractionation, will go online this second quarter.

Of course, the joint venture didn't come without its challenges.

"We've had our share of them and, we continue to do so," said Tsuru. "But one of the things you have to continue to do in a joint venture where you have a midstream and an upstream company—

which really have different business plans — is to establish alignment, expectations and goals very early and stick to those. We've been able to do that."

Mark Edge, vice president of gas sales with Chesapeake Energy Marketing Inc., said that when embarking on a new project, his company strives to plan its production profile and the midstream facilities in advance. "And we also really look for someone who we have a history with," he said. "We had a history with Frank (Tsuru) in the Haynesville and also out here in the Marcellus."

Mark Houser, president of EV Energy Partners LP, said the opportunity to join the joint venture made sense for his company for numerous reasons.

"To us it just looked like a very good business opportunity for our public company EV Energy Partners because it eventually provides a long-term and predictable revenue stream and cash flow."

Macquarie: Natural Gas Likely A Lost Cause In 2013

BY **DARREN BARBEE** | HART ENERGY

So far, the 2012-2013 winter has been bleak in all the wrong ways.

With little snowfall, too few frozen days and a December in which 36 states in the Lower 48 averaged temperatures above or far above normal, the hope of chilled bones being warmed by natural gas fires has melted away.

Vikas Dwivedi, global oil and gas economist for the Macquarie Group, said at the Houston Energy Finance Group in January that a normal winter would have added 7 billion cubic feet (Bcf) per day of demand.

It just didn't happen.

"We think 2013 is really headed to be another lost year for gas," Dwivedi said.

But oil may have some surprises in store for the market, Dwivedi said, despite predictions that prices may fall.

For gas, at current trends, the U.S. looks to end up with 2.3 trillion cubic feet (Tcf) in the ground at the close of March.

"That sets us up to be back at 3.8 Tcf or 3.9 Tcf, minimum, on end of October storage," Dwivedi said.

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PIPELINES & TRANSPORTATION | Developments

Shale-Play Condensate Will Head To Canada

BY PEGGY WILLIAMS | HART ENERGY

Canada's demand for imported diluent will exceed 500,000 barrels (bbl.) per day by 2020, said Karen Kabin, director, business development, Products Pipelines for Kinder Morgan (KM). That's a business opportunity that Kinder Morgan has firmly in its sights: The midstream heavyweight is investing more than \$700 million for condensate gathering, processing and pipeline infrastructure to meet this growing market. Kabin spoke at Hart Energy's Marcellus-Utica Midstream conference and exhibition, held in Pittsburgh in January.

The linchpin of Kinder Morgan's efforts is the reversal of the 1,900-mile Cochin Pipeline. The 12-inch line, built in 1978, was originally built to carry products from Canada's prolific gas fields to eastern markets. Flow currently runs from Fort Saskatchewan, Alberta, to Windsor, Ontario. Design capacity was 112,000 bbl. per day, and the high-pressure system transported ethane, ethylene, propane and other mixed NGLs.

Kinder Morgan acquired its initial interest in the Cochin pipeline in 2000. At that time, Cochin was viewed as a large, stable system with a solid track record. But, markets were changing. Over time, the volumes of propane available for export declined and the ethane crackers at Joffre expanded. An incident on the line also led to a reduction in operating pressures on the U.S. side, which restricted capacity.

In 2007, Kinder Morgan acquired the remaining interest in the system from BP. As the new operator, Kinder Morgan reduced pressures in the Canadian portion to 600 pounds and reviewed the integrity of the entire system. It has spent the last five years rehabilitating the pipeline. Last year, Kinder Morgan developed an E-P mix program to move product from the Conway area to Sarnia, and received approval from regulators to raise line pressures. "E-P mix

is great for the short-term," said Kabin. E-P shipments should continue through early 2014.

But, a long-term solution was clearly needed. The surge in unconventional production in the U.S. has been radically altering markets. North Dakota's propane production averaged 12,500 bbl. per day in 2010, and by September 2012 it had reached 40,000 bbl. In the Marcellus and Utica plays in the Appalachian Basin, propane production is expected to exceed 400,000 bbl. per day in 2015, said Kabin. There is no use now for Cochin as originally conceived.

But, Canada's oil-sands production is driving a growing demand for diluent. By reversing the flow of Cochin, Kinder Morgan can

bring U.S. condensate, also a product of the shale-supply revolution, to those markets. The \$260-million Cochin Reversal project will have capacity to move 95,000 bbl. a day of light condensate. "It makes a logical outlet for all of the increased condensate production across the United States and certainly opens up access to the growing Canadian condensate market," said Kabin.

Additionally, KM plans to build a 12-inch, 200-mile condensate pipeline that will take Utica condensate to the Cochin system. It is partnering with Velocity Midstream on this Appalachian project. Velocity is also building a gathering system through the heart of the Utica shale condensate window, including terminals. "We are anticipating in-service of this project in the first half of 2015," said Kabin. "We believe it is by far the

most cost-effective solution to get 95,000 bbl. a day from Utica over to Western Canada."



MARKET RELIEF | Kinder Morgan's \$260 million Cochin Pipeline reversal will provide the U.S. condensate market with access to the growing Canadian condensate market, according to Karen Kabin, the company's director, business development (Courtesy: Hart Energy)

Apache, Chevron Complete Chevron Canada's Entry Into Kitimat LNG

Apache Corp.'s subsidiary Apache Canada Ltd. completed the previously disclosed transaction

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PIPELINES & TRANSPORTATION | Developments

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with Chevron Canada Limited to build and operate the Kitimat LNG project and develop world-class natural gas resources at the Liard and Horn River basins in British Columbia.

Chevron Canada, a subsidiary of Chevron Corp, and Apache Canada each have become a 50% owner of the Kitimat LNG plant, the Pacific Trail Pipelines and 644,000 gross undeveloped acres in the Horn River and Liard basins. After a brief transition period, Chevron Canada will assume operatorship of the LNG plant and the pipeline. Apache Canada increased its ownership in the LNG plant and pipeline from 40% and will operate the upstream assets. Apache's net proceeds from the transaction were \$405 million.

"With Chevron's LNG experience and Apache's upstream track record, this team is ideally suited to move this project forward toward delivering the tremendous resources at Liard and Horn River to meet Asia's growing demand for LNG," said G. Steven Farris, Apache's chairman and chief executive, said in a public statement.

Liard and Horn River are two of the most prolific shale gas plays in North America, with more than 50 trillion cubic feet of resource potential on the Apache-Chevron acreage.

Encana and EOG Resources formerly 30% non-operating owners in Kitimat LNG and Pacific Trail Pipelines—sold their interests and exited the venture.

Kitimat LNG, at Bish Cove on the northern British Columbia coast approximately 400 miles north of Vancouver, is currently completing front-end engineering and design, and early site work is under way. Current plans call for two liquefaction trains, each with expected capacity of 750 million cubic feet of gas per day. Kitimat LNG has received all significant environmental approvals and a 20-year export license from the Canadian federal government.

The 290-mile Pacific Trail Pipelines will provide a direct connection between the Spectra Energy Transmission pipeline system and the Kitimat LNG terminal. The project has strong support from many of the First Nations along the route.

Freeport LNG Signs 20-Year Contract With BP

Freeport LNG Expansion LP announced that it has entered into a binding 20-year Liquefaction Tolling Agreement (LTA) with BP for

4.4 million tons per annum (mtpa), equivalent to the production capacity of the second train of Freeport LNG's proposed natural gas liquefaction and LNG loading facility on Quintana Island near Freeport, Texas. The LTA with BP will commence upon completion of construction of the second liquefaction train.

In July 2012, Freeport LNG executed LTAs with Osaka Gas Co., Ltd. and Chubu Electric Power Co. for a total of 4.4 mtpa. The Osaka Gas and Chubu Electric LTAs commence upon completion of construction of the initial liquefaction train.

Project update

Commencement of construction of Freeport LNG's liquefaction project is subject to receipt of regulatory approvals and final investment decision by Freeport LNG. Key regulatory approvals include Federal Energy Regulatory Commission (FERC) authorization to commence construction and Department of Energy (DOE) approval to export LNG to non-Free Trade Agreement (non-FTA) countries.

Freeport LNG is next in line to receive DOE approval, which would cover the entire production volume of the initial two liquefaction trains and would allow for Freeport LNG to begin exporting to non-FTA countries immediately upon completion of construction. The DOE is expected to commence review of Freeport LNG's pending non-FTA export application immediately after the period for response to the initial comments raised in respect of DOE's 2012 LNG Export Study ends on February 25, 2013. Freeport LNG's second DOE application covering up to two additional trains of production volume is fourth in line in the order established by DOE for review and processing of pending non-FTA export applications.

Freeport LNG expects to receive FERC approval to commence construction of the first three liquefaction trains in the third quarter of 2013, and to begin construction of the first two trains in the fourth quarter of 2013. The first train is anticipated to commence operations approximately 48 months from start of construction, with the second train in operation six to nine months after the first train. Marketing of the capacity of the third train is anticipated to be completed before year end, with financing to be closed and construction to begin on the third train as early as late-2014.

NEWS & TRENDS | Up To Date

MarkWest, The Energy & Minerals Group Provide Funding For Utica Shale

MarkWest Energy Partners LP and The Energy & Minerals Group (EMG) announced that the parties have executed a term sheet, which increases EMG's initial capital contribution in MarkWest Utica EMG LLC (Utica Joint Venture) by up to \$450 million, bringing their total initial contribution to up to \$950 million. The transaction allows EMG to increase its contribution in one of the fastest-growing and highly-prospective shale plays in the United States and provides MarkWest with significant additional financial flexibility in the timing of its capital contributions to the Utica Joint Venture. The transaction does not modify the ownership interest levels or quarterly distribution percentages as set forth in the existing Limited Liability Company Agreement (L.L.C. Agreement) between the parties.

MarkWest and EMG also executed an amendment to the L.L.C. Agreement that provides for MarkWest to contribute up to \$150 million to the Utica Joint Venture on a short-term basis. EMG is expected to provide additional funding by the end of February and in no instance any later than the end of the first quarter of 2013 at which point in time, MarkWest will receive a distribution substantially equivalent to its short-term contribution to the Utica Joint Venture. MarkWest anticipates utilizing a portion of its available liquidity resulting from its recently completed capital market transactions for the interim funding.

The Utica Joint Venture is currently developing a fully integrated midstream system to support rapidly expanding development plans of producers including Antero Resources, Gulfport Energy Corporation and Rex Energy. The system includes extensive low- and high-pressure gas gathering systems, natural gas liquids (NGL) pipelines, and two large-scale processing complexes that will have nearly 800 million cubic feet (MMcf) per day of processing capacity.

The two processing complexes will be connected by a high-pressure rich-gas pipeline header that will provide

enormous flexibility and redundancy for producer customers operating in the core liquids-rich area of the Utica Shale. MarkWest Utica will construct an NGL gathering line between its processing complexes and on to the Hopedale fractionation and marketing complex located in Harrison County, Ohio. The Cadiz processing complex will include a de-ethanization facility where purity ethane will be produced and delivered into the ATEX ethane pipeline. The propane and heavier natural gas liquids will then flow via pipeline to the Hopedale fractionator for further separation into valuable purity products. Together these facilities will represent the largest fractionation and marketing complex in the Utica Shale, providing 100,000 barrels per day of C₂₊ fractionation capacity with an expected completion date of first-quarter 2014. The Hopedale facility will also be connected by pipeline to MarkWest's extensive NGL infrastructure in the Marcellus Shale and to its Houston, Pennsylvania complex, the largest fractionation and marketing facility in the Northeast.

Tristream Opens Third-Party Sweet Condensate Stabilization Terminal

Tristream East Texas LLC has announced that it has completed the first phase of expanding its condensate stabilization business at its Myrtle Springs Facility in Van Zandt County, Texas. Tristream is now capable of stabilizing 3,000 barrels (bbl.) per day of third-party sweet condensate at Myrtle Springs. Expansion plans are under way to double capacity to 6,000 bbl. per day.

The truck-based facility operates 24/7 and will accept sweet raw condensate up to 150 pounds per square inch (psig) and produces a finished product of 8-11 psig Reid vapor pressure. The condensate operation is totally independent of Tristream's existing sour gas processing operations. Tristream plans to activate 5,000 bbl. per day of additional stabilization capacity for third-party service at its Eustace facility.

NEWS & TRENDS | Up To Date

Eureka Resources To Construct Marcellus Wastewater Treatment Plant

Eureka Resources LLC has announced the construction of a new wastewater treatment facility to serve oil and gas producers involved in Marcellus Shale drilling. This will be the company's second facility in Pennsylvania and will offer the largest flowback and produced wastewater treatment capacity in the state.

The company's current Williamsport, Pennsylvania, wastewater treatment plant has been operating since 2008 and has undergone multiple upgrades to expand service capabilities. That plant has the capacity to handle more than 8,000 barrels (bbl.) of wastewater per day. It is the only facility treating Marcellus wastewater that meets or exceeds the Pennsylvania Department of Environmental Protection's stringent standards for POTW discharge.

The new plant will employ patented distillation technology that will combine with a concentrated brine crystallizer that is the first of its kind in the industry. The technology will allow the extraction of salt by-products that can be reused in other applications. The plant will have the capacity to recycle up to 5,000 bbl. of wastewater per day using the crystallization process.

The facility will be built in phases, with the first phase scheduled to be completed by August 2013 and the final phase by October 2013.

RC Terminals Expands Alabama Crude, Fuel Oil Logistics OPS Via Acquisition

Texas-based Arc Terminals LP and Gulf Coast Asphalt Company LLC (GCAC) have acquired GCAC's marine terminalling facility in Mobile, Alabama, and rail transloading facility in Saraland, Alabama.

The newly acquired terminal will be connected to Arc's existing fuel oil and crude terminals in Alabama via pipelines. Also, the new terminal will have rail access for receiving crude from the Midcontinent. With access to the water, that terminal could deliver crude to other U.S. markets and/or export to Canada.

The newly acquired Mobile Terminal is a 1.2 million barrel (bbl.) facility that handles asphalt, crude oil, heavy fuel oil, and methanol for third party customers. The facility is marine, rail and truck capable.

The Saraland Rail Transloading facility transfers heavy crude oil and specialty products from railcars to Arc's Mobile area terminals via trucks. Products can then be stored, blended, and delivered into marine vessels. The Saraland Rail Transloading site is currently being expanded to meet growing customer demand.

This acquisition will increase Arc's presence in the Mobile, Alabama area and expand its capacity to over 2.5 million bbl. of storage and three rail loading and unloading operations.

GCAC will remain as a customer under a long term contract at the Mobile Terminal to facilitate its heavy oils marketing and trading operations, which GCAC retained and will continue to independently operate.

Arc and GCAC management will continue to jointly pursue its Canadian National Railway Company direct crude-rail project in the Mobile area.

This rail terminal will initially focus on unloading heavy crude oil from Western Canada and light crude oil from the Bakken basin via the Canadian National Railway Company.

This facility will provide "rail to deep water" manifest and unit train unloading capabilities and will be the most efficient solution for the delivery of Canadian crude oil to the Gulf Coast.

The rail facility, which will have a maximum crude handling capacity of approximately 75,000 bbl. per day or up to 120 rail cars, is scheduled for first operation by June 30, 2013.

Depending on crude demand, the rail facility may kick off with an initial volume of 40 rail cars, and that volume could increase later. The new rail facility will be the first crude unloading terminal in Alabama. [READ FULL ARTICLE ONLINE](#)

SNAPSHOT | Industry Insight

Trade-Offs, Pluses/Minuses For LNG vs. Diesel Ship Power

BY JACK PECKHAM | HART ENERGY

Marine-engine producer MAN late last month unveiled an analysis of the trade-offs, pluses and minuses for those considering a switch from conventional diesel propulsion power to liquefied natural gas (LNG) propulsion power in ocean shipping.

The analysis preceded a European Commission proposal to require member states of the European Union to provide LNG ship-bunkering infrastructure “in all 139 maritime and inland ports on the Trans European Core Network by 2020” — coincident with the International Maritime Organization global deadline for ocean ships to switch to low-sulfur bunker fuels, install emissions scrubbing or switch to LNG fuel.

“For the shipping industry, 2015 will be an important year—and the date is already making an impact,” according to MAN.

“At that time, significantly stricter emission limits become mandatory for ocean shipping in emission-control areas (ECAs). So far, these ECAs have been set up in the North Sea and the Baltic, off the North American coast and in the Caribbean.

“From 2015 on, marine fuels in the protected areas may only contain 0.1% sulfur. After 2020, the sulfur percentage in maritime fuels used outside the protected zones will have to be less than 0.5%. These rules apply not only to newly constructed ships, but to all seagoing vessels.

“Until today, diesel has been the most economical fuel for most ships, with some burning heavy oil. Neither of these are the cleanest energy source.

“When the new emission limits come into force, LNG stands to replace diesel—due to several arguments in LNG’s favor.

“Taking the combustion value into account, LNG is cost effective. Upon combustion, it releases 90% to 95% less sulfur as compared with a normal marine diesel. Carbon-dioxide emissions are 25% lower.

“Ships powered with LNG could enter the [ECA] protected zones without restriction. In addition, the emission of nitric oxides is 80% less than the output of a diesel engine.

“This is low enough to meet the restrictions going into effect in 2016. Consequently, media outlets are already talking about a radical revolution in the shipping industry—comparable to the historic changeover from coal to diesel oil. Are these claims exaggerated?”

‘Massive’ LNG potential

Dirk Thum, MAN’s head of the emissions and gas department for medium-speed applications, foresees a “massive trend” to LNG power in shipping.

“In the midterm, we are undoubtedly going to see a massive trend to LNG,” Thum said. “Natural-gas reserves are so large that supply will remain high for many years, keeping prices down.”

According to MAN’s analysis, “in technical terms, there are no problems today with regard to powering ships with LNG. In comparison with a diesel engine, only small modifications are necessary.

“The bore and the piston lift are expanded” with LNG combustion, Thum

explained. “Basically, we convert a diesel engine into an Otto [spark-ignition] engine.”

Starting in 2010, MAN began the supply of five hybrid-diesel/LNG main engines to the Spanish shipping company Empresa Naviera Elcano.

“The type 51/60DF machines are designed as dual-fuel engines,” according to MAN.

“Hence, they can not only use LNG, but are also compatible with a whole range of liquid fuels—namely heavy oil, marine diesel and low-sulfur marine gas oil (MGO). The engines power a 300-meter-long LNG tanker, the Castillo de Santisteban.

“And last year, MAN concluded a contract with Sovcomflot, the biggest Russian shipping company, for the delivery of dual-fuel engines to two LNG tankers. The LNG drive is an obvious choice with this type of ship, as it carries LNG already. It makes sense to fuel the ship with gas that would otherwise evaporate in transit,” according to MAN.



MASSIVE POTENTIAL | MAN, a marine-engine producer, stated that there will be a large number of companies switching from diesel-powered engines to LNG-powered engines in shipping as gas supplies grow.

LEAD STORY | From The Front

Continued from Page 1 Pennsylvania's Washington and Greene counties and Marshall County, West Virginia, that was placed in service in September 2010. It includes about 40 miles of high and low pressure gathering systems and five miles of residue pipeline that connects to the Columbia Gas and Texas Eastern systems.

"This year we'll spend about \$10 million to upgrade a compressor on the system to increase reliability," he said. Among the customers on the Majorsville system that will benefit from this improved reliability include Chesapeake Energy, Statoil, Range Resources, Chevron, CONSOL Energy and Noble Energy.

The \$150 million Big Pine system is set to be placed in-service in March and will further increase NiSource's foothold in the Marcellus by adding 57 miles of 20-inch to 24-inch gathering pipeline with access to the Columbia Gas, Dominion and Texas Eastern systems.

The pipeline originates in Butler County, Pennsylvania, and extends through Armstrong and Indiana counties and terminates in Westmoreland County. The main customer will be XTO Energy, which signed onto the project in March 2012. NiSource is in the process of adding other customers.

Avioli said that NiSource's experience in the Marcellus is helping it gain an early foothold in the Utica shale. "There's been a lot of activity from producers in the Utica, which has more than 2 million acres leased out, and we are also active in this area. Last July we announced a 50/50 midstream joint venture with Hilcorp Energy's Harvest Pipeline in the Utica called Pennant Midstream. NiSource is the operator of Pennant and its first big project, the Hickory Bend gathering and

processing complex, which is located in western Pennsylvania and eastern Ohio."

The complex will gather production from Mercer, Lawrence and Beaver counties in Pennsylvania and Trumbull, Mahoney and Columbia counties in Ohio. "Our plan is to lay 50 miles of 20-inch to 24-inch rich gas gathering header, which will have a capacity of up to 800 million cubic feet (MMcf) per day," he said.

The first phase of this project will cost \$300 million and includes a 200 MMcf per day natural gas processing plant in Mahoney County, Ohio, that is expected to complete in December. In addition, NiSource is planning to build two more processing plants with capacity for up to 600 MMcf per day. The system will also connect to the Tennessee Gas Pipeline and Dominion East Ohio via a residue gas pipeline.

As the Marcellus and Utica shales increase production levels, there will be greater demand for transportation capacity. In order to help rectify this situation Columbia Gas Transmission is undertaking its Quicklink expansion project.

"The objective of this project is to transport residue gas from gas processing plants in Hickory Bend, Kensington and Harrison to multiple markets on the Columbia Gas and Texas Eastern systems," Avioli said.

This project, which is currently in development, involves looping and extending existing pipelines to increase capacity for current shippers and Utica producers and has an in-service target date of the fourth-quarter of 2015.

"NiSource has been in the Appalachian basin for decades, and we intend to be there for many more," he said.

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