

Shell: Small-Scale LNG Plants To Create Fuel Of The Future

Project will allow aggregation of demand

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

The shale gale is presenting many new business opportunities for producers to utilize the increased volumes. One of the companies at the forefront of this expanded use is Royal Dutch Shell, which is seeking to expand the use of liquefied natural gas (LNG) as a commercial fuel in high horsepower applications, including rail, marine, mining, and industrial applications such as drilling rigs, fracing units, and grain drying.

“What this opportunity really presents to operators is a lower operating cost and a better environmental footprint,” James Edward Burns, Shell’s general manager, LNG for Transport – Americas, told *Midstream Monitor*.

He noted that while much of the attention has been on the increase in natural gas supply, demand from new natural gas markets such as transportation and industrial applications has also been increasing dramatically. “The pendulum is swinging from one arc to



Photo courtesy of Royal Dutch Shell.

another and over the past four years, the industry has moved from importing LNG to where we’re looking to export LNG.”

Rather than build LNG plants that focus on just one demand center, Shell is instead aggregating demand in various demand sectors to justify a bigger plant and lower incremental costs for customers. He stated that LNG plants designed for one end-use are not as efficient or cost-effective as multi-purpose facilities. Burns compared this model to refineries, which aren’t built for just one industry, but instead aggregate demand to justify their significant investments.

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NGL PRICES & FRAC SPREAD | Week in Review

NGL Prices Continue To Fall

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

Natural gas liquid (NGL) prices remained volatile the first week of June as trading was very active, but this didn't translate into improvements as only Conway isobutane showed an increase in value. This downward trend also continued in the case of natural gas prices, although crude prices rose.

Natural gas prices fell 3% to \$3.87 per million Btu (/MMBtu) at Conway and 4% to \$3.94/MMBtu at Mont Belvieu despite cooling demand experiencing an increase last week. However, the brevity

CURRENT FRAC SPREAD (CENTS/GAL)				
June 10, 2013	Conway	Change from Start of Week	Mont Belvieu	Last Week
Ethane	18.06		27.28	
Shrink	25.66		26.12	
Margin	-7.60	-46.01%	1.16	-16.30%
Propane	84.98		90.44	
Shrink	35.45		36.09	
Margin	49.53	-1.34%	54.35	-0.34%
Normal Butane	115.58		123.50	
Shrink	40.13		40.86	
Margin	75.45	0.77%	82.64	0.98%
Isobutane	123.72		126.77	
Shrink	38.55		39.24	
Margin	85.17	8.84%	87.53	1.47%
Pentane+	195.70		200.83	
Shrink	42.92		43.69	
Margin	152.78	-1.11%	157.14	0.96%
NGL \$/Bbl	35.73	-2.25%	38.46	-1.11%
Shrink	14.14		14.39	
Margin	21.59	-1.75%	24.07	0.49%
Gas (\$/mmBtu)	3.87	-3.01%	3.94	-3.67%
Gross Bbl Margin (in cents/gal)	48.56	-1.70%	54.86	0.44%
Gross Bbl Margin (in cents/gal)				
Ethane	0.99	-15.01%	1.50	-4.28%
Propane	2.95	-2.04%	3.14	-1.70%
Normal Butane	1.25	-0.58%	1.33	-0.60%
Isobutane	0.77	4.85%	0.79	-0.18%
Pentane+	2.52	-1.53%	2.59	-0.08%
Total Barrel Value in \$/mmbtu	8.49	-2.84%	9.35	-1.40%
Margin	4.62	-2.70%	5.41	0.31%

NGL PRICES						
Mont Belvieu	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
May 29 - June 4, '13	27.28	90.44	123.50	126.77	200.83	\$38.46
May 22 - 28, '13	28.50	92.00	124.25	127.00	201.00	\$38.89
May 15 - 21, '13	27.87	94.04	125.60	125.88	205.80	\$39.41
May 8 - 14, '13	27.98	94.92	122.94	125.50	209.53	\$39.63
May '13	28.11	93.48	123.95	125.86	204.66	\$39.21
April '13	28.58	93.99	131.09	135.73	205.91	\$40.07
1st Qtr '13	25.68	86.42	157.72	166.41	222.63	\$42.07
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
May 30 - June 5, '12	29.56	74.96	134.40	151.44	186.05	\$37.20
Conway, Group 140	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
May 29 - June 4, '13	18.06	84.98	115.58	123.72	195.70	\$35.73
May 22 - 28, '13	21.25	86.75	116.25	118.00	198.75	\$36.55
May 22 - 28, '13	20.92	88.14	115.74	117.45	203.40	\$36.94
May 8 - 14, '13	21.74	89.08	116.72	114.33	210.98	\$37.67
May '13	21.07	87.53	116.00	117.09	204.19	\$36.95
April '13	22.05	87.03	123.12	129.73	216.88	\$38.62
1st Qtr '13	23.94	81.81	153.43	160.39	222.63	\$41.11
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
May 30 - June 5, '12	10.24	54.58	122.82	138.82	184.18	\$30.83

(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%, Fuel, frac, transport costs not included. Conway gas based on NGPL Midcontinent zone, Mont Belvieu based on Houston Ship Channel.

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

of this increase in demand was not enough to support a sustained price increase.

According to Barclays Capital, the futures market isn't looking very strong as the investment bank reported that futures prices fell approximately 3% to \$4.15/MMBtu. "The front of the curve dropped the most as the hotter-than-normal weather is forecast to subside in the next couple of weeks," the firm said in its Gas and Power Kaleidoscope for June 3. Barclays Capital anticipates futures prices to balance at an average of \$4.00/MMBtu this summer should temperatures fall in line with normal summer weather.

NGL PRICES & FRAC SPREAD | Week in Review

They note that a 10% deviation from normal weather either up or down would result in prices rising or falling by 50¢/MMBtu from this \$4.00/MMBtu average.

Conway isobutane was the lone NGL to increase in value as it rose 5% to \$1.24 per gallon (/gal). This was the highest price at the hub since it was \$1.26/gal the week of April 24. This doesn't appear to be an indication of long-term demand changes so much as traders being caught short at the end of May. According to En*Vantage, isobutane demand is lower in 2013 than in previous years due to increased extraction from gas processing as well as lower gasoline and alkylate demand. The Mont Belvieu price was relatively flat at \$1.27/gal, which was largely unchanged from the previous week.

The remaining heavy NGLs saw their prices dip slightly at both hubs, but were solid as West Texas Intermediate crude prices were primarily unchanged and remained in the mid-\$90 per barrel (/bbl.) range. Pentanes-plus (C₅₊) held firm at Mont Belvieu at \$2.01/gal while the Conway price dropped 2% to \$1.96/gal. The

KEY NORTH AMERICAN HUB PRICES	
2:30 PM CST / June 6, 2013	
Gas Hub Name	Current Price
Carthage, TX	3.81
Katy Hub, TX	3.87
Waha Hub, TX	3.85
Henry Hub, LA	3.93
Perryville, LA	3.85
Houston Ship Channel	3.87
Agua Dulce, TX	3.59
Opal Hub, Wyo.	3.70
Blance Hub, NM	3.76
Cheyenne Hub, Wyo.	3.70
Chicago Hub	3.94
Ellisburg NE Hub	3.96
New York Hub	3.85
AECO, Alberta	3.37

Source: Bloomberg

Conway price was the lowest at the hub since it was \$1.95/gal the week of September 26, 2012. The market has been quickly rebalancing the last three weeks after experiencing a two-month win streak against the Mont Belvieu price.

Butane prices fell 1% at both hubs with the Mont Belvieu price of \$1.24/gal being largely unchanged from the previous week and the Conway price of \$1.16/gal also being largely un-

changed from the prior week. Light NGL prices had the largest downturn the first week of June despite improvements in the macro environment. In the case of ethane, both planned and unplanned cracker outages have been turning around, which will lower inventory levels and improve

RESIN PRICES – MARKET UPDATE – JUNE 7, 2013					
TOTAL OFFERS: 15,204,228 lbs		SPOT		CONTRACT	
Resin	Total lbs	Low	High	Bid	Offer
LDPE - Film	3,035,956	0.68	0.75	0.69	0.73
HDPE - Blow Mold	2,380,944	0.64	0.71	0.63	0.67
LLDPE - Film	2,287,932	0.67	0.73	0.64	0.68
LDPE - Inj	2,108,048	0.69	0.76	0.68	0.72
HDPE - Inj	1,694,392	0.66	0.75	0.64	0.68
PP Homopolymer - Inj	1,274,484	0.68	0.775	0.7	0.74
LLDPE - Inj	709,276	0.67	0.75	0.64	0.68
GPPS	570,000	0.91	0.93	0.86	0.91
HIPS	570,000	1.01	1.02	0.98	1.03
HMWPE - Film	352,736	0.69	0.75	0.67	0.71
PP Copolymer - Inj	220,460	0.71	0.715	0.72	0.76

Source: Plastics Exchange – www.theplasticsexchange.com

prices. These events failed to have a noticeable impact on prices during the week as the Mont Belvieu fell 4% to 27¢/gal, its lowest price since it was also 27¢/gal the week of March 6. The Conway price tumbled 15% to 18¢/gal, its lowest price since it was 17¢/gal the week of December 12, 2012.

The storage overhang for propane has been decreasing as export demand and capacity has increased, but there has yet to be any pick-up in price at either hub. The value dropped 2% at both hubs with the Mont Belvieu of 90¢/gal being the lowest price since it was the same price the week of March 13. The Conway price of 85¢/gal was also the lowest since the week of March 13 when it was also the same price.

The theoretical NGL bbl. price fell 2% to \$35.73/bbl. with a 2% drop in margin to \$21.59/bbl at Conway. The Mont Belvieu NGL bbl. price decreased 1% to \$38.46/bbl. with a 1% gain in margin to \$24.07/bbl.

The most profitable NGL to make at both hubs remained C₅₊ at \$1.53/gal at Conway and \$1.57/gal at Mont Belvieu. This was followed, in order, by isobutane at 85¢/gal at Conway and 88¢/gal at Mont Belvieu; butane at 76¢/gal at Conway and 83¢/gal at Mont Belvieu; propane at 50¢/gal at Conway and 54¢/gal at Mont Belvieu; and ethane at negative 8¢/gal at Conway and 1¢/gal at Mont Belvieu.

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PROCESSING TRENDS | An Inside Look

Braskem Mexican Ethane Cracker Still On Track

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

Contrary to rumors, Braskem-Idesa's planned \$3.2 billion ethane cracker in Veracruz, Mexico, is still moving forward. Several sources had informed *Midstream Monitor* that the Ethylene XXI facility, which will be the largest private petrochemical plant in Mexico with capacity to produce 1.05 million tons of polyethylene per year, was being canceled and instead moved to the Northeast to take advantage of production out of the Marcellus and Utica shales.

"Braskem's project in Mexico to build a cracker and polyethylene facility is on target and proceeding well. Any rumors that this project has been suspended are false," a Braskem official told *Midstream Monitor*.

Braskem-Idesa is a joint venture between Brazilian petrochemical company Braskem, which holds a 65% interest, and Grupo Idesa of Mexico, which holds the remaining 35%. The project is scheduled for start-up in 2015.

Upon completion the complex will feature an ethane cracker with one million tons per year (TPY) capacity, two high-density polyethylene plants with a total 750,000 TPY of capacity, and a low-density polyethylene plant with a capacity of 300,000 TPY.

The U.S. is a growing interest point for Braskem as the company recently acquired Sunoco's polypropylene business for \$350 million in February, which included headquarters in Philadelphia, Pennsylvania, as well as three domestic plants in La Porte, Texas, Marcus Hook, Pennsylvania and Neal, West Virginia, as well as a technology and development center in Pittsburgh, Pennsylvania.

Bernardo Gradin, Braskem's chief executive, said at the announcement of this agreement that the company intends to leverage these assets to make further acquisitions or alliances in the future to grow its position in the U.S.

"The acquisition of Sunoco Chemicals provides Braskem with a solid and competitive platform for growth in the world's biggest market, which will complement its ongoing internationalization strategy through important greenfield projects under development in Mexico, Venezuela and Peru," he said in a release.



PROCESSING | Braskem officials confirmed that their \$3.2 billion ethane cracker in Veracruz is still on track.

Last month at a Chemical Marketing & Economics Group meeting, Fernando Musa, president and chief executive of the company's American division, said Braskem is considering building a U.S.-based ethylene plant with a partner.

"Ethylene and polyethylene is where the money is being made in the U.S., and we are looking into what we might do. A polyethylene plant and cracker is one alternative. However, we have not made a definite decision on this. If we do build in the U.S., having a partner is probable, as we are doing in Mexico," he said.

"Braskem is always considering opportunities for growth that will add value to its business. These opportunities are constantly being explored and may include acquisitions or organic growth in alignment with our business strategy of growing our resins business in North America," the company told *Midstream Monitor*.

Rockies Midstream Offers Opportunities

BY **RHONDA DUEY** | HART ENERGY

Midstream capacity in the Rockies has been a topic of discussion for decades. This hydrocarbon-rich province suffers from distance to market, competing with areas like Texas that are closer to Gulf Coast refineries. With the advent of the shale plays, new competition from eastern plays like the Marcellus and Utica are making the picture even bleaker.

Steven B. Huckaby, chairman and chief executive of Meritage Midstream, shared his vision of the future of Rockies midstream opportunities with the crowd at Hart Energy's DUG Bakken and

PROCESSING TRENDS | An Inside Look

Niobrara conference last month. Huckaby is no stranger to the region. He started working in the Denver-Julesberg basin in 1990, started Bearclaw Energy, and then worked on Kinder Morgan's Powder River and Wind River assets. Later, he and a partner bought the Powder River gathering assets, eventually selling it to DCP.

After spending some time on assets in the Eagle Ford, Huckaby returned to the Rockies, recapitalizing with Riverstone Holdings and forming Meritage in 2009.

One of the changes he's seen is the willingness of producers in the region to let the midstream company handle their crude oil and water. "Back in the old days, midstream for us was gathering and processing," he said. "If we approached the producer about handling their produced water and crude oil, they wouldn't talk to us." He added that in the cases of water-handling, turning this over to a third-party contractor presented a liability issue to the producers.

Today, he said, Meritage does "the whole suite," adding, "I think the Rockies, as much as any area, is responsible for this happening." This is partly because of the vast amount of Bureau of Land Management acreage in the area, along with large ranches. These ranchers want to decrease the amount of truck traffic on their acreage and are willing to let a midstream company lay down crude, water, and fuel gas lines as well as gas gathering lines.

A second trend he sees is a growing size in unit spacing. This again can be overcome by making additional lines part of the up-front construction process.

Another trend is the repurposing of underutilized assets. Pipelines are being repurposed, and in fact the Pony Express line, originally intended as an oil pipeline and later repurposed to be a gas pipeline, is now being converted to oil again.

Rail assets are also part of the equation. Meritage has just announced a crude oil loading facility in conjunction with Arch Coal. The new entity will be called Black Thunder Terminal LLC and will develop a rail terminal to provide crude oil handling, storage, rail loading, and marketing services to producers in the Powder River basin and downstream refiners.

Arch will contribute reclaimed land, rail switching, and loop and other assets at its Black Thunder mining complex, while Meritage will contribute capital to build and operate the terminal.

"It really looked like an opportunity to come into a situation where we could build crude oil loading and have the rail, which is an expensive part of the total capital there, in place," Huckaby said.

He added that the phenomenon of rail transport in areas like the Bakken has come as a bit of a surprise. "When I first started seeing rail come into the Bakken, I thought it was a good bridge to pipelines," he said. But he added that pipelines require a 10-year commitment, while rail contracts are more like three- to five-year commitments.

"In the end, the producers aren't going to make that kind of a commitment to production, but the marketers will," he said. "So the loading facilities have had more market support than producer support."

With more rail flexibility comes a greater choice of markets. Huckaby said that Rockies midstream companies should stop thinking of markets to the south and east and pay more attention to markets to the north and west.

"The Gulf Coast is going to be fine," he said. "They've got the Eagle Ford, the Marcellus, the Permian, the Granite Wash, the Utica, and the Mississippi Lime. If you queue all of that up, the Rockies is sitting at the back of the line.

"We need to move up in the queue, and the best way to do that is to think about how to establish good strong markets back to the west."

Rail is a good start, he added, although there is a difficulty in establishing rail lines to California.

"It's going to take longer than it does in the supply basins, but it makes good sense and is going to be good business for us," he said.

Canada also looks to be a good market for Rockies production, particularly condensates and lighter oil, he said. "We need to think of them as a customer.

They're going to do their best to create lanes moving west in Canada. The fact that we should be trying to work with Canada in these markets makes a lot of sense, and the Rockies need to be a part of that."

Finally, Huckaby said, it's not too early to be thinking globally in terms of natural gas. While gas prices aren't showing much upward growth, he said that to the extent that the industry can meet the needs of the existing gas markets, "there are some interesting developments coming along."

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PROCESSING TRENDS | An Inside Look

Gas Storage Serves As ‘Shock Absorber,’ Insurance

BY PAUL HART | HART ENERGY

Natural gas storage serves as a vital “shock absorber” that evens out cyclical demand for the hydrocarbon, according to James Hoff, vice president of reservoir engineering at Merchant Energy Holdings LLC. His firm operates the East Cheyenne Gas Storage complex in northern Colorado, a key addition to midstream infrastructure in the Rockies.

But Hoff told Hart Energy’s DUG Bakken and Niobrara conference in Denver that storage will have a growing role in the midstream sector beyond this traditional role of matching seasonal role.

“It’s all about optionality,” Hoff said, adding not all producers agree with his view.

“Producers tell me they are a balanced shipper, that they don’t need storage; if I’m balanced, why pay for storage?” Hoff told the conference’s midstream track. “But there is no such thing as a balanced shipper.”

He illustrated his presentation with graphics that compared the highly cyclical demand for gas with comparatively stable production from wells. But service interruptions are part of any production operation and storage helps assure gas continues to flow no matter the situation.

Storage was traditionally part of pipelines’ function in moving gas to market. That’s changing as the midstream evolves into separate, stand-alone services linking production and consumption, he added.

Hoff said producers should view storage as insurance, a guarantee that deliveries can continue during interruptions. He cited the example of producers in Colorado’s Piceance basin who had to shut in wells for days when related natural gas liquids processing and transportation problems forced the major gas pipeline serving the region to shut in.

“That caused huge losses for producers who could not ship gas. Had they had gas in storage they could have honored contract commitments and maintained cash flow,” he said.

“Oil producers will spend millions of dollars a year on insurance and other things” but won’t consider storage for associated

gas production because of its cost, he said. “The more sophisticated producer shows interest in the storage opportunity.”

And storage can be comparatively cheap insurance, he added, citing storage rates of around 10 cents per million Btu per month. Just one day of production loss for crude oil producers who must move associated can exceed what it costs to store the gas. For gas producers, it might take several days for the storage costs to be a wash, but can still be vital.

[READ THE FULL ARTICLE ONLINE](#)

Light Shale Crudes Reshape World’s Refining Business

BY PAUL HART | HART ENERGY

The gusher of light, sweet crude oil flowing from North America’s unconventional shale plays has forced a major shift in how refiners — here and abroad — buy feedstocks.

Two downstream industry observers speaking in a spotlight segment at Hart Energy’s DUG Bakken and Niobrara conference in Denver agreed the biggest changes on the refinery landscape may be yet to come.

Odette Eng, global refining vice president for WorleyParsons Ltd., said refining is “going light,” adding “the tight-oil revolution has had the effect on the refining industry of a reversal” in a years-long trend toward heavier and higher-sulfur feedstocks. Domestic light oil is attractive in price and refiners, at least those who can, will be processing more of it.

But perhaps the biggest change downstream has been psychological, she said, adding, “crude supply no longer is deemed constrained.”

Some refiners will remain focused on purchasing heavy crudes but the sources they buy from are changing. “Canada and Mexico are still viable,” she added, while other foreign producers already have seen a substantial drop in purchases by U.S. refiners.

The surge in U.S. light, shale crude will continue to grow, she predicted, reaching 2.2 million barrels per day by 2020.

Eng projected there will be more crude blending in the future as refiners mix lighter shale crudes with heavier oils to achieve medium-gravity feedstocks more compatible with complex refineries.

[READ THE FULL ARTICLE ONLINE](#)

PIPELINES & TRANSPORTATION | Developments

ND Pipeline Authority: Rail Is Here To Stay

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

North Dakota has been one of the biggest energy stories over the past two years as crude production out of the Williston basin has led to tremendous job and economic growth in the state, as well as helped push the U.S. to the brink of energy self-sufficiency. It has also helped turn rail transportation into a major force in the midstream.

“Rail is the new kid on the block. It’s been quite the story the past few years and has taken many of us by surprise with how quickly it has come online,” Justin Kringstad, director of the North Dakota Pipeline Authority, told attendees of Hart Energy’s DUG Bakken and Niobrara conference in Denver last week.

Indeed, crude-by-rail transportation has grown from nearly nil in 2008 to more than 620,000 barrels (bbl.) per day as of March 2013. This translates into a staggering 71% market share according to Kringstad.

Rail has helped to resolve two of the biggest challenges that producers and operators have faced in the play: moving oil out of the basin and moving it around the basin, he said. The midstream has also sought to solve these challenges through consistent pipeline additions in the state as it rose from 11,707 miles in 2009 to 12,717 in 2010 before increasing to 15,070 miles in 2011, according to the most recent data available. Data from 2012 will be released in the third quarter of 2013.

The amount of pipeline in the state, as of 2011, was approximately the same distance as between Seattle, Washington, and Washington, D.C. “To say activity is blistering out there is an understatement. Things are moving very rapidly with pipe being put in the ground as safely and quickly as possible,” he said.

The state has three major systems with the largest being the Enbridge system with 210,000 bbl. per day in capacity moving east to the Great Lakes and 145,000 bbl. per day in capacity moving north to Canada. The state only has one refinery — the Tesoro Mandan facility, which has a capacity of 58,000 bbl. per day.

Rail transportation was originally thought to be a short-term solution with pipeline transportation being the long-term fix. However, a funny thing happened in late 2012: there was a major drop-off in pipeline volumes.



IN FOR THE LONG HAUL | Justin Kringstad, director of the North Dakota Pipeline Authority, said that rail is no longer just a short-term answer for moving production out of the Bakken and Niobrara. Photo courtesy of Hart Energy.

This was due to the flexibility that rail transportation provides as it allows producers to access markets with better economics. Traditionally the price differential between North Dakota crude and West Texas Intermediate crude has been in the \$5 per bbl. -\$10 per bbl. range; however, by late 2012 the differential fell to more than \$20 per bbl.

“It’s no coincidence that right as we saw these differentials we saw rail transportation pick up in order to find premium markets,” Kringstad said.

While rail and new pipelines are helping to solve many of the issues producers are facing, there is still a great need for new infrastructure. Although the rig count has decreased in the region this year, improved efficiencies will keep production steady for the next several years before gradually decreasing from 2016 to 2029.

The lack of infrastructure has caused some wells to be completely disconnected from any systems, which has resulted in increased flaring of natural gas. “We need to get these wells connected as fast as possible,” he said.

Williams, Boardwalk Formalize JV

BUSINESS WIRE

Williams and Boardwalk Pipeline Partners LP executed a joint venture agreement to continue the development process for Bluegrass Pipeline, a project that would transport natural gas liquids (NGLs) from the Marcellus and Utica shale plays to the petro-

PIPELINES & TRANSPORTATION | Developments

chemical and export complex on the Gulf Coast, as well as the Northeast petrochemical market.

Phase one of the proposed pipeline would provide producers with 200,000 barrels (bbl.) per day of mixed NGL take-away capacity in Ohio, West Virginia and Pennsylvania. Phase two would increase capacity to 400,000 bbl. per day to meet market demand, primarily by adding additional liquids-pumping capacity. The pipeline would deliver mixed NGLs from these producing areas to proposed new fractionation and storage facilities, which would have connectivity to petrochemical facilities and product pipelines along the coasts of Louisiana and Texas.

The proposed Bluegrass Pipeline would include constructing a new NGL pipeline from producing areas in Ohio, West Virginia and Pennsylvania to an interconnect with Boardwalk's Texas Gas Transmission LLC system (Texas Gas) in Hardinsburg, Kentucky. From that point to Eunice, Louisiana, a portion of Texas Gas would be converted from natural gas service to NGL service.

Cheniere Begins Construction At Sabine Pass

Cheniere Energy Partners LP announced that its board of directors has made a final investment decision for the development and construction of trains 3 and 4 of the Sabine Pass Liquefaction Project. Cheniere has issued a full notice to proceed with construction of trains 3 and 4 to Bechtel Oil, Gas and Chemicals Inc.

Sabine Pass Liquefaction LLC, a wholly owned subsidiary of Cheniere Partners, has closed on credit facilities totaling \$5.9 billion, including a Term Loan A (TLA) credit facility of \$4.4 billion. These liquefaction-credit facilities complete the financings needed to fund the costs of developing, constructing and placing into service the first four liquefaction trains of the project.

In addition, Cheniere Partners has completed the acquisition of the Creole Trail Pipeline from subsidiaries of Cheniere Energy Inc. The 94-mile pipeline will be used by the liquefaction project to source domestic natural gas for processing into liquefied natural gas.

Enterprise Announces Open Season For ATEX Propane Service

BUSINESS WIRE

Enterprise Products Partners LP announced a binding open season to determine shipper support for transporting propane to Mont Belvieu, Texas, on the partnership's Appalachia-to-Texas (ATEX) pipeline. Currently the ATEX pipeline has long-term contracts in place for ethane transportation to Mont Belvieu. The addition of propane service will not impact Enterprise's contractual obligations with existing ATEX ethane shippers.

To accommodate shipments of propane, Enterprise would loop a portion of ATEX, add pumping capacity as needed and install additional facilities for the delivery of specification ethane and propane at destination points. The final scope of the project will be determined by the aggregate volume of commitments received during the open season, but propane transportation service is anticipated to commence in the first quarter of 2015.

Kinder Morgan Expands Eagle Ford Crude Condensate Pipeline

BUSINESS WIRE

Kinder Morgan Energy Partners LP (KMP) will invest approximately \$107 million to expand its Kinder Morgan Crude and Condensate (KMCC) pipeline system deeper into the Eagle Ford shale in Karnes County, Texas.

According to a company release, the expansion, supported by a long-term contract with ConocoPhillips, will extend the 178-mile pipeline 31 miles from the KMCC DeWitt Station in DeWitt County, Texas, to ConocoPhillips' central delivery facility near Helena, Texas, in Karnes County. KMP will also build receipt tanks and a truck-unloading facility adjacent to ConocoPhillips' central delivery facility. Kinder Morgan expects to begin construction on the project in July.

The transaction is expected to be immediately accretive to cash distributable to KMP unit holders upon the project's completion in the third quarter of 2014.

NEWS & TRENDS | Up To Date

MarkWest Expands Utica Shale Midstream Infrastructure

BUSINESS WIRE

MarkWest Utica EMG LLC (MarkWest Utica), a joint venture (JV) between MarkWest Energy Partners LP (MarkWest) and The Energy and Minerals Group, announced an expansion of its large-scale midstream system to support the rapidly growing drilling programs of producers in the southern core of the Utica Shale. MarkWest Utica EMG will construct a third 20-million-cubic-foot-(MMcf)-per-day cryogenic gas processing facility at its Seneca processing complex in Noble County, Ohio.

The Seneca complex will include three processing plants totaling 600 MMcf per day. The first two plants are scheduled to begin operations in the fourth quarter of 2013 and will support rich-gas production. Antero's rich-gas production will also anchor the Seneca III facility, and MarkWest Utica EMG expects the plant to be operational in early second quarter of 2014.

MarkWest Utica EMG is also developing the 185-MMcf-per-day Cadiz complex in Harrison County, Ohio. MarkWest Utica EMG began operations of the first major cryogenic processing facility in eastern Ohio, the 125-MMcf-per-day Cadiz I plant. The capacity at Cadiz will increase to 325 MMcf per day by mid-2014 with the completion of Cadiz II, a 200-MMcf-per-day plant and the removal of the Cadiz interim plant.

MarkWest Utica EMG has executed agreements with seven producers developing acreage in the southern core of the Utica shale. By mid-2014 MarkWest Utica EMG's fully integrated midstream system in the Utica shale will consist of more than 300 miles of gathering pipeline, five processing facilities totaling almost 1 billion cubic feet per day and 100,000 barrels per day of C2+ fractionation capacity. The JV's midstream system will also be connected to MarkWest's Marcellus NGL infrastructure.

Enterprise Plans Gulf Coast Export Facilities

BUSINESS WIRE

Enterprise Products Partners LP is developing two refined products export facilities on the Gulf Coast. By utilizing Enterprise's existing Southern Complex of refined products pipeline, storage and terminal facilities in southeast Texas, Enterprise will improve access to its marine facilities at its ports in Beaumont, Texas, and on the Houston Ship Channel, according to a company release.

Export service at the Beaumont, Texas, marine terminal will initially handle Panamax-sized, the limit for ships traveling through the Panama Canal, vessels and is expected to begin service in the first quarter of 2014, followed in mid-2014 by a expanded marine terminal on the Houston Ship Channel that will be initially sized to handle up to Aframax-class vessels, oil tankers that are smaller than 120,000 metric tons.

Chevron Phillips Chemical Expands Ethylene Production

BUSINESS WIRE

Chevron Phillips Chemical Company LP will expand its ethylene production by 200 million pounds by adding a 10th furnace to Ethylene Unit 33 at its Sweeny complex in Old Ocean, Texas, in an effort to achieve lower emissions.

While the additional furnace will not add to the nameplate capacity of the facility, the increased operating factor should result in net increase of 200 million pounds of ethylene availability.

The company recently received consent to begin construction from the Texas Commission on Environmental Quality. Construction is targeted to commence within the next quarter, with an anticipated startup in 2014.

Chevron Phillips Chemical's U.S. Gulf Coast Petrochemicals Project continues to be on track to build an ethane cracker at its Cedar Bayou plant in Baytown, Texas, and two polyethylene units in Old Ocean.

SNAPSHOT | Industry Insight

Raymond James: U.S. Light Crude Imports To Disappear

BY **STEVE TOON** | HART ENERGY

A flood of light, sweet crude oil flowing into U.S. Gulf Coast refineries will push out all imports of the light, sweet hydrocarbon as soon as this summer, according to John Freeman, managing director of exploration and production (E&P) equity research for Raymond James.

And expect East Coast imports to follow the same trajectory next year, he said.

Imports of light, sweet crude into the Gulf Coast refinery complex have fallen by 1 million barrels (bbl.) over the past two years, with just 200,000 bbl. currently being imported, Freeman told attendees at a Houston Producers Forum event earlier this month.

“By our numbers, we’re going to completely back out Gulf Coast light, sweet imports in the next couple of months,” Freeman said.

New pipelines transporting Permian basin production, crude-by-rail, expanded Eagle Ford shale supply and the southern portion of TransCanada Corp.’s Keystone XL pipeline have contributed an additional 700,000 to 900,000 bbl.-per-day inflow. “The bottleneck we’ve had the past few years at Cushing; we’re just moving it to the Gulf Coast.”

Once that happens, how long does it take to back out upper East Coast light, sweet imports? “The East Coast has a little more running room,” he said, with some 400,000 bbl. per day of imported light sweet currently. “Sometime in mid-2014, you will have backed out the East Coast’s ability to refine the light, sweet.”

The wave of oil flowing into U.S. refinery complexes is a direct result of increased production using enhanced-oil recovery technologies in tight-oil basins - previously unrecoverable.

“What we’re doing is amazing,” he said. “In six years (the industry) is going to reverse all declines we’ve had in U.S. oil production in the prior 20 years.”

The “big three” driving growth are the Bakken shale, the Eagle Ford shale and the Permian basin — contributing 95% of oil-supply growth over the last three years.



IMPORT DECLINE | Domestic crude production will push out light crude imports, according to John Freeman of Raymond James.

As supply increases, moving the oil is becoming more and more difficult, leading to inevitable pricing discounts, Freeman said.

“Oil demand is anemic and oil-supply growth is going through the roof in this country, so our inventories continue to get more bloated,” he said.

In the short term, Canada has and will continue to be an outlet for increasing U.S. supply, according to Freeman. Currently, some 120,000 bbl. per day are being shipped to eastern Canadian refineries, which can handle between 350,000 and 400,000 bbl. of light, sweet imports.

“It won’t take long before we’re pressing up against that — maybe 12 to 18 months,” he added. “If it wasn’t for them and for some export permits that are quietly being allowed by the (U.S.) government to a handful of companies, we would already have been hosed.”

Waivers to export crude to Canada will continue, Freeman said. “We don’t have a choice but to send unrefined oil to Canada to the extent they can take it.”

But the odds of a complete lifting of the ban on crude exports are not likely in the next five years, he said.

Combined with global macro factors for oil that anticipates ramped supply from Saudi Arabia, Iran, Sudan and the North Sea, contrasted with slowing demand in China and India, Freeman portends a precipitous drop in the price of oil due in 2014.

[READ THE FULL ARTICLE ONLINE](#)

LEAD STORY | From The Front

Continued from

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This change in focus falls into Shell's wheelhouse since the company has more than 50 years of experience in the large-scale LNG space, according to Burns. "We believe that natural gas is the cleanest burning fuel. By bringing natural gas into the transportation and industrial uses only helps from an environmental perspective for both local air emissions and greenhouse gas emissions. In short, we believe Shell LNG is tomorrow's fuel available today," he said.

The company is now using LNG to power its drilling rigs, fracturing units, water haul trucks and soon its platform service vessels in the Gulf of Mexico. "We believe this is going to be a safe, sustainable industry moving forward, not just next year, but 10, 20, 30 years down the road," Burns said. He added that Shell's aim is to be the most innovative and competitive energy company in the world.

In order to meet the increased demand, Shell recently announced plans to build three new small-scale LNG plants in North America each capable of supplying approximately 250,000 tons of LNG per year to heavy-duty trucks, marine vessels, and other end-users. These include its Canadian Green Corridor project, which will supply users utilizing a 900-mile stretch of highway from Alberta to the Canadian Pacific Coast; its Great Lakes corridor project, which will provide LNG to users in all five states and the province of Ontario bordering the Great Lakes from the Shell Sarnia Manufacturing Centre in Sarnia, Canada; and the Gulf Coast Corridor project, which will provide fuel along the Mississippi River, the Intra-Coastal Waterway, offshore Gulf of Mexico and onshore E&P regions in Texas and Louisiana from the Shell Geismar (La.) Chemicals facility.

"We're building key corridors to where the customers we're working with require them the most. In Canada, we looked at mining uses as well as the network traveling between Calgary and Fort McMurray. There is a strong marine presence in the Great Lakes. In the Gulf Coast, we also see a need for LNG to power marine vessels and our drilling rigs and fracturing units. We are putting our money where our mouth is," he said. The company is planning on eventually converting all of its drilling and fracturing units to LNG or natural gas. While Shell will continue to use diesel, Burns said that Shell is reviewing each of these uses to see when it can be converted to natural gas or LNG.

While Shell's planned LNG facilities will be smaller in scale than refineries and larger LNG plants, Burns said that the company is utilizing a methodology called Movable Modular Liquefaction System (MMLS). "This allows us to produce LNG in relatively small plants but still get large-scale benefits because the plants are modular and we're going to build multiples of them."

While these small-scale liquefaction units will produce the fuel, in order to actually dispense it to fleet end-users, the company is working in conjunction with partners. In Canada, Shell is working with Flying J to add LNG stations to its network of fuel stations. In the U.S., it is working with Travel Centers of America to build LNG dispensers at approximately 100 sites.

Additionally, Shell is working with its existing diesel customers as well as manufacturers to help them transition to LNG.

[READ THE FULL ARTICLE ONLINE](#)

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