

Industrial Natural Gas Demand Sure To Strengthen

Associated gas demand expected to steadily grow over the next few years

BY **DARREN BARBEE** | HART ENERGY

Industrial demand for natural gas could grow by 1 billion cubic feet per day (Bcf) per day over the next three years as an avalanche of industrial plants expand capacity, said Barclays Capital analyst Biliana Pehlivanova.

Barclay's analyzed plants for associated gas demand, though Pehlivanova said planned consumption projected to top 6 Bcf per day by 2020 "is highly unlikely."

More likely, consumption will be about one-third of that figure since most capacity expansion plans are targeted to start after 2015 and their fate is uncertain. Companies may face long lead times, require environmental and regulatory approval and face financing challenges.

"We believe that industrial consumption growth in 2016-20 will be limited to 2.3 Bcf per day," Pehlivanova said.

The shale revolution has triggered a flood of industrial expansion plans, particularly for ammonia producers, Pehlivanova said.



RENAISSANCE | Barclays Capital anticipates industrial demand for natural gas to grow by 1 Bcf per day in the next three years as new plants are brought online.

Companies have announced plans for at least 40 chemical, fertilizer and steel facilities from 2012 to 2014, she said.

In 2013, estimated average industrial natural gas consumption will rise by about 1.6% to 19.03 Bcf per day and prices are predicted to climb to \$3.70 per million Btu (MMBtu) in 2013 and \$4/MMBtu by 2015, Pehlivanova said.

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HIGHLIGHTS FROM TODAY'S EDITION



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NGL PRICES & FRAC

Ethane gains steam

Prices improved at both Mont Belvieu, Conway as 2012 came to a close.

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Ahead of schedule

The Lonestar Gateway Pipeline, which connects West Texas production to Mont Belvieu, is now online.

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Physicians call for delays in LNG, fracing

A group of physicians called for President Obama to halt LNG exports. **PAGE 11**



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NGL PRICES & FRAC SPREAD | Week in Review

Conway NGL Barrel Price Surpasses Mont Belvieu

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

The final two weeks of 2012 saw ethane gain some steam at both Mont Belvieu and Conway, though prices and margins were still depressed from their levels in the prior year.

Mont Belvieu ethane prices improved 14% to 25¢ per gallon (/gal) the week of December 19 and increased another 1% the week of December 26. These prices helped the frac spread margin returned to a positive state of 3¢/gal for the final two weeks of the year.

CURRENT FRAC SPREAD (CENTS/GAL)				
January 7, 2013	Conway	Change from Start of Week	Mont Belvieu	Start of Week
Ethane	20.58		24.90	
Shrink	22.34		22.01	
Margin	-1.76	-70.18%	2.89	-10.99%
Propane	82.23		87.98	
Shrink	30.87		30.41	
Margin	51.36	14.34%	57.57	9.05%
Normal Butane	206.37		176.73	
Shrink	34.95		34.43	
Margin	171.42	0.30%	142.30	1.79%
Iso-Butane	182.50		181.83	
Shrink	33.57		33.07	
Margin	148.93	0.85%	148.76	1.35%
Pentane+	221.00		222.60	
Shrink	37.37		36.82	
Margin	183.63	0.75%	185.78	2.09%
NGL \$/Bbl	43.85	3.39%	43.54	3.04%
Shrink	12.31		12.13	
Margin	31.54	2.65%	31.41	3.14%
Gas (\$/mmBtu)	3.37	5.31%	3.32	2.79%
Gross Bbl Margin (in cents/gal)	70.38	3.10%	71.09	3.40%
NGL Value in \$/mmBtu				
Ethane	1.13	1.98%	1.37	0.97%
Propane	2.85	10.78%	3.05	6.80%
Normal Butane	2.23	1.11%	1.91	1.98%
Iso-Butane	1.14	1.64%	1.13	1.61%
Pentane+	2.85	1.49%	2.87	2.20%
Total Barrel Value in \$/mmbtu	10.20	3.92%	10.34	3.24%
Margin	6.83	3.24%	7.02	3.46%

NGL PRICES						
Mont Belvieu	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Dec. 26, '12 - Jan. 1 '13	24.90	87.98	176.73	181.83	222.60	\$43.54
Dec. 19 - 25 '12	24.66	82.38	173.30	178.95	217.80	\$42.25
Dec. 12 - 18 '12	21.55	75.54	173.82	184.53	211.96	\$40.74
Dec. 5 - 11 '12	21.33	73.72	180.48	188.84	211.04	\$40.89
December '12	22.97	79.70	175.77	184.25	214.89	\$41.75
November '12	27.15	89.20	164.16	183.49	219.64	\$43.22
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
Dec. 28, '11 - Jan. 3, '12	79.76	139.18	207.25	241.78	230.95	\$61.85
Conway, Group 140	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Dec. 26, '12 - Jan. 1 '13	20.58	82.23	206.37	182.50	221.00	\$43.85
Dec. 19 - 25 '12	20.18	74.23	204.10	179.55	217.75	\$42.41
Dec. 12 - 18 '12	16.90	68.32	181.92	182.00	206.70	\$39.33
Dec. 5 - 11 '12	16.58	68.64	180.40	179.00	204.80	\$39.03
December '12	18.42	73.02	188.65	178.77	211.62	\$40.74
November '12	18.22	78.98	159.26	169.60	211.76	\$39.65
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
Dec. 28, '11 - Jan. 3, '12	29.25	114.83	188.23	217.50	198.05	\$47.59

(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. Source: Frank Nieto

The Conway price rose 19% to 20¢/gal the week of December 19 before improving a further 2% to 21¢/gal the week of December 26. This was its highest level since the week of August 29 when it was also 21¢/gal. Despite these price improvements, margins remained negative as natural gas feedstock prices rose 5% to \$3.37 per million Btu to close the year.

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NGL PRICES & FRAC SPREAD | Week in Review

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While a warm winter began 2012, a cold winter finally arrived as the year ended. Propane experienced a sizable increase in price due to heating demand caused by colder-than-normal weather in much of the Northeast.

The price rose 9% at both hubs the week of December 19 before increasing a further 11% at Conway and 7% at Mont Belvieu. The Midcontinent price of 82¢/gal was the highest at the hub since the week of October 31 when it was 84¢/gal and the Gulf Coast price of 88¢/gal was the hub's largest price since it was 91¢/gal the week of November 7.

Interestingly, aside from ethane, prices at the two hubs traded at a relatively even level for the week with butane and isobutane having stronger values at Conway compared to Mont Belvieu. Although the Mont Belvieu short squeeze for butane ended when BASF's Gulf Coast cracker was brought back online, there appears to be similar disruption in the Midcontinent.

The price of Conway butane rose 12% the week of December

19 to \$2.04/gal and increased another 1% to \$2.06/gal the week of December 26. This was the hub's second-largest price reported by Hart Energy, following the \$2.13/gal price the week of July 16, 2008.

Despite the large price increases for butane, its sister product, isobutane, remained flat at Conway as the price rose 2% to \$1.83/gal the week of December 26 following a 1% price drop the prior week.

KEY NORTH AMERICAN HUB PRICES	
2:30 PM CST / January 4, 2013	
Gas Hub Name	Current Price
Carthage, TX	3.14
Katy Hub, TX	3.20
Waha Hub, TX	3.17
Henry Hub, LA	3.19
Perryville, LA	3.14
Houston Ship Channel	3.10
Agua Dulce, TX	3.59
Opal Hub, Wyo.	3.23
Blance Hub, NM	3.20
Cheyenne Hub, Wyo.	3.22
Chicago Hub	3.28
Ellisburg NE Hub	3.25
New York Hub	3.45
AECO, Alberta	2.98

Source: Bloomberg

While both Mont Belvieu butane and isobutane prices saw improvements the week of December 26, they remained below their Conway counterparts. Butane increased 2% to \$1.77/gal; this represents a 2% drop in value from the price a month ago. Isobutane also experienced a 2% gain the week of December

RESIN PRICES – MARKET UPDATE – JANUARY 3, 2013					
TOTAL OFFERS: 6,852,900 lbs		SPOT		CONTRACT	
Resin	Total lbs	Low	High	Bid	Offer
LDPE - Film	2,062,736	0.63	0.72	0.65	0.69
HDPE - Blow Mold	1,438,208	0.65	0.685	0.61	0.65
LLDPE - Film	1,217,748	0.66	0.715	0.63	0.67
HMWPE - Film	556,368	0.68	0.7	0.65	0.69
PP Homopolymer - Inj	529,104	0.69	0.73	0.68	0.72
HIPS	316,000	1.02	1.04	0.99	1.04
GPPS	190,000	0.93	0.93	0.65	0.69
LLDPE - Inj	190,000	0.67	0.67	0.88	0.93
HDPE - Inj	176,368	0.69	0.69	0.68	0.72
LDPE - Inj	176,368	0.635	0.635	0.63	0.67
HIPS	274,000	1	1.02	0.7	0.74

Source: Plastics Exchange – www.theplasticsexchange.com

26 as it improved to \$1.82/gal, but this was a 4% drop from the price four weeks earlier.

Pentanes-plus (C5+) prices traded at a very close level between the two hubs the final two weeks of 2012 as crude oil prices gained strength. Although natural gas liquid (NGL) prices have been diverging from crude prices, C5+ continues to have a closer relationship with crude.

This caused the Mont Belvieu price to increase 2% to \$2.23/gal, its highest price since the week of October 31, when it was \$2.25/gal. The Conway price rose 1% to \$2.21/gal, its highest price since it was \$2.25/gal the week of April 25.

These prices combined to increase the theoretical NGL barrel by 3% at both hubs with Conway experiencing a slightly greater overall value than Mont Belvieu for the second-straight week. The Conway price was \$43.85 per barrel (/bbl.) with a 3% gain in margin to \$31.54/bbl. The Mont Belvieu price was \$43.54/bbl. with a 3% gain in margin to \$31.41/bbl.

The most profitable NGL to make at both hubs remained C5+ at \$1.84/gal at Conway and \$1.86/gal at Mont Belvieu. This was followed by butane at Conway at \$1.71/gal and isobutane at Mont Belvieu at \$1.49/gal. The third most profitable NGL to make at Conway was isobutane at \$1.49/gal while butane held this same spot at Mont Belvieu at \$1.42/gal. This was followed, in order, by propane at 51¢/gal at Conway

NGL PRICES & FRAC SPREAD | Week in Review

and 58¢/gal at Mont Belvieu; and ethane at negative 2¢/gal at Conway and 3¢/gal at Mont Belvieu.

Natural gas in storage for the week of December 21, the most recent data available from the Energy Information Administration, decreased 72 billion cubic feet to 3.652 trillion cubic feet (Tcf) from 3.724 Tcf the previous week. This was 2% greater than the 3.571 Tcf reported last year at the same time and 13% above the five-year average of 3.239 Tcf.

Unfortunately for heating demand, the National Weather Service's forecast for this week anticipates warmer-than-normal weather for the entire eastern portion of the United States. The forecast anticipates colder-than-normal weather on the West Coast.

CURRENT FRAC SPREAD (CENTS/GAL)				
December 31, 2012	Conway	Change from Start of Week	Mont Belvieu	Start of Week
Ethane	20.18		24.66	
Shrink	21.22		21.41	
Margin	-1.04	77.39%	3.25	2594.31%
Propane	74.23		82.38	
Shrink	29.31		29.59	
Margin	44.92	16.24%	52.79	15.81%
Normal Butane	204.10		173.30	
Shrink	33.18		33.50	
Margin	170.92	15.23%	139.80	-0.08%
Iso-Butane	179.55		178.95	
Shrink	31.87		32.17	
Margin	147.68	-1.37%	146.78	-3.41%
Pentane+	217.75		217.80	
Shrink	35.49		35.82	
Margin	182.26	6.73%	181.98	3.58%
NGL \$/Bbl	42.41	7.84%	42.25	3.71%
Shrink	11.69		11.80	
Margin	30.72	11.75%	30.45	5.76%
Gas (\$/mmBtu)	3.20	-1.23%	3.23	-1.22%
Gross Bbl Margin (in cents/gal)	68.27	12.04%	68.75	6.32%
NGL Value in \$/mmBtu				
Ethane	1.11	19.41%	1.36	14.43%
Propane	2.58	8.65%	2.86	9.05%
Normal Butane	2.20	12.19%	1.87	-0.30%
Iso-Butane	1.12	-1.35%	1.11	-3.02%
Pentane+	2.81	5.35%	2.81	2.76%
Total Barrel Value in \$/mmbtu	9.82	8.30%	10.01	4.64%
Margin	6.62	13.61%	6.78	7.68%

NGL PRICES						
Mont Belvieu	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Dec. 19 - 25 '12	24.66	82.38	173.30	178.95	217.80	\$42.25
Dec. 12 - 18 '12	21.55	75.54	173.82	184.53	211.96	\$40.74
Dec. 5 - 11 '12	21.33	73.72	180.48	188.84	211.04	\$40.89
Nov. 28 - Dec. 4 '12	24.58	82.92	169.46	183.28	221.26	\$42.46
November '12	27.15	89.20	164.16	183.49	219.64	\$43.22
October '12	29.78	96.21	151.37	178.28	212.57	\$43.17
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
4th Qtr '11	84.49	144.13	188.16	227.18	224.44	\$61.34
Dec. 21 - 27, '11	77.53	135.98	216.48	249.33	226.13	\$61.48
Conway, Group 140	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Dec. 19 - 25 '12	20.18	74.23	204.10	179.55	217.75	\$42.41
Dec. 12 - 18 '12	16.90	68.32	181.92	182.00	206.70	\$39.33
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Nov. 28 - Dec. 4 '12	19.22	74.84	166.00	170.00	210.64	\$39.60
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October '12	18.69	84.88	148.31	175.28	205.30	\$39.57
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
4th Qtr '11	34.29	129.43	160.82	204.27	196.08	\$48.23
Dec. 21 - 27, '11	29.23	117.63	185.17	212.50	199.17	\$47.70

(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. Source: Frank Nieto

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PROCESSING TRENDS | An Inside Look

EPA Head Jackson To Step Down

Lisa P. Jackson released a statement announcing her intentions to resign from her post as administrator of the US Environmental Protection Agency (EPA).

Jackson was nominated by President Obama in 2008 and sworn in on January 26, 2009.

According to the EPA, Jackson focused on protecting air and water quality, preventing exposure to toxin contamination in communities throughout the nation, and reducing greenhouse gases.

"I want to thank President Obama for the honor he bestowed on me and the confidence he placed in me four years ago this month when he announced my nomination as administrator of the Environmental Protection Agency. At the time I spoke about the need to address climate change, but also said: 'There is much more on the agenda: air pollution, toxic chemicals and children's health issues, redevelopment and waste-site cleanup issues, and justice for the communities who bear disproportionate risk.' As the President said earlier this year when he addressed EPA's employees, 'You help make sure the air we breathe, the water we drink, the food we eat are safe. You help protect the environment not just for our children but their children. And you keep us moving toward energy independence ... We have made historic progress on all these fronts.' So, I will leave the EPA confident the ship is sailing in the right direction, and ready in my own life for new challenges, time with my family and new opportunities to make a difference," Jackson said in her statement.

Dominion, Caiman Energy II To Form Blue Racer Midstream

Dominion and Caiman Energy II LLC have announced that they are forming a \$1.5 billion joint venture to provide midstream services to natural gas producers operating in the Utica shale in Ohio and portions of Pennsylvania. The companies expect to close on the joint venture by the end of the year.

The joint venture, Blue Racer Midstream LLC, will be an equal partnership between Dominion and Caiman, with Dominion contributing midstream assets and Caiman contributing private equity capital. The joint venture will leverage Dominion's existing presence



Photo by Hart Energy

in the Utica with significant additional new capacity designed to meet producer needs as the Utica shale acreage is developed. Midstream services offered will include gathering, processing, fractionation, and natural gas liquids transportation and marketing.

Dominion facilities to be contributed to the joint venture include both gathering and processing assets. Dominion East Ohio's existing rich gas gathering network will be contributed, along with other portions of its gathering system as more lines are converted to rich gas gathering operations. With investment, the joint venture's gathering pipeline system could be expanded to transport at least 2 billion cubic feet of natural gas per day.

Also included are Dominion's Natrium Extraction Plant and related facilities, currently under construction in Marshall County, West Virginia, and a Dominion Transmission pipeline connecting Natrium to the Dominion East Ohio gathering system.

Natrium is expected to process 200 million cubic feet of natural gas a day and fractionate 36,000 barrels of liquids, and can be expanded to serve market needs. Natrium is designed to separate the natural gas liquids into industrial-quality propane, butane, ethane and other products. The products will be able to reach multiple markets through a variety of delivery options, including truck, railroad, pipeline and barge facilities.

Williams Partners LP also announced an update on its 47.5% interest in Caiman Energy II, which was established by Caiman and its investors to develop midstream infrastructure serving oil and gas producers in the Utica Shale. In addition to Williams Partners, investors in Caiman Energy II include EnCap Flatrock Midstream

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PROCESSING TRENDS | An Inside Look

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of San Antonio, Highstar Capital of New York and management.

Williams Partners plans to contribute approximately \$380 million through 2014 to help fund Caiman Energy II's new Blue Racer Midstream venture. EnCap Flatrock Midstream is expected to contribute up to \$285 million with Highstar contributing up to \$95 million. Caiman and Dominion formed Blue Racer, which will leverage Dominion's existing business in the Utica with significant additional new capacity designed to meet producer needs as the Utica Shale acreage is developed. Midstream services offered will include gathering, processing, fractionation and natural gas liquids transportation and marketing.

The approximate \$380 million that Williams Partners expects to invest in Caiman Energy II was included in previous 2012-14 capital expenditure guidance. The partnership expects growing cash distributions from its investment in Caiman Energy II beginning with approximately \$20 million in 2014. Williams expects to account for its Caiman Energy II investment using the equity method.

Williams Partners' current ownership interest in Caiman Energy II is 47.5% with EnCap Flatrock Midstream owning 35.6%, Highstar Capital owning 11.5% and management owning 4%.

Williams Completes Acquisition Of Access Midstream

Williams announced that the company has completed its previously announced investments in privately held Access Midstream Partners GP LLC and Access Midstream Partners LP.

The total consideration for the company's investments in the Access Midstream entities was approximately \$2.25 billion including transaction costs. That amount was reduced from the previously reported amount of up to \$2.4 billion due primarily to ACMP's capital-raising activities and closing adjustments.

Williams' total cash consideration paid to GIP Fund I was \$1.82 billion for a 50% interest in Access Midstream Ventures LLC, the sole owner of Access GP, and 34.5 million ACMP subordinated LP units.

Williams' total cash consideration for its direct ACMP investments included approximately \$356 million for Class B payment-in-kind (PIK) units and Class C subordinated units. This amount includes \$13 million for Williams to maintain its share of the general-partner interest. As a result of ACMP's successful \$592 million equity

offering last week, Williams' commitment to purchase up to an additional \$230 million in ACMP equity was not needed and the commitment was canceled.

Williams now owns a 50% interest in Access GP, which includes a 2% interest in ACMP and incentive-distribution rights. In addition, Williams holds 24% of ACMP's outstanding limited-partner units.

Atlas Closes On Acquisition Of Cardinal Midstream

Atlas Pipeline Partners LP announced that the partnership has closed on its previously announced purchase of Cardinal Midstream LLC, a private midstream company. Final cash consideration for Cardinal totaled \$603.4 million, which reflects closing adjustments of \$3.4 million to the original announced acquisition price of \$600 million.

The partnership now owns 100% of the following assets:

- A 120 million cubic feet (MMcf) per day cryogenic processing facility (the Tupelo plant) in the Arkoma Woodford basin;
- Approximately 60 miles of gathering lines that gather both rich and lean gas;
- 28,500 horsepower compression capability, including a 42 MMcf per day compression facility and a treating facility; and
- A gas treating business, which includes contract gas treating operations in multiple shale plays. Included are 15 amine-treating facilities as well as two propane refrigeration facilities.

Additionally, the partnership has acquired a 60% interest in the Centrahoma joint venture that currently exists between Cardinal and MarkWest Energy Partners LP. The partnership is the operator of the Centrahoma JV assets following the transaction. The Centrahoma JV currently owns the following assets:

- Two cryogenic facilities: the Coalgate plant and the Atoka plant, with current processing capacity of 80 MMcf per day and 20 MMcf per day respectively; and
- 15 miles of NGL pipeline

With the addition of these processing facilities and associated capacity, as well as organic expansions on its legacy systems, Atlas Pipeline has now doubled the number of its operating plants to 12 and increased total processing capacity from approximately 583 MMcf per day to 1.1 billion cubic feet per day over the past 24 months.

PIPELINES & TECHNOLOGY | Developments

ETP, Regency Energy Partners Announce Completion Of Pipeline

BUSINESS WIRE

Energy Transfer Partners LP and Regency Energy Partners announced that the Lone Star West Texas Gateway NGL Pipeline is now in service. The 570-mile, 16-inch pipeline owned by Lone Star NGL LLC, a joint venture between the two partnerships, transports natural gas liquids (NGLs) produced in the Permian and Delaware Basins in West Texas to Mont Belvieu, Texas. The West Texas Gateway was originally scheduled to be completed in the first quarter of 2013.

The West Texas Gateway NGL Pipeline, which extends from Winkler County in West Texas to ETP's Jackson County processing plant in Jackson County, Texas, has an initial capacity of approximately 209,000 barrels per day with the potential to increase capacity.

ETP also announced today that its 130-mile Justice NGL Pipeline, extending from the Jackson County processing facility to Mont Belvieu, is also in service. Lone Star has secured capacity on ETP's Justice NGL pipeline for ultimate delivery of NGLs to Lone Star's storage and fractionation facilities at Mont Belvieu. Lone Star's previously announced Fractionator I is scheduled to be completed this year and Fractionator II in the fourth quarter of 2013.

FPL Issues RFP To Bring Third Natural Gas Pipeline Into Florida

Florida Power & Light Company issued a request for proposals (RFP) to build a third major natural gas pipeline to serve Florida.

Over the past decade, FPL has reduced its use of oil by 98% by investing in new, highly efficient power plants that use natural gas as a fuel to produce electricity. In 2001, FPL used more than 40 million barrels (bbl.) of oil to power customers; in 2012, the company will use less than 1 million bbl.

With the two existing major natural gas pipelines serving peninsular Florida nearing full capacity, the state needs new natural gas transportation infrastructure by 2017 to meet the growing need for natural gas power. A new major natural gas pipeline will also improve the reliability of the state's critical fuel transportation system

and expand the state's access to onshore sources, helping reduce exposure to offshore sources in the Gulf of Mexico and supply interruptions caused by tropical weather.

FPL is currently investing to modernize three old, oil and gas-fired power plants into high-efficiency natural gas energy centers that will be approximately 33% more efficient and 90% cleaner than the facilities they replace. The three new plants being built are projected to effectively pay for themselves over their operational lifetimes with more than \$1 billion in net customer savings compared with any other available generation options to meet future needs. The net customer savings reflect the expected savings from the plants' advanced fuel efficiency. FPL believes a new pipeline is the best option to fuel these and FPL's existing natural gas plants in the near future as the electricity needs of FPL's customers grow.

The proposed new "Southeast Pipeline" will provide 400,000 MMBtu per day, or approximately 400 million cubic feet per day, of natural gas capacity for FPL beginning in 2017, increasing in capacity in future years. It will be composed of two segments:

- The "Florida Interstate Connection" and "Central Florida Hub" comprise the upstream pipeline project, which will originate at an existing hub in western Alabama, run east and then south, ending at a new hub to be built in Central Florida that will allow the new pipeline to interconnect with Florida's existing pipeline systems.
- The "Florida Southeast Connection" is the downstream pipeline project, which will originate at the new Central Florida Hub and connect with FPL's system in Martin County, Florida.

Approximately four-fifths of the roughly 700-mile distance from western Alabama to FPL's Martin County plant would be covered by the upstream Florida Interstate Connection segment with the other one-fifth covered by the downstream Florida Southeast Connection segment. Interested companies can bid on one or both of the segments. The specific routes will be selected and proposed by companies submitting bids.

FPL will oversee a fair, competitive RFP evaluation process that will select the best option or options for FPL customers.

As part of the evaluation process, FPL plans to consider a self-build alternative for the downstream Florida Southeast Connection segment. The self-build alternative, if found to be in the best interest of FPL customers, would be owned and operated by a NextEra Energy, Inc. company. No consideration is being given to an FPL self-build alternative for the

Continued on
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PIPELINES & TECHNOLOGY | Developments



BRIGHT FUTURE FOR NATURAL GAS | Florida continues to grow as a market for natural gas with the addition of a third major pipeline into the state.

Continued from **Page 8** upstream Florida Interstate Connection and Central Florida Hub portion.

However, the cost to build a pipeline project of this size will be substantial, and the completion schedule is critical. To facilitate timely construction, NextEra Energy will be prepared to discuss financial involvement in support of a selected option. FPL customers would not provide funding nor see their bills impacted by this in any way.

Williams Partners Seeks Approval To Serve Growing Natural Gas Markets

Williams Partners LP announced that it has filed an application with the Federal Energy Regulatory Commission (FERC) to provide, through its Transco pipeline, 270,000 dekatherms per day of incremental, year-round firm natural gas transportation capacity to serve growing markets in Virginia and North Carolina.

The Virginia Southside Expansion is targeted to be placed into service by September 2015. It is designed to provide 20,000 dekatherms per day of natural gas transportation capacity to Piedmont Natural Gas Company and 250,000 dekatherms per day of natural gas transportation capacity to Dominion Virginia Power.

“Historically low natural gas prices and the public’s desire for cleaner energy have fueled an increasing need for natural gas service,” Frank Ferazzi, vice president and general manager of Williams’ Transco pipeline, said in a release. “This project is a great

opportunity for us to support these utilities in serving the growing electric power and gas distribution needs in this region. We look forward to working with the FERC and all stakeholders to provide essential natural gas supply access in a manner that is efficient and minimizes environmental impacts.”

The project is designed to consist of approximately 100 miles of new 24-inch diameter pipeline extending from the Transco mainline in Pittsylvania County, Virginia, and into Halifax, Charlotte, Mecklenburg and terminating in Brunswick County, Virginia. The pipe would be placed parallel to the existing Transco pipeline, alongside of the existing utility corridor. The proposal would also include a new compressor facility in Pittsylvania County, Virginia. The capital cost of the project is estimated to be \$298 million.

The Transco pipeline is a 10,200-mile pipeline system which transports natural gas to markets throughout the northeastern and southeastern United States. The current system capacity is approximately 9.7 million dekatherms per day.

Enterprise Starts Open Season For Proposed NGL Pipeline Expansion

BUSINESS WIRE

Enterprise Products Partners LP’s affiliate Panola Pipeline Company LLC announced the start of a binding open season to seek shipper support for a proposed expansion of the Carthage to Lufkin segment of its natural gas liquids pipeline system. The Panola Pipeline is a 181-mile pipeline that originates near Carthage in Panola County, Texas, and supports the Haynesville and Cotton Valley oil and gas production areas. The pipeline extends to destination points at Mont Belvieu in Chambers County, Texas, enabling shippers to access the world’s largest NGL fractionation complex, including facilities owned and operated by Enterprise.

Depending on shipper response to the open season, the Panola expansion project will be designed to accommodate approximately 15,000 barrels per day of incremental capacity. Achieving the additional capacity would involve installing pumps and related equipment. The additional capacity would be available mid to late second quarter of 2013.

The open commitment period begins today at 9 a.m. CST and will close on Friday, January 11, 2013, at 5 p.m. CST.

NEWS & TRENDS | Up To Date

Targa Completes Bakken Shale Midstream Acquisition

Targa Resources Partners LP announced it has completed its acquisition of Saddle Butte Pipeline LLC's ownership of its Williston basin crude oil pipeline and terminal system and its natural gas gathering and processing operations for cash consideration of \$950 million, subject to customary purchase price adjustments and certain contingent payments. The transaction was previously announced on November 15, 2012.

The acquired business, which is renamed Targa Badlands, is located in the heart of the oil-rich Bakken shale play in McKenzie, Dunn and Mountrail counties, North Dakota, and includes approximately 155 miles of crude oil pipelines. The business has combined crude oil operational storage capacity of 70,000 barrels (bbl.), including the Johnsons Corner Terminal with 20,000 bbl. of storage capacity (expanding to 40,000 bbl.) and Alexander Terminal with storage capacity of 30,000 bbl.

The business also includes approximately 95 miles of natural gas gathering pipelines and a 20-million-cubic-foot (MMcf) per day natural gas processing plant with an expansion under way to increase capacity to 40 MMcf per day. The operations are backed by producer dedications under long-term contracts that include approximately 260,000 acres of crude oil production and over 100,000 acres of natural gas production.

Pangea LNG Submits Non-FTA Export Application To DOE

Pangea LNG B.V. announced that its wholly owned subsidiary, Pangea LNG (North America) Holdings LLC, has filed an application with the U.S. Department of Energy (DOE) requesting multi-contract authorization to export liquefied natural gas from its proposed facility in South Texas to any country with which the U.S. does not have a Free Trade Agreement (FTA) in effect.

This is another major step in the process of developing a new LNG export terminal on a 550-acre site fronting the north shore of Corpus Christi Bay. On November 29, Pangea filed an application with DOE seeking export authority to countries with which the U.S. has Free

Trade Agreements. Pangea is seeking authority to export up to 8 million metric tons per year of LNG, equal to approximately 400 billion cubic feet per year of natural gas.

The South Texas LNG Project is being designed in two phases, each capable of producing 4 million tons per year and storing approximately 250,000 cubic meters of LNG. Design options are being evaluated and the outcome is expected to consist of both land-based and floating components. The project is subject to federal, state and local regulatory approvals with the Federal Energy Regulatory Commission (FERC) acting as the lead federal agency. Pangea's schedule calls for the project to be in operation by at least 2018.

Natural gas for the South Texas Project will be supplied by customers through an associated pipeline that will likely connect to nine major interstate and intrastate transmission pipelines. As a result, the feed gas for the facility can be sourced from almost any point on the U.S. natural gas pipeline grid through direct physical delivery or by displacement, including gas from the Eagle Ford Shale and conventional production in South Texas.

Calumet Completes \$115M Asset Acquisition From NuStar

Calumet Specialty Products Partners LP signed a definitive agreement to acquire San Antonio assets of NuStar Energy LP.

The San Antonio assets include a refinery and associated crude oil pipeline, crude oil terminal, other operating and logistics assets and inventories of NuStar Refining LLC and NuStar Logistics LP, both wholly owned subsidiaries of NuStar Energy. The agreement was for aggregate consideration of approximately \$100 million, plus an amount for closing date inventory estimated to be \$15 million, subject to customary purchase price adjustments. Closing of the transaction is expected to occur this month subject to customary closing conditions.

Calumet intends to finance the NuStar acquisition through a combination of borrowings under its senior secured revolving credit facility and cash on hand. Calumet's obligation to consummate the NuStar acquisition is not conditioned upon the receipt of financing.

SNAPSHOT | Industry Insight

Rx For LNG: Halt Exports, Research Hazards Of Fracing, Physicians Say

BY **DARREN BARBEE** | HART ENERGY

Environmental groups list about 650 incidents they blame on fracing. Now scientists and physicians are weighing in, saying anecdotal reports and a “growing body of evidence” demand investigation. Just last month, more than 100 physicians, scientist and engineers announced they had signed a petition urging President Barack Obama to halt construction of liquefied natural gas (LNG) facilities, citing concerns over shale-gas extraction.

However, during a teleconference, they acknowledged a “vacuum” of data about any hazards related to fracing.

Madelon L. Finkel, a professor at Weill Cornell Medical College, said reports of health problems range from minor to serious, “particularly in close proximity to drilling sites.”

“Most importantly, there’s a lack of scientific evidence looking at public health impact of natural gas extraction,” she said. “We should not conclude that an absence of data implies no harm is being done.”

The group says it wants environmental research done prior to exporting LNG.

At stake is the potential for millions of jobs and billions of dollars in economic activity, as well as the United States’ dominance due to its shale expertise, according to industry leaders. Recent government reports have highlighted the potential for LNG to power the economy.

Energy in Depth (EID), an industry advocacy group, said health concerns that make up the backbone of the petition have been “debunked time and time again.”

The petition says one of its concerns is exposure to polluted air, water and soil. EID says hard evidence has shown the contrary.

In Pennsylvania, where the Marcellus shale is actively drilled, the Department of Environmental Protection (DEP) has found no emissions from Marcellus shale activities that reach levels harmful to human health, EID said.

“Results of the limited ambient air sampling initiative in the north-east region did not identify concentrations of any compound that would likely trigger air-related health issues associated with Marcellus shale drilling activities,” the DEP said.

In Texas’ Barnett shale, ozone levels fell 15% as gas production increased 94% over a nine-year period.



CONCERNED PHYSICIANS | A group of more than 100 physicians submitted a petition calling for President Obama to halt the development of LNG terminals until more research can be done into the effects of unconventional natural gas production.

A halt to LNG exports could have serious implications for the economy, which is expected to start the first half of 2013 with GDP growth of about 1.5%.

Currently, oil and natural gas support 9.2 million jobs, 7.7% of the economy and \$86 million a day in revenue to the federal government, according to the API.

Seth B. Shonkoff, executive director of Physicians, Scientists and Engineers for Healthy Energy (PSE), said the question is why the U.S. would increase the use of an extraction method “without first ensuring that the trade-off is not the health of Americans in exchange for the energy demands of foreign nations?”

The group’s petition says health researchers and medical professionals “question the continuation of current levels of fracing without a full scientific understanding of the health implications.” They add that health concerns should come before profits.

The group fears opening LNG export facilities would accelerate fracing. However, recent data has shown that even as natural gas production has scaled back because of oversupply, natural gas production has surged in part due to collection of gas associated with shale-oil extraction.

“We strongly urge the administration to err on the side of caution as it contemplates national policy regarding the exportation of shale gas,” the petition said.

PSE’s petition comes after a report commissioned by the Department of Energy found that LNG exports would increase net economic benefits to the U.S. while likely not affecting the overall level of employment.

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LEAD STORY | From The Front

chemicals plants, as well as two metals plants, will also add to natural gas needs. Feedstock for ammonia and direct reduced iron (DRI) processes alone could add as much as 139 MMcf per day in demand.

Barclay's equities analysts say steel makers are set on eliminating met coal in favor of natural gas. DRI facilities could consume 200 MMcf per day by 2020.

A wave of manufacturing capacity additions will hit in 2014, with gas demand growing to 400 MMcf per day. Consumption will be buoyed by two methanol facilities and two nitrogenous fertilizer plant expansions.

The manufacture of ethylene will cause yet another surge in natural gas use. While ethylene requires little feedstock of propane and ethane, such plants have sizeable power needs and often use onsite gas-fired power plants.

For 2015 and beyond, forecasting becomes murkier. In 2015, natural gas consumption could rise 600 MMcf per day, but if and when are the questions.

Pehlivanova estimates consumption growth is more likely to be 450 MMcf per day. In the years that follow, gas demand could go higher, but large scale projects could face higher costs.

“We believe that industrial consumption growth in 2016-20 will be limited to 2.3 Bcf per day.”

- Biliiana Pehlivanova, Analyst,
Barclays Capital analyst

Continued from
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Nevertheless, the next three years are promising for natural gas.

In 2012, the industrial sector is on track to increase consumption by 300 million cubic feet per day (MMcf) per day as restarts and expansions come back online. For instance, a Beaumont, Texas, methanol-ammonia facility idled since 2004 restarted ammonia production in late 2011 and methanol production began in July. The plant uses natural gas a feedstock.

In 2013, another 300 MMcf per day growth of industrial consumption is in the offing, Pehlivanova said, as four ammonia facilities are slated to either restart or to undergo expansion. They will consume about 70 MMcf per day of natural gas for feedstock. Another three ethylene crackers and four other

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