

## Reversal Of Fortune For Louisiana Gas Industry

As state makes move from supply center to demand center, more infrastructure and construction will be needed.

BY **FRANK NIETO** | SENIOR EDITOR, MIDSTREAM BUSINESS

It is no secret that the midstream is experiencing shifts in direction as different states and regions, specifically in the Marcellus and Utica shales, change from being demand centers to being exporters of natural gas, an environment that has resulted in the proposed East-to-West reversal of the Rockies Express Pipeline. However, there is also an instance of reversal in another part of the country, specifically Louisiana, according to a recent white paper from ICF International titled "How Louisiana Satisfies Growing Southern Gas Market Demand: Implications for Portfolio and Investment Strategies in the Delta State."

The change from being a large supplier to a large consumer of natural gas could significantly impact the supply-and-demand balance in the state, the paper's authors, say ICF International Vice President Greg W. Hopper and research assistant Kevin Greene.

The report noted that supplies in Louisiana have tightened as access to the state's conventional resources has declined at the same time that demand is increasing. This happens amid uncertainties over the access to supplies from other parts of the country.



Louisiana is quickly moving from an exporter to importer of natural gas, which is requiring new infrastructure to bring volumes into the state.

Traditionally Louisiana's gas market has been well served with volumes from production within the state as well as offshore and from neighboring Texas. The state also benefitted from a strong network of pipelines and storage capacity, which helped attract buyers and suppliers. As supplies from these regions dwindle, however, this attraction may also decrease.

Production from onshore and offshore supply basins in the state are decreasing, Texas production is staying in-state as demand increases or is slated for export via liquefied natural gas (LNG) terminals or

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### HIGHLIGHTS FROM TODAY'S EDITION



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A recent report from the CME Group claims that the gas-to-crude price gap could be erased in the near future.

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## NGL PRICES & FRAC SPREAD | Week in Review

### Propane Prices Fall As Supplies Ramp Back Up

BY **FRANK NIETO** | SENIOR EDITOR, MIDSTREAM BUSINESS

After five weeks of trading at peak levels, propane prices took a sharp downturn even as colder temperatures arrived in much of the country. Although temperatures in the Northeast and Midwest weren't as severe as they had been in late January and early February, this wasn't the primary culprit in the price downturn. Rather it was a strong response by operators to rebuild supplies in key markets that was the differential.

It was anticipated by most observers that propane stocks would face a drawdown of 1-2 million barrels (bbl.) and instead East Coast stocks more than doubled. The national storage level for propane also increased due to heavy fog that restricted liquefied petroleum

CURRENT FRAC SPREAD (CENTS/GAL)				
March 3, 2014	Conway	Change from Start of Week	Mont Belvieu	Last Week
Ethane	35.00		39.01	
Shrink	34.14		33.28	
<b>Margin</b>	0.86	117.04%	5.73	76.32%
Propane	133.00		129.20	
Shrink	47.17		45.98	
<b>Margin</b>	85.83	-26.91%	83.22	-19.23%
Normal Butane	123.88		131.34	
Shrink	53.41		52.06	
<b>Margin</b>	70.47	-4.93%	79.28	-1.08%
Isobutane	141.78		139.32	
Shrink	51.29		50.00	
<b>Margin</b>	90.49	-5.76%	89.32	4.73%
Pentane+	221.98		213.32	
Shrink	57.11		55.67	
<b>Margin</b>	164.87	3.57%	157.65	5.81%
NGL \$/Bbl	46.93	-6.73%	46.48	-6.85%
Shrink	18.81		18.34	
<b>Margin</b>	28.12	-8.95%	28.14	-4.53%
Gas (\$/mmBtu)	5.15	-3.20%	5.02	-10.20%
Gross Bbl Margin (in cents/gal)	64.68	-10.81%	65.51	-5.76%
NGL Value in \$/mmBtu (Basket Value)				
Ethane	1.93	15.70%	2.15	-3.23%
Propane	4.62	-19.96%	4.49	-16.23%
Normal Butane	1.34	-4.19%	1.42	-4.91%
Isobutane	0.88	-4.85%	0.87	-1.16%
Pentane+	2.86	1.74%	2.75	1.11%
Total Barrel Value in \$/mmBtu	11.63	-7.51%	11.67	-7.85%
<b>Margin</b>	6.48	-10.68%	6.65	-6.00%

NGL PRICES						
Mont Belvieu	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Feb. 19 - 25, '14	39.01	129.20	131.34	139.32	213.32	\$46.48
Feb. 12 - 18, '14	40.31	154.24	138.12	140.96	210.98	\$49.90
Feb. 5 - 11, '14	40.01	160.56	150.42	148.32	207.56	\$51.21
Jan. 29 - Feb. 4, '14	35.93	159.66	159.00	160.26	207.98	\$51.27
January '13	34.55	139.87	148.36	152.20	208.83	\$47.99
December '13	29.77	127.36	136.86	137.70	213.70	\$45.11
4th Qtr '13	26.76	119.81	142.56	145.02	210.66	\$44.03
3rd Qtr '13	24.87	102.65	132.06	134.86	215.56	\$41.21
2nd Qtr '13	27.12	91.38	124.01	127.46	204.12	\$38.82
1st Qtr '13	25.68	86.42	157.72	166.41	222.63	\$42.07
Feb. 20 - 26, '13	26.24	86.96	157.96	158.62	231.90	\$42.65
Conway, Group 140	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Feb. 19 - 25, '14	35.00	133.00	123.88	141.78	221.98	\$46.93
Feb. 12 - 18, '14	30.25	166.16	129.30	149.00	218.18	\$50.31
Feb. 5 - 11, '14	20.00	194.54	138.02	161.18	210.16	\$52.25
Jan. 29 - Feb. 4, '14	13.30	289.76	151.32	165.38	209.98	\$63.27
January '13	16.65	240.54	146.23	154.88	207.91	\$57.28
December '13	18.84	137.56	143.70	143.56	212.33	\$45.25
4th Qtr '13	20.19	122.54	144.49	147.58	205.01	\$43.33
3rd Qtr '13	20.80	99.22	129.23	142.77	209.94	\$40.07
2nd Qtr '13	20.71	85.37	116.50	123.91	204.86	\$36.89
1st Qtr '13	23.94	81.81	153.43	160.39	222.63	\$41.11
Feb. 20 - 26, '13	23.74	82.58	153.00	162.70	229.48	\$41.67

(Above) Data Provided by Bloomberg. 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.

gas (LPG) exports out of the Gulf Coast, according to En\*Vantage's *Weekly Energy Report* for February 27.

Overall propane prices tumbled 16% at Mont Belvieu to \$1.29 per gallon, the lowest level at the hub since early January. The Conway price fell 20% to \$1.33 per gallon, its lowest level since it was \$1.31 per gallon the week of December 4, 2013.

However, it is possible that these downturns were an overreaction by traders and prices may increase over the next few weeks. "It is our opinion that the collapse in propane prices is way overdone given that winter has not ended, [LPG] exports will be higher in the second quarter compared to the same time period last year, and that propane stocks will need to increase 1.35 million bbl. per week from

## NGL PRICES & FRAC SPREAD | Week in Review

March 28 to reach the five-year average inventory level of 63 million bbl. by October 31," the En\*Vantage report said. The company noted that the five-year average build from April to the end of October is 1 million bbl. per week. Given these figures, it is forecasting Mont Belvieu prices of \$1.20-1.30 per gallon with a 10 cents per gallon premium at Conway.

Natural gas prices also took a downward spiral this week as heating demand wasn't quite as high as anticipated. This caused the Mont Belvieu price to fall 10% to \$5.02 per million British thermal unit (MMBtu) and the Conway price to drop 3% to \$5.15 per MMBtu. Mont Belvieu ethane continued to be correlated to gas prices, as they fell 3% to 39 cents per gallon. However, Conway ethane prices continued to correct themselves as they rose 16% to 35 cents per gallon. This was their highest price since they were 37 cents per gallon the week of November 16, 2011.

Butane and isobutane prices fell once again at both hubs as refiners are switching from winter grade gasoline to summer grade gasoline. However, C<sub>5+</sub> prices improved at both hubs as crude prices remained strong at more than \$100 per bbl. The Mont Belvieu price

KEY NORTH AMERICAN HUB PRICES	
2:30 PM CST / February 27, 2014	
Gas Hub Name	Current Price
Carthage, TX	4.49
Katy Hub, TX	4.54
Waha Hub, TX	4.64
Henry Hub, LA	4.56
Perryville, LA	4.55
Houston Ship Channel	4.52
Opal Hub, Wyo.	5.51
Blance Hub, NM	4.99
Cheyenne Hub, Wyo.	5.82
Chicago Hub	18.65
Ellisburg NE Hub	4.66
New York Hub	11.37
AECO, Alberta	5.13

Source: Bloomberg

increased 1% to \$2.13 per gallon, its highest price of the year thus far. The Conway price improved 2% to \$2.22 per gallon, which was also its high for the year.

The theoretical natural gas liquids (NGL) bbl. price fell 7% at both hubs with the Mont Belvieu price falling to \$46.48 per bbl. with a 5% drop in margin to \$28.14 per bbl. The Conway price was down to \$46.93 per bbl. with a 9% drop in margin to \$28.12 per bbl.

The most profitable NGL to make at both

RESIN PRICES – MARKET UPDATE –FEBRUARY 28, 2014					
TOTAL OFFERS: 19,359,932 lbs		SPOT		CONTRACT	
Resin	Total lbs	Low	High	Bid	Offer
HDPE - Inj	4,442,992	0.715	0.765	0.71	0.75
PP Homopolymer - Inj	3,849,300	0.78	0.86	0.79	0.83
LDPE - Film	2,676,416	0.76	0.815	0.75	0.79
HDPE - Blow Mold	2,453,312	0.705	0.8	0.72	0.76
LLDPE - Film	2,349,956	0.75	0.81	0.72	0.76
PP Copolymer - Inj	2,179,380	0.8	0.88	0.8	0.84
LDPE - Inj	573,196	0.81	0.81	0.75	0.79
LLDPE - Inj	436,736	0.765	0.79	0.73	0.77
HMWPE - Film	398,644	0.73	0.82	0.76	0.8

Source: Plastics Exchange – [www.theplasticsexchange.com](http://www.theplasticsexchange.com)

hubs was C<sub>5+</sub> at \$1.58 per gallon at Mont Belvieu and \$1.65 per gallon at Conway. This was followed, in order, by isobutane at 89 cents per gallon at Mont Belvieu and 91 cents per gallon at Conway; propane at 83 cents per gallon at Mont Belvieu and 86 cents per gallon at Conway; butane at 79 cents per gallon at Mont Belvieu and 71 cents per gallon at Conway; and ethane at 6 cents per gallon at Mont Belvieu and 1 cent per gallon at Conway.

There was only a 95 billion cubic feet withdrawal of natural gas from storage the week of February 21, the most recent data available from the Energy Information Administration. This withdrawal saw the storage fell decrease to 1.348 trillion cubic feet (Tcf) from 1.443 Tcf the previous week. This represented a 40% reduction from the 2.253 Tcf posted last year at the same time and 35% drop from the five-year average of 2.059 Tcf.

There may be a larger withdrawal the first week of March as the National Weather Service is forecasting colder-than-normal temperatures once again throughout much of the country with only California, Nevada and Arizona expected to experience warmer-than-normal temperatures.

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## Djerejian: Relationship With Middle East To Rebalance As West Gains Energy Security

BY **DEON DAUGHERTY** | ASSOCIATE EDITOR, MIDSTREAM BUSINESS

The notion of energy “independence” is unrealistic and it’s unlikely that the United States, Europe or any other region of rising energy consumption will ever achieve it, said Edward Djerejian during “The Geopolitics of Natural Gas,” a recent conference at Rice University’s Baker Institute’s Center for Energy Studies in Houston.

The former ambassador to Israel under President Bill Clinton, former ambassador to Syria under President George H. Bush and founder of the Baker Institute said energy security is what policymakers must seek.

“To me, energy independence is like the ‘War on Poverty,’ or the ‘War on Drugs,’” Djerejian told a crowd during his presentation on geopolitical developments in the Middle East. “It’s a bridge too far. Energy security is the goal and that is a truly realizable goal.”

Djerejian made the point that global markets in oil and increasingly, in natural gas, require consumers to interact with producers around the world.

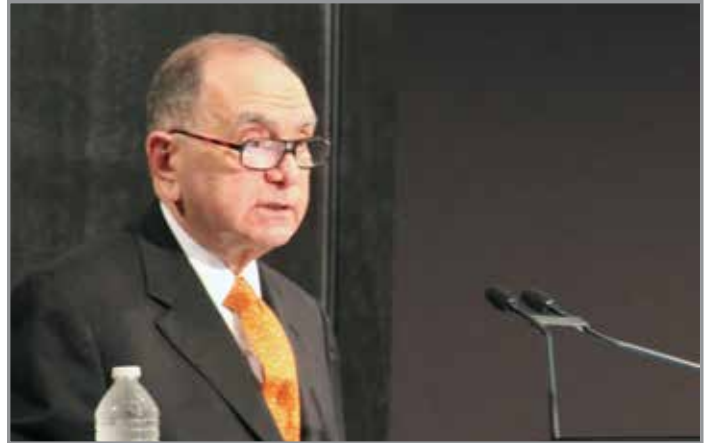
“The infrastructure and demand in place will always require strong American relations in the Middle East and the Arab Gulf,” he said. “Shale gas and oil moves the country forward toward increasing energy security ... and highlights the importance of understanding how the geopolitics of energy will affect the global market in the coming decades.”

Djerejian explained that two major revolutions in recent years have changed the geopolitical landscape: the Arab Spring and the rise of shale technology.

The Arab Spring that grew in December 2010 from violent protests in Tunisia proved to be a “tectonic shift” in the Middle East, Djerejian said. The uprising raised the political stakes for stable supplies of natural gas in the Middle East.

“Historically, the impact of political instability in the Middle East and North Africa on energy markets around the world is undeniable,” he said.

The shale revolution that has reversed the trend of recent years in which production in North America was in decline means Europe is no longer shipping liquefied natural gas to the U.S. That gives Europeans more supply and some alternative to Russian gas. It also decreases U.S. exposure to events in the Middle East, Djerejian said.



Former U.S. ambassador to Israel Edward Djerejian said that relationships with the Middle East are still important as the notion of energy independence is a misnomer. (Courtesy: Hart Energy)

But, he added, shale’s longer term impacts are difficult to discern. The supply in both Russia and the Middle East has yet to be determined. What’s more, he said, it’s still unclear how countries that have identified supplies will pursue shale development.

“Whatever the outcome, the complex relationship between energy and geopolitics in the Middle East will rebalance as the western hemisphere evolves into a more energy secure zone,” he said.

“While the U.S. involvement in the dynamics of the Arab Gulf could be deprioritized in the wake of a domestic energy revolution, American interests in the Middle East and further east in Asia are more accurately viewed as complementary rather than completely oppositional,” he said.

## Natural Gas Prices Soar, Could Hit \$8

BY **DARREN BARBEE** | HART ENERGY

U.S. natural gas demand caused another 250 billion cubic feet (Bcf) of gas to be withdrawn from storage the week of February 17.

The drawdown was ahead of Global Hunter Securities LLC’s estimates of 233 Bcf.

“The new storage decline would take our end-of-season working gas storage balance to 905 Bcf, creating tight supply conditions and highly supportive of the \$6 per million British thermal units (MMBtu) price rally taking place” for the week of February 14, said Richard Hastings, a macro-strategist at Global Hunter.

Henry Hub prices last eclipsed \$6 the week of January 8, 2010 and fell to \$1.86 the week of April 20, 2012. Including last week, the



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average weekly price has been \$3.76, rendering most unconventional shale gas plays uneconomical.

Dwindling supplies are likely to force many power plants to switch to coal when the electric power season begins in earnest in May and June.

Price spikes have been as high as \$0.55 above \$6, with some evidence that prices could spike toward \$8 per MMBtu. That scenario could occur if working gas in the Midwest and Texas-Oklahoma-Arkansas-Louisiana regions experiences storage being pulled down toward dangerously low levels, Hastings said.

Storage is down in various regions, including the West, which has dipped to 229 Bcf, Hastings said. Although the CME Group increased margin requirements to trade natural gas on the exchange, evidence from trading suggests that excitement about the event goes beyond just speculation, because of the evidence of tight supplies, Hastings said.

Tight supplies, and the risk that Western states could consume the region's supplies of working gas, could cause supplies to dwindle closer to 100 Bcf, Hastings said. "As long as fundamentals and weather forecasts support these risks and for as long as price action continues to disgorge short positions, then the outlook for this rally remains quite strong."

Forecasts already point to a colder-than-normal March. Further down the road, large areas in the East and Northeast could trend colder-than-normal in April, Hastings said.

The second version of the National Oceanic and Atmospheric Association's (NOAA) Climate Forecast System, generated on February 19, predicts significantly colder-than-normal temperatures in the eastern half of the Lower 48 for March. Although the West is offsetting this with higher-than-normal temperatures, the historical benchmarks from 2003, and other major cold months during the last 30 years, convincingly indicate that major fuel consumption events may occur, even if the only geography involved is the eastern half of the Lower 48.

"This now appears to be the case with increasing confidence from an increasing variety of forecast models from NOAA," Hastings said.

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## On Regulatory Challenges, Tone Matters

SUSAN KLANN, HART ENERGY

Energy companies' corporate strategies in dealing with regulatory challenges can be either a net hurt or a net help to the bottom line. Success or failure in resolving issues depends, to some extent, on the

tone set by all the stakeholders involved, according to Doug McClure, vice president of government, stakeholder relations and legal for Encana Oil & Gas USA.

McClure discussed lessons learned, from his long experience with the regulatory environment, as a member of a panel at the NAPE Business Conference held in February in Houston. He borrowed his reference about tone from the Sarbanes-Oxley Act, which was passed by Congress in 2002 to protect investors from the possibility of fraudulent accounting activities by corporations. Companies are asked what tone has been set, at the top level, with respect to internal control structures and systems.

"This can be applied to the regulatory environment in oil and gas as well," McClure said. "From the regulator to industry, what tone are you setting? That tone can translate to or deviate from what I refer to as regulatory perspective."

McClure said that the oft-stated desire by oil and gas companies to have "regulatory certainty" is unrealistic. "There is nothing certain in our business," he said. "Cycles are constantly changing." But like a baseball umpire, he said, what industry should want from regulations is consistency—whether they are bad or good. If you have that predictability, you can adjust your game.

Regulatory challenges can dial up the intensity of four main external factors for companies. These are stakeholder interests, shareholder interests, markets and the economy, he said. With stakeholder interests, for example, if regulatory challenges intensify, tensions and conflicts can increase in tandem, pitting industry against industry and more.

Unintended consequences, such as legal challenges, can become a greater risk. From a market and economic perspective, particularly in a commodity-sensitive industry, a change in compliance costs can drive certain capital programs off the threshold of commercial viability, he said.

Some challenges are more easily solved than others. "One town might be focused on nuisance impacts—road traffic, noise, dust, etc.," said McClure. This could escalate to a deep discussion involving zoning laws for industry activity, and eventually, an outright ban on activity. This kind of battle has taken place recently in Colorado.

The same thing can happen with capital investment decisions, he said, where sunk or future capital allocations are re-evaluated in light of the regulatory environment. McClure gave as an example Encana's withdrawal of about \$500 million in capital investment when Alberta increased its take of royalties. "You can trace these events back to regulatory shifts in tone."

Eventually, there can be legal challenges when there are imbalances between factions.

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“If nobody is ready to change their mind on anything—if both are dead set—you get a fatalistic approach and it’s doomed ... it ends in frustration. The hope is that both sides come together with a proactive level of engagement and you reach what I refer to as ‘smart’ regulations—not perfect, but smart,” McClure said.

## Chevron Said To Be Exploring Options For U.S. Midstream Business

BLOOMBERG

Chevron Corp., the world’s third-largest oil and gas company by market value, is conducting a strategic review of its U.S. midstream business which could result in a sale of some or all of the unit, people with knowledge of the matter said.

The San Ramon, California-based company is working with Jefferies Group LLC on the review and any related asset sales, said two of the people, who asked not to be identified because the process is private.

Chevron’s U.S. midstream unit manages pipelines and other infrastructure for handling oil and gas between wells and refineries. A precise valuation for the assets is difficult to reach because the market for such assets is volatile and Chevron hasn’t disclosed specific financial details, the people said.

Large energy companies have been selling or spinning off transportation and storage operations to cut costs and raise money for exploration. Chevron sold a northwestern U.S. pipeline business last year to Tesoro Logistics LP. The company has also begun seeking buyers for pipeline and storage assets in Texas and Louisiana that could be worth more than \$1 billion, people familiar with the matter said in January.

It could take months for Chevron to decide what to do with its entire domestic midstream business, according to one of the people familiar with the situation. It may decide to against a sale and is unlikely to exit midstream entirely, the people said.

## Wood Mackenzie: Lengthy Delays To Panama Canal Expansion Pose Trade Risks

Wood Mackenzie expects the recent cost overrun disputes around the Panama Canal expansion to be resolved with limited disruption due to the significance of the canal to global trade. Significant disruptions



Delays in the expansion of the Panama Canal could pose a considerable headwind to the North American LNG industry.

will crimp profitability for U.S. liquefied natural gas (LNG) producers, create a tighter LNG shipping market and affect the U.S. Gulf Coast petrochemical industry.

“Given the enormous strategic and financial importance of the Canal to Panama, we expect the gridlock to be resolved,” Andrew Buckland, Senior LNG Shipping Analyst at Wood Mackenzie, said. “If the delays last six to 12 months, it will have limited impact, as trade will carry on much as it does now, but further delays threaten the investments of a significant number of groups that are set to benefit from expanded capacity on the waterway.”

The expansion will benefit users depending on the position of their ports in relation to the canal, particularly the U.S., whose cargo accounts for 65% of total cargo moved through the canal.

### LNG Industry

- LNG is not currently traded through the Panama Canal as most LNG vessels are too wide to fit through the locks. The expansion project will allow all but the very largest LNG ships to use the Panama Canal.
- A delay until early 2016 will impact the first U.S. Gulf LNG exports from Sabine Pass. This will impose a higher shipping cost to target markets in Asia as ships will need to take a longer route via the Cape of Good Hope. However, the differential between U.S. and Asian gas prices will still make the trade profitable and initial volumes will be small as the project ramps up.
- The LNG shipping market will be tighter (with higher spot-market freight rates) than it would otherwise have been as volumes from Trinidad and the U.S. will have to travel the long way to Asia. The LNG shipping market is expected to weaken between now and 2016 as new ships are delivered to the market before new capacity comes onstream.

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### Oil Industry

- No impact on Venezuelan crude exports to China; Trade will continue to be more cost effective in Very Large Container Carriers (VLCCs) that are too big to fit through the expanded canal.
- Supports higher product prices in Chile and exposes U.S. exports to higher shipping costs.
- Supports product exports via alternate routes.

## Williams Receives Commitments For Atlantic Sunrise Expansion

Williams Partners L.P.'s Transco pipeline system received binding commitments from nine shippers for 100% of the 1.7 million dekatherms of firm transportation capacity under its proposed Atlantic Sunrise expansion project. The project includes 15-year shipper commitments from producers, local distribution companies and power generators.

The project will connect surging, new supplies of natural gas in the Marcellus producing region in northeastern Pennsylvania with growing demand centers along the Atlantic Seaboard. Williams Partners expects to bring Atlantic Sunrise into service in the second half of 2017, assuming all necessary regulatory approvals are received in a timely manner. The project's investment is expected to total \$2.1 billion.

The Atlantic Sunrise project adds to the list of Transco mainline expansions, including Leidy Southeast and Virginia Southside. Transco is pursuing expansions that between 2013 and year-end 2017 are expected to add more than 50% to its system capacity.

The Atlantic Sunrise project will consist of compression and looping of the Transco Leidy line in Pennsylvania along with a greenfield pipeline segment, referred to as the Central Penn Line, connecting the northeastern Marcellus producing region to the Transco mainline near Station 195 in southeastern Pennsylvania. The greenfield segment will be jointly owned by Transco and a third party.

## California Crude Terminal Project Put On Hold

Environmental groups and local organizations in east Contra Costa County, California, declared victory after the government of the city of Pittsburg delayed approval of plans to develop a crude oil terminal, the East Bay Express reported.

City Manager Joe Sbranti announced at the February 18 city council meeting that, based on public comments, city staff decided it needed more information for parts of the environmental review and wanted to give the public more time to comment.

The proposed terminal would bring an average of 242,000 barrels a day of crude oil by barge and rail to a hub that would then supply area refineries. Residents' initial concerns centered on the fear that the terminal would import dirty crude oil from Canadian tar sands, increasing the level of local pollution and risk of accidents in a city already identified as heavily polluted by the Bay Area Air Quality Management District.

Environmental groups including the Sierra Club, Natural Resources Defense Council, and Communities for a Better Environment have been fighting the project.

## BNSF Seeks New Oil Tank Cars To Boost Safety

BLOOMBERG

Warren Buffett's BNSF Railway Co. is seeking bids for 5,000 oil tank cars with improved safety standards following a series of spills and explosions related to hauling crude by railroad.

The request for bids will be made to "numerous" makers of the tank cars, said Roxanne Butler, a spokeswoman for BNSF, which is owned by Buffett's Berkshire Hathaway Inc. They will be submitted by mid-March and a decision should be made by the end of summer, she said.



The rail industry responded to several safety concerns this week with new precautions and regulatory proposals for transporting crude oil, including going through populated areas such as Alexandria, Va. (above). (Courtesy: Hart Energy)

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Regulators and trade groups are studying new rules to improve tank-car safety, spurred by a July derailment that killed 47 in Lac-Mégantic, Québec, and another in February that dumped 4,500 gallons of crude in Pennsylvania. An effort to reduce the potential risk of hauling oil by rail may be driving BNSF to adopt the new cars, said Anthony Gallo, an analyst with Wells Fargo & Co. in Baltimore.

“The railroads like the oil business, but if it suddenly has material liability risk to it, then they’re not going to like it nearly as much,” Gallo said.

The added safety features will increase the weight of the cars and force producers to shrink their size to meet weight limitations, said Toby Kolstad, president of the consulting firm Rail Theory Forecasts LLC. A tank car without a steel jacket can haul more than 31,000 gallons, while one with the jacket has a capacity of 27,000 gallons, he said.

The safer cars may cost as much as \$150,000 each, Kolstad said. Railroads often put out a request for bids on tank cars and then negotiate with a leasing company to take ownership of the rolling stock, he said.

### Accidents Prompt U.S. To Require Tests Of Oil On Trains

BLOOMBERG

U.S. energy companies using rail to carry crude must conduct tests to help ensure the oil cargoes won't explode or eat holes through tank cars after rising train derailments spurred new emergency rules.

The order issued February 25 by the U.S. Transportation Department inspired some protests, but mainly confusion as refiners and producers tried to understand what the new requirements will mean to their operations and how broadly they will apply to shipments across the country.

“What do you want us to do? What do you want us to test for?” said George Stutzmann, director of supply, trading and business development for oil refiner Alon USA Energy. “I’m not really sure what this means or what they expect from us,” he said on the sidelines of a conference in Glendale, California, held to discuss the markets for crude by rail.

Oil explorers including Continental Resources Inc. and EOG Resources Inc. will be required to test the chemical composition of all crude intended for shipment by rail. The new rules appear to reclassify some grades of oil and require stricter safety measures for trans-

port, said Marvin Trimble, director of commercial development for Strobel Starostka Transfer Canada Ltd.

“It’s going to have far-reaching ramifications, and I don’t know for how long,” said Trimble, whose Calgary-based company provides rail services to the energy industry.

A refining industry trade group criticized the directive for leaving “several questions unanswered,” including how often testing should be conducted and how crude shipments might be affected.

The American Fuel & Petrochemical Manufacturers said in a statement it hoped the transportation department “will work collaboratively to answer these and other unanswered questions.”

### Railroads Agree To Slow Oil Trains In Populated Areas

BLOOMBERG

Railroads agreed with U.S. regulators to slow trains hauling crude oil and install safety equipment in response to derailments including an accident and explosion in Canada that killed 47 people.

The Association of American Railroads, representing companies including Berkshire Hathaway Inc.’s BNSF Railway Co., said its members will reduce speeds of certain trains carrying crude. Trains with at least 20 cars, including a model linked to the accidents, will slow to 40 mph or less near 46 urban centers areas deemed as high risk.

“The rapid increase in the production and transportation of crude oil requires additional vigilance for the continued safe movement of this commodity,” Transportation Secretary Anthony Foxx wrote in a letter to Edward Hamberger, president of the Washington-based railroad association.

Holly Arthur, a spokeswoman for the group, said the new speed is 10 mph slower than trains now travel in the areas. She said the impact on railroad operations would be minimal and companies will monitor the effect of the lower speed limit.

The companies reached agreement with the Transportation Department after weeks of talks spurred by the derailments. In addition to the July disaster in Lac-Mégantic, Québec, residents of a North Dakota town were evacuated after an oil train car derailed and exploded. No one was injured in the accident.



## NEWS & TRENDS | Up To Date

Railroads also agreed to install new sensors about every 40 miles along routes used by trains carrying crude. The companies said they would use a new rail management tool to determine the safest and most secure routes for trains with 20 or more cars. The evaluation will cover population density, local emergency-response capability and track quality, according to the railroad association.

Federal regulators are separately considering requiring upgrades to the DOT-111 tank car, which the U.S. National Transportation Safety Board has said must be strengthened to reduce spill risks.

### Price River Terminal Ships First Unit Train Of Uinta Crude

Global One Transport Inc. reported the shipment of the first unit train of Uinta basin crude from its Price River Terminal (PRT) crude-by-rail facility.

The PRT, which opened December 2013 in manifest train service, is now the only facility in eastern Utah capable of shipping unit trains of crude. Direct access to both the Union Pacific and Burlington Northern Santa Fe railroads allows PRT to provide its customers access to refineries throughout the country, unlocking previously unavailable markets.

The facility is currently being expanded to include automated truck unloading racks and tankage to provide area producers with flow assurance. Future expansion is also scheduled for transloading of dry bulk commodities, such as frac sand, ceramic proppants, tubular pipe, oilfield equipment, building products, and other materials to support the drilling industry.

### Midstream M&A Transaction Value Surged in 2013, IHS Says

Driven by a rapid influx of master limited partnerships (MLPs) and expansion projects aimed at serving developing U.S. shale energy plays, worldwide midstream sector mergers and acquisitions (M&A)

transactions surged by 16% above 2012 transaction values to reach just over \$62 billion, despite a decrease in deal count, says information provider IHS.

“This \$62 billion midstream deal value in 2013 was an all-time high for midstream transactions, if you exclude the extraordinary \$32 billion dollar midstream portion of the \$41 billion Kinder Morgan/El Paso transaction in 2011 that elevated transactions to more than \$78 billion,” said Cynthia Pross, midstream transactions analyst at IHS Energy and principal author of the IHS Herold Year-End 2013 Midstream Transaction Review. “There is no reason to expect this upward trend to wane in the next several years as the pool of midstream assets continues to grow in response to shale play expansion.”

According to the IHS review, midstream assets, which include gas and oil gathering and processing facilities and pipelines as well as oil tankers, LNG vessels, and diversified holdings, reached the \$62 billion mark from 54 deals with values exceeding \$10 million, with 14 of these deals at the multi-billion dollar level.

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### FMI Report: \$330B Slated For Infrastructure Construction

BY **DEON DAUGHERTY** | ASSOCIATE EDITOR, MIDSTREAM BUSINESS

Surging demand for oil and gas workers is increasing pressure on the construction market, as more workers are needed to build the infrastructure that's critical to get the commodities to the market.

The total construction workforce engaged in the energy sector almost doubled between 2008 and 2012 to 6.4%, according to a recent report by the construction consultants at FMI Corp. This increase shows no signs of abating. FMI estimates that by 2017, almost 10% of the U.S. construction workforce will be laboring in oil and gas construction projects.

In the report, “Skills Shortages in a Booming Market: The Big Oil and Gas Challenge,” FMI Vice President Scott Duncan said that as competition heats up for resources, labor and talent management are becoming key differentiators in corporate performance and overall company value.

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## SNAPSHOT | Industry Insight

# CME: U.S. Oil/Gas Price Gap Could Be Wiped Out In 3-5 Years

BY JACK PECKHAM | HART ENERGY

Defying a current energy-market consensus that foresees an “extremely long time frame” for today’s huge price gap between oil and natural gas spot prices in North America, economists at CME Group—operator of the NYMEX oil and gas futures markets—have issued a new, startling report concluding that this price gap is likely to disappear “in just three to five years.”

The report potentially could spark caution among individual fleets considering a massive switch from diesel to natural gas. Reason: A disappearing oil-to-gas price gap inevitably would eliminate the diesel-to-natural-gas price gap.

It also could help give North American power producers a fair warning about over-committing to natural-gas-fired generation if gas prices are indeed heading for a sharp rebound within five years.

Potentially, this price-gap elimination also could revive (or help support) projects in “clean” power alternatives such as coal-gasification—especially if coal trades cheaply against pricier natural gas.

Today, the price spread between spot crude oil and spot natural gas measured in U.S. dollars per million British thermal units (MMBtu) “is a whopping 330%,” according to the CME economists’ new study.

“In Btu terms, \$1 of natural gas can obtain 200,000 units of energy at a spot rate of \$5 per MMBtu, compared to \$1 of WTI [West Texas Intermediate crude] oil which garners 60,000 units of energy at a spot rate of \$97 per barrel,” according to the study.

“This massive energy price gap raises questions about how long it may persist, and our read of the market consensus appears to measure the time required to narrow the gap in decades, while our own base case scenario is that it could happen in just three to five years.”

According to the study, “even if natural gas just increases its share of energy use for [U.S.] transportation from 3% [today] to the 7% to 10% range over the next five years, that could translate into a dramatically faster closing of the [oil to gas] energy price gap than the [market] consensus now suggest.”

In an exclusive February 10 interview with Hart Energy, CME chief economist Blu Putnam said that plans for massive expansion of natural gas consumption in U.S. transport—at an accelerated rate—apparently haven’t yet penetrated the thinking of many gas-market participants.

This would explain why forward prices on NYMEX natural gas haven’t moved up correspondingly. At least, not yet.



**Gas prices are headed for a rebound and could erase the price gap with crude within a matter of years, according to a recent CME Group report.**

While various individual reports (especially in the last 18 months) have highlighted growing purchases of vehicles, locomotives and ships that would run on compressed natural gas (CNG) or liquefied natural gas (LNG), and various research groups recently have made bullish forecasts on U.S. LNG/CNG demand in North America and globally, the latest CME study isn’t based on any specific reports or recent third-party studies, Putnam said.

Rather, “we see this adding up,” he said. “Companies are putting billions of dollars into play [for natural gas in transport], but the actual results are one, two or three years away.”

So, while many natural gas market participants will wait to see more data before making any bets on much-higher gas prices, the new CME economists’ study “is a scenario to consider,” Putnam told Hart Energy.

With such a huge gap between oil and gas prices today, there’s a powerful incentive to switch to gas in transport—even leaving aside today’s relatively paltry CNG/LNG infrastructure and the higher cost of gas engines, the report notes.

However, the natural-gas market has a long history of reacting to powerful forces, including today’s massive expansion of shale-gas production in North America. The lesson: Big changes in supply and demand explain natural gas’s history of price volatility.

On the other hand, “powerful incentives eventually disappear,” as massive switches to “cheap” gas inevitably would cause gas-price rebounds, Putnam pointed out.

This doesn’t mean that companies investing in natural-gas trucks, buses, locomotives or ships in the next few years will regret making such investments in another five years or so, he added.

Among the reasons: Some of the engines they’ll buy would be capable of running on either natural gas or diesel, especially in marine and locomotive applications.

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**LEAD STORY** | From The Front

Continued from **Page 1** through pipelines to Mexico. Ample supplies exist in the U.S. that can meet local demand, but may require new infrastructure or rerouting.

Much of the increased demand in the state is expected to come from LNG exports as well as petrochemical and industrial end-users, and gas-fired power generation. Thus far, much of the market share for LNG exports derives from projects in Louisiana due to good brownfield sites, pipeline capacity and ready access to shipping. Within the next five years, it is expected that there will be 4 billion to 6 billion cubic feet (Bcf) per day of export capacity built along the state's coast with the possibility of an additional 3 to 4 Bcf per day built in the next decade.

These increases are likely to see the U.S. operate as the global swing provider for LNG, especially given the storage capacity along the Gulf Coast combined with storage injection levels that occur in the spring and summer.

A potential headwind for the industry will be the necessity of managing supplies to both these LNG export terminals while also managing seasonal demand from natural gas for utilities in the Southeast. This section of the country is expected to be one of the fastest-growing markets for gas-fired power generation, with incremental demand expected to grow by more than 1 trillion cubic feet per year, or 3 billion cubic feet (Bcf) per day, by 2025, according to the report.

"Southeast gas consumption growth can be aggregated into Louisiana demand analyses because the majority of new supplies flowing on pipelines serving the region will likely be sourced at pipeline interconnections in Louisiana," the paper said. It is possible that fuel buyers may switch their portfolios to northern Louisiana, where interconnections with supplies from other basins enter the state, to compensate for the decrease in production out of southern Louisiana.

At the same time that LNG and utilities are adding new capacity along the state's coast, the petrochemical industry is building new crackers to take advantage of the price advantages of domestically produced natural gas liquids (NGL).

According to the report, these new demand sources could result in Louisiana gas demand nearly doubling by 2020 with a cumulative daily load growth of nearly 10 Bcf per day by 2025: "Since much of the gas supply to meet this demand will not flow through southern

Louisiana, but instead be 'imported' through northern Louisiana, new infrastructure may be needed to deliver to market."

**Supply Solutions**

Supplies out of the Marcellus and Haynesville are expected to be the primary sources of gas into Louisiana, with the Marcellus gaining more market share early on due to its stronger economics.

"Year-end 2013 statistics show that Marcellus shale producers again outpaced expectations, and pushed total production in the basin to roughly 13 Bcf per day. That success has already spawned several pipeline firm transportation contracts southward to Louisiana with both producers and fuel buyers. More firm contracts to Louisiana delivery points are likely," the authors noted.

While the Haynesville has largely been ignored by industry observers in the past few years, the formation could be very useful in meeting demand as ICF anticipates that production out of the play will increase to nearly 6 Bcf per day through 2025.

It's one thing to build new infrastructure to gain access to new supplies, but actually securing these supplies could prove to be difficult as other regions of the country are also increasing their usage of natural gas. Heavy competition for Marcellus shale gas is expected to come from New England, the Northeast, eastern Canada and the Upper Midwest.

"If southern LNG exporters, Gulf Coast industrial plant operators, and Southeast power generators all view Louisiana as the natural origination point for significant shares of their future gas, they will need to make fuel procurement arrangements that allow them to deal with having so many markets tapping the same supply sources," the report said.

Thus far, interstate pipelines have been able to meet current demand levels by transporting Marcellus gas to the southern region via backhaul displacement services, but such methods are limited because they are dependent on northbound flows of gas. "The implication is that the day for needing to physically reverse flows southward is rapidly approaching for many pipeline systems," the paper said.

The costs necessary to increase the transportation capacity from the Marcellus into Louisiana are significant. They will either be borne by producers integrating downstream into the market or buyers integrating upstream into the market. Either method will take time as contracts and construction will be necessary.

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