MIDSTREAM Monitor

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FEATURES

Is Growth Getting Too Good?

PAUL HART | HART ENERGY

PLANO, Texas—The world's economy has moved into a rare growth alignment and that will benefit North America's energy industry greatly, according a Caterpillar Inc. economist. But it also threatens to raise costs and create a labor shortage that could bring that economic growth to a halt.

"Pipeline investment requires oil and gas growth on a global basis, as well as in the U.S." Laura Speake, regional chief economist for energy and transportation for the big construction equipment firm, said in her Nov. 8 keynote address to the 3rd annual Pipeline Leadership Conference. And that's happening now, she said: "We are experiencing the best economic growth on a global basis that we have seen in a decade."

All 45 developed nations in the Organization for Economic Cooperation and Development have growing economies now "and that doesn't happen very often," Speake added, noting this is only the fourth period in 50 years when that has occurred. "We seldom see global growth in sync in this manner."

See **GROWTH** on Page 3.

MIDSTREAM MONITOR WILL NOT PUBLISH NEXT WEEK IN OBSERVANCE OF THE THANKSGIVING DAY HOLIDAY.

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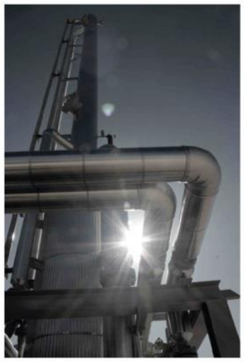

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GROWTH

That's good news for the U.S. energy business at a time when the industry has started to emphasize exports in a manner that has never happened before—while domestic oil and gas demand has started to grow again. Crude oil exports are growing, petroleum product demand abroad remains strong and the nation is emerging as a major LNG supplier.

Laura Speake sees a coming glut in global LNG.

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The one negative to that export boom, according to Speake, "is a coming glut in the LNG industry" as U.S. capacity expands at the same time as Australia and Mideast producers expand. However, new U.S. LNG liquefaction capacity is coming on the market at a much lower cost than foreign competitors and that will assure the domestic gas business will be a major worldwide player.

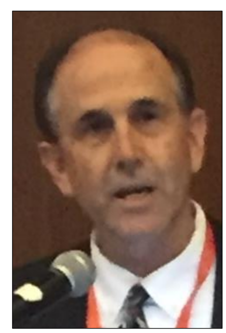
Speake, whose career was in energy and utilities before joining Caterpillar, said exports represent one of four components that create domestic economic expansion. The others are public consumption, investment and government expenditures. All four are strong now, she said.

In oil and gas, "we have investment again that has been missing" since the 2014 commodity price crash, she said. "Growth is getting better in the U.S." Growing demand and economic expansion are good for oil and gas, of course, but they also threaten the energy business.

"Continuing market growth means we could be getting tight on labor," Speake said. Upstream producers and midstream operators need the same workers who drill wells and completion equipment; or build processing plants, lay pipelines and build terminals; or drive trucks, pave roads and construct houses and offices. And there are only so many of them out there.

Pipeline Safety Requires 'Pursuit Of Perfection'

PLANO, Texas—Pipeline management must focus on people as clearly as it does on assets, a leading safety management executive told the 3rd annual Pipeline Leadership Conference.



Tom Hutchins, vice president of environmental, health and safety for Kinder Morgan Inc., told attendees in his conference-opening address Nov. 8 that "you can't do it without people."

Tom Hutchins, vice president of environmental, health and safety for Kinder Morgan Inc., told attendees in his conference-opening address Nov. 8 that "you can't do it without people." Management should remember that "we work in an industry with inherent risks. We need to make sure everyone knows the process. We want everyone to go home safely every day."

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Kinder Morgan emphasizes a "passionate pursuit of perfection" in its safety culture, Hutchins said, something emphasized by Executive Chairman Richard Kinder himself. Hutchins explained that he came to Kinder Morgan through its acquisition of El Paso Natural Gas, a company that emphasized "excellence" in its safety policy.

That isn't good enough, Kinder once told Hutchins.

"He told me, 'How can we say anything else? We're talking about people. You've got to do that because we're talking about personal safety and pipeline integrity,'" Hutchins said the company's co-founder told him.

"If your emphasis is on the asset, who else is going to know about?" Hutchins added. "But if you lose a pipeline, everyone will know about it." A company's safety culture must extend outward to include contractors and vendors as well as employees, he emphasized.

—**PAUL HART** | HART ENERGY

FRAC SPREAD

NGL 'Barrel' Rally Born On Fourth Of July

JOSEPH MARKMAN | HART ENERGY

The hypothetical NGL barrel claimed another high for the year, but a spike in natural gas spot prices combined with little movement for NGL to cut into margins last week. In the case of ethane, the cuts were deep.

The Mont Belvieu, Texas, barrel came within 1 cent of $33, its highest level in three years. At Conway, Kan., the barrel's high for 2017 was also the fifth week in the last eight above $30 and the highest price since Thanksgiving week 2014.

CURRENT FRAC SPREAD (CENTS/GAL)

NOVEMBER 17, 2017	Conway	Change from Start of Week	Mont Belvieu	Last Week
Ethane	17.98		25.60	
Shrink	20.99		20.30	
Margin	-3.01	152.70%	5.30	-31.61%
Propane	91.92		96.76	
Shrink	29.00		28.04	
Margin	62.92	-0.82%	68.72	-2.04%
Normal Butane	99.88		103.55	
Shrink	32.83		31.74	
Margin	67.05	-3.73%	71.81	-2.20%
Isobutane	103.78		103.90	
Shrink	31.53		30.49	
Margin	72.25	-4.34%	73.41	-2.60%
Pentane+	129.15		137.35	
Shrink	35.11		33.95	
Margin	94.04	-1.43%	103.40	-1.50%
NGL $/Bbl	30.66	1.40%	32.99	0.46%
Shrink	11.57		11.18	
Margin	19.10	-3.30%	21.80	-3.48%
Gas ($/mmBtu)	3.17	10.24%	3.06	9.15%
Gross Bbl Margin (in cents/gal)	44.35	-3.31%	51.17	-3.54%
NGL Value in $/mmBtu (Basket Value)				
1.04	0.99	0.73%	1.41	-2.85%
3.12	3.19	2.42%	3.36	0.96%
1.16	1.08	0.45%	1.12	1.02%
0.69	0.65	-0.34%	0.65	0.58%
1.53	1.67	1.49%	1.77	0.93%
7.54	7.57	1.47%	8.30	0.27%
4.61	4.41	-4.02%	5.24	-4.28%

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 Midwest region, Mont Belvieu based on Houston region. Shrink is defined as Btus that are removed from natural gas through the gathering and processing operation.

While ethane prices have struggled in the aftermath of Hurricane Harvey's impact on Gulf Coast ethylene facilities, propane, butane and isobutane have ducked and weaved around year-highs in recent weeks. C_{5+}, however, has been on a steady upward march since the Fourth of July.

The price of natural gasoline has advanced in 13 of the 17 five-day (Wednesday to Tuesday) trading periods that Hart Energy defines as "weeks" in that time at Mont Belvieu, resulting in a 37.6% increase. At Conway, the 28.2% rise was accomplished with hikes in 10 of the 17 weeks.

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Those prices are the highest since late-March 2015 at Mont Belvieu and mid-December 2014 at Conway. They are 44.5% higher than the Mont Belvieu low for the year, set in mid-June, and 34.7% higher than the Conway low set at the same time.

Natural gas prices spiked Nov. 8 as a cold front gripped the northern tier of the U.S., but subsided as the weather returned to seasonal norms. The week's average, however, was about 9% higher at Mont Belvieu, cutting the ethane margin from almost 8 cents per gallon to 5.3 cents.

En*Vantage sees the stalling of ethane prices as a balancing of five ethylene plants out of commission (three due to damage from Hurricane Harvey and two for maintenance) and the recent opening of Dow's ethane cracker in Freeport, Texas. Add in the OxyChem/Mexichem in Ingleside, Texas, and LyondellBassell's expansion in Corpus Christi, Texas, along with the recent burst of exports from Enterprise Products Partners LP's (NYSE: **EPD**) Morgan's Point terminal on the Houston Ship Channel and ethane has weathered the storm fairly well.

Brent-WTI Gap Won't Close Anytime Soon

The U.S. oil industry rightly looks enviously at Brent crude prices, which have been selling at a premium as high as 16%—$8.18—more than a barrel of West Texas Intermediate (WTI) since August.

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The imbalance is unlikely to ease anytime soon, but it also comes as WTI spot prices have jumped up by 35%—from a low point of $42.48 in June—to $57.34 on Nov. 6.

The Brent-WTI spread—which widened to $8.18 on Sept. 26 and averaged nearly $6 per barrel (bbl) in October—follows the aftermath of Hurricane Harvey, which bottled up production in Cushing, Okla.

The larger price disconnects are rooted in several challenges for U.S. E&Ps. But two factors loom larger than others and will keep WTI depressed through at least first-quarter 2018: transportation constraints and export add-on fees.

Justin Jenkins, a Raymond James analyst, found that the Brent-WTI spread rose to $2.25 in first-half 2017, up 2.5x from 2016's $0.88 differential. Since August, the spread has widened to an average $3.50, Jenkins said in a Nov. 13 report.

"The WTI price spread with Brent reflects the transportation costs associated with bringing crude oil from Cushing to the U.S. Gulf Coast and with exporting crude oil to Asia, the marginal market in which Brent and WTI crude oils compete," the U.S. Energy Information Administration said in a Nov. 8 report.

—DARREN BARBEE | HART ENERGY

Selling US Gas To China

A rebound in China's greenhouse gas emissions could be good news for U.S. LNG exporters. The decline in China's coal consumption for three consecutive years had fueled hopes that the country's carbon dioxide emissions might already have peaked in 2016. But coal use has been rebounding, and the Global Carbon Project has estimated that China's greenhouse gas emissions for 2017 will be up about 3.5% from last year.

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Using gas instead of coal can be a way to cut those emissions and it also helps cut local air pollution, which is a more immediate imperative. As a result, China is expected to be the world's most important market for future gas demand growth, and last week, President Donald Trump was accompanied on his visit to China by U.S. companies looking for a piece of the action.

Trump was perhaps not the best salesman for the environmental benefits of U.S. gas, given that he announced his plan to withdraw from the Paris climate agreement. Still, some U.S. energy companies were able to come away from the trip with agreements. —ED CROOKS | FINANCIAL TIMES

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