MIDSTREAM Monitor

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THE INTERVIEW: Harold Hamm

'The Balance Has Shifted'

LESLIE HAINES and PAUL HART
HART ENERGY

Sales abroad of crude oil, natural gas and petroleum products have reached more than 7 million barrels of oil equivalent per day (MMboe/d), representing a new industry for the U.S., according to Harold Hamm, who heads one of the nation's largest independent oil and gas producers.

Crude oil exports alone may increase to 4 MMbbl/d by 2022, according to recent remarks by Enterprise Products Partners LP, as the world demands more light sweet crude. China has gone from taking just one cargo

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Source: Hart Energy

HAMM

of under 1 MMbbl in the first eight months of 2016 to buying about 115,000 bbl/d from the U.S. so far this year, according to Reuters*.*

The problem is, the nation simply is not equipped to handle the potential outflow after a 40-year federal law that prohibited most crude sales abroad. The nation's excellent midstream infrastructure was directed to bringing in and distributing oil supplies—not sending them out.

The shale revolution changed that. The U.S. has re-emerged as a major crude oil and natural gas trader on the world's energy stage.

New infrastructure must go in place to transport and/or liquefy the gas and load tankers—many of which are so large they can't enter U.S. ports—if the U.S. expects to reach its potential. Since Hamm has been a strong proponent of energy exports, the editors of Midstream Business *and its sister publication,* Oil & Gas Investor*, met with him at his Oklahoma City headquarters recently to discuss the potential and challenges he sees in fulfilling that promise.*

In addition, he explained why his team takes issue with the U.S. Energy Information Administration's (EIA) data and projections, upon which so many securities analysts, and the industry itself, rely. He thinks the EIA's errors are causing a lot of misperceptions about the global oil glut and charges that it's caused by U.S. producers.

RELATED STORY
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MIDSTREAM Why are crude exports so important to U.S. producers?

HAMM We can't control the market, so, through contractual arrangements or otherwise, oil and gas companies are quickly changing what they do and how they do it. We've brought in people to do that and we're not the only ones. Thirty percent of U.S. oil production could be going to foreign countries soon. It would be "game over" if the U.S. couldn't sell that oil, that's the name of the game.

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The current amount of exports is important; over 6 million barrels per day of crude and petroleum products are now being exported. This is new and additional business for the midstream and, as I've said, it's a new industry for America. We said it would spawn a whole new industry and it has; a lot of new companies have sprung up. It's a little bit hard on our infrastructure because this is going all around the world.

The first product shipments were going to South America, but there are a lot of shipments of crude and products now going all over. China is a big market: They have a lot of these small—I call them "teapot"—refineries, but some of them run 160,000 barrels per day, which is not that small. They were required to use domestic crude supply, but now they can deal directly with anybody and buy supply from anywhere—and they want to diversify their supply. The Chinese are coming here to talk.

They (China) need our light sweet crude. A lot of foreign refineries were built—and are operated—on the cheap. They are not complex and can't run heavy and sour crudes. We've found there are a lot of refineries that want light shale oil; there's a good market for it.

Enterprise Products (Partners LP) and my friend (Enterprise CEO) Jim Teague and other midstream operators have done very well with (crude oil) exports. One of the first shipments—in January 2016—was done by Enterprise.

MIDSTREAM You recently projected that U.S. LNG exports will roughly triple in the long term and take around 40% of domestic gas production. Given increasing LNG output by Australia and other suppliers, is there a sufficient worldwide market for such large volumes?

HAMM There is. The short answer is there are a lot of LNG markets and not always where you expect. There is a lot of interest even in the Middle East, in Dubai, for example, in U.S.-produced LNG. The Mideast producers have drilled for gas, thinking there would be a lot produced, but really not much has been found. And what they found has been sour natural gas, so they haven't had much success with it. It's tremendously sour.

We've seen LNG exports rise to between 2.5- and 3 billion cubic feet (Bcf) per day and it could grow to 10 or 11 Bcf per day by 2019. We're off to an awfully good start.

Jones Act Could Be Link To Offshore Wind Sector

The Jones Act, long a stingray in the side of the oil and gas sector, could be a convenient way for the industry to enter the North American offshore wind business.

Partnering with an offshore wind producer by supplying a Jones Act-compliant vessel that could be converted makes both regulatory and economic sense, Andy Geissbuehler, managing partner at Renewable Resources International, said in a white paper released by the US Offshore Wind Conference.


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The conversion cost for an existing vessel would be half that of building a new ship, providing a cost-competitive, domestic solution, Geissbuehler said. A newbuild would run about $300 million, he added, and the relatively limited volume of offshore-U.S. business would make that price hard to justify.

"U.S. offshore wind developers could benefit from a new generation of vessel designs being created for the European market," the white paper authors said.

The new designs, developed by a consortium that includes Siemens, Rexroth Bosch Group, Schottel and Neptun Ship Design, are geared to handle the next generation of turbines that will boast capacities of 8 megawatts (MW) to 15 MW per unit. The towers of these offshore giants will stretch 120 meters (m) and weigh 1,000 tons, with nacelles weighing 750 tons and 88-ton blades that will reach up to 110 m.

—JOSEPH MARKMAN | HART ENERGY

Rising Demand Was In Plentiful Supply, Experts Say

MIDLAND, Texas—It's been a demanding year, a trio of experts told attendees at the Hart Energy's Executive Oil Conference, but in a good way.

"At the beginning of the year we were in these doldrums, everybody was worried about whether demand would be strong, the U.S. was lagging, people were worried about what was happening in India and China," said Jeff Quigley, director of energy markets for **Stratas Advisors**. "Now we're going to have a close-to-record consumption year—1.7 million, maybe 1.8 million barrels [per day]—the refining markets are through the roof and there's huge demand right now for new sources of products."


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The U.S. is in prime position to take advantage of these growing markets, he said, with the country's refining industry on a roll over the past 18 months.

But the glowing economics extends past refined products, said Jodi Quinnell, manager of crude oil analytics at Boulder, Colo.-based **Genscape Inc**.

"With the big spread between Brent and WTI right now, we've seen exports as high as 2.5 million barrels a day," she said. "So it's not just the refined products market right now that's taking advantage of that arbitrage that's there for the crude oil exports out of the Gulf Coast." **—JOSEPH MARKMAN** | HART ENERGY

Durango Gets Backing From Morgan Stanley


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Houston's Durango Midstream LLC finds itself with a partner following the company's purchase of midstream assets in Texas, Oklahoma and Kansas on Nov. 20 for an undisclosed amount.

The day after the deal, on Nov. 21, Morgan Stanley Energy Partners (MSEP) entered a strategic partnership with Durango to contribute a "majority equity investment" that will support growth targeting the Midcontinent's Merge, Scoop and Stack plays.

Durango is a natural gas gathering, processing and marketing company providing services to oil and gas producers in Texas, Oklahoma and Kansas. Durango is led by president and CEO Richard A. Cargile, who previously served as president of midstream operations for Energy Transfer Partners LP (NYSE: **ETP**). **—DARREN BARBEE** | HART ENERGY

FRAC SPREAD

NGL Prices Race To 37-Month Highs

JOSEPH MARKMAN | HART ENERGY

The propane- and butanes-fueled rally pushed NGL prices to 37-month highs at both hubs during the eight-day "week" that was extended by the Thanksgiving Day holiday.

Propane found its way to a 38-month high at the Mont Belvieu, Texas, hub as it nearly averaged $1 per gallon (gal) for the first time since October 2014. The price at the Conway, Kan., hub missed 96 cents/gal by one one-hundredths of a cent, also a 38-month high.

CURRENT FRAC SPREAD (CENTS/GAL)				
DECEMBER 1, 2017	**Conway**	**Change from Start of Week**	**Mont Belvieu**	**Last Week**
Ethane	18.30		24.86	
Shrink	19.52		19.45	
Margin	-1.22	-59.54%	5.41	2.05%
Propane	95.99		99.79	
Shrink	26.97		26.87	
Margin	69.02	9.70%	72.92	6.12%
Normal Butane	101.09		103.35	
Shrink	30.53		30.42	
Margin	70.56	5.24%	72.93	1.57%
Isobutane	105.11		104.72	
Shrink	29.32		29.21	
Margin	75.79	4.90%	75.51	2.85%
Pentane+	129.66		135.70	
Shrink	32.65		32.53	
Margin	97.01	3.16%	103.17	-0.22%
NGL $/Bbl	31.33	2.19%	33.13	0.44%
Shrink	10.75		10.71	
Margin	20.58	7.76%	22.42	2.82%
Gas ($/mmBtu)	2.94	-7.02%	2.93	-4.18%
Gross Bbl Margin (in cents/gal)	47.98	8.19%	52.77	3.13%
NGL Value in $/mmBtu (Basket Value)				
1.04	1.01	1.78%	1.37	-2.89%
3.12	3.33	4.43%	3.46	3.13%
1.16	1.09	1.21%	1.12	-0.19%
0.69	0.65	1.28%	0.65	0.79%
1.53	1.67	0.39%	1.75	-1.20%
7.54	7.76	2.47%	8.35	0.56%
4.61	4.81	9.28%	5.42	3.32%

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.

Margins improved for all NGL at the two hubs except for Mont Belvieu C5+, which dipped slightly.

Much of the optimism surrounding natural gas prices has been the vast potential of the Mexican market. U.S. companies, capitalizing on Mexico's energy reform and sunny projections of steadily ramping demand, have been building pipelines and shipping higher volumes of gas south.

The problem, as **En*Vantage Inc.** notes, is that while Mexico's domestic gas production has declined 1.4 billion cubic feet per day (Bcf/d) from 2015 to 2017, U.S. exports to that country have increased by 1.3 Bcf/d. In other words, U.S. export growth has matched the loss in Mexican production, revealing none of the anticipated increase in consumption demand.

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"If drilling ever picks up in places such as the Burgos Basin in northern Mexico (which is the intent of the Mexican government) we may find that the theoretical growth that we have been expecting could even be much lower than expected," En*Vantage analysts said.

Ethane prices stumbled again at Mont Belvieu, dropping to their lowest point since mid-September, although the price at Conway rose above 18 cents/gal for the first time in five weeks.

TOP STORIES

OPEC, Russia Agree To Oil Cut Extension Until End Of 2018

VIENNA—OPEC and non-OPEC producers led by Russia agreed on Nov. 30 to extend oil output cuts until the end of 2018 as they try to finish clearing a global glut of crude while signaling a possible early exit from the deal if the market overheats.

Russia, which this year reduced production significantly with OPEC for the first time, has been pushing for a clear message on how to exit the cuts so the market doesn't flip into a deficit too soon, prices don't rally too fast and rival U.S. shale firms don't boost output further.

Russia needs much lower oil prices to balance its budget than OPEC's leader Saudi Arabia, which is preparing a stock market listing for national energy champion Aramco next year and would hence benefit from pricier crude.

The producers' current deal, under which they are cutting supply by about 1.8 million barrels per day (MMbbl/d) in an effort to boost oil prices, expires in March.

Kuwaiti Oil Minister Essam al-Marzouq told reporters OPEC and non-OPEC allies had agreed to extend the cuts by nine months until the end of 2018, as largely anticipated by the market. **—REUTERS**

TransCanada Engages Landowners On KXL Route

CALGARY, Alberta/TORONTO—TransCanada Corp. (NYSE: **TRP**) has started engaging landowners on a new route for its Keystone XL pipeline approved by the state of Nebraska, the company said on Nov. 28, exploring the costlier path as it mulls a final decision on the expansion project mooted nearly a decade ago.

Nebraska last week approved the $8 billion pipeline from Alberta to the state, but denied TransCanada its preferred route in favor of a slightly longer one. The decision opened the door to potential delays and emboldened activists who said they would try to kill the project through protests. **—REUTERS**

Canada Backs Trans Mountain Appeal As Hearings Start

CALGARY, Alberta—Canada's federal government on Nov. 29 backed Kinder Morgan Canada Ltd.'s second appeal to the country's energy regulator over local permits for its planned Trans Mountain oil pipeline expansion, as related public hearings began.

The government's response in a rare case put before the regulator comes as Kinder Morgan pushes its $5.9 billion pipeline in an increasingly public way. Since its federal approval last year, the project has run into increased roadblocks with lower governments and environmentalist and aboriginal opposition.

But while the National Energy Board (NEB) regulator comes under the government's authority, the quasi-judicial body renders its decisions independently.

Canada's minister of natural resources, Jim Carr, said in a statement on Nov. 29 his government has told the NEB it supports Kinder Morgan's request this month to set up a process to resolve potential disagreements with provinces or municipalities over the pipeline to the west coast. **—REUTERS**

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