MIDSTREAM Monitor

DEC. 30, 2016 | VOLUME 34 | ISSUE 50

FEATURES

Sale On

An expanded Panama Canal opens up opportunities for U.S. energy exporters, especially in lucrative LNG and ethane markets.

By **JOSEPH MARKMAN**, Hart Energy

Sunlight dances across the slate gray waters of the Houston Ship Channel, but only briefly. In the next moment the mass of charcoal-gray clouds dominating the horizon reasserts itself and raindrops pelt the darkened waves.

Hart Energy photos

But not for long. Swiftly, the sun returns and the channel calms. Volatile weather as metaphor for energy markets fits the perspective of an industry riding waves of fortune, confident of being a single achievement away (we've unlocked the Marcellus!) from controlling its journey yet anxious about storms lurking just beyond the horizon.

But if the way clear of low commodity price doldrums remains murky, there is confidence that the waters spanning the globe provide an answer. From Gulf Coast terminals, tankers laden with the bounty of the North American shale boom depart more and more frequently, and with the opening of expanded lanes in the Panama Canal, larger ships will open up Asian markets for competition from U.S. players.

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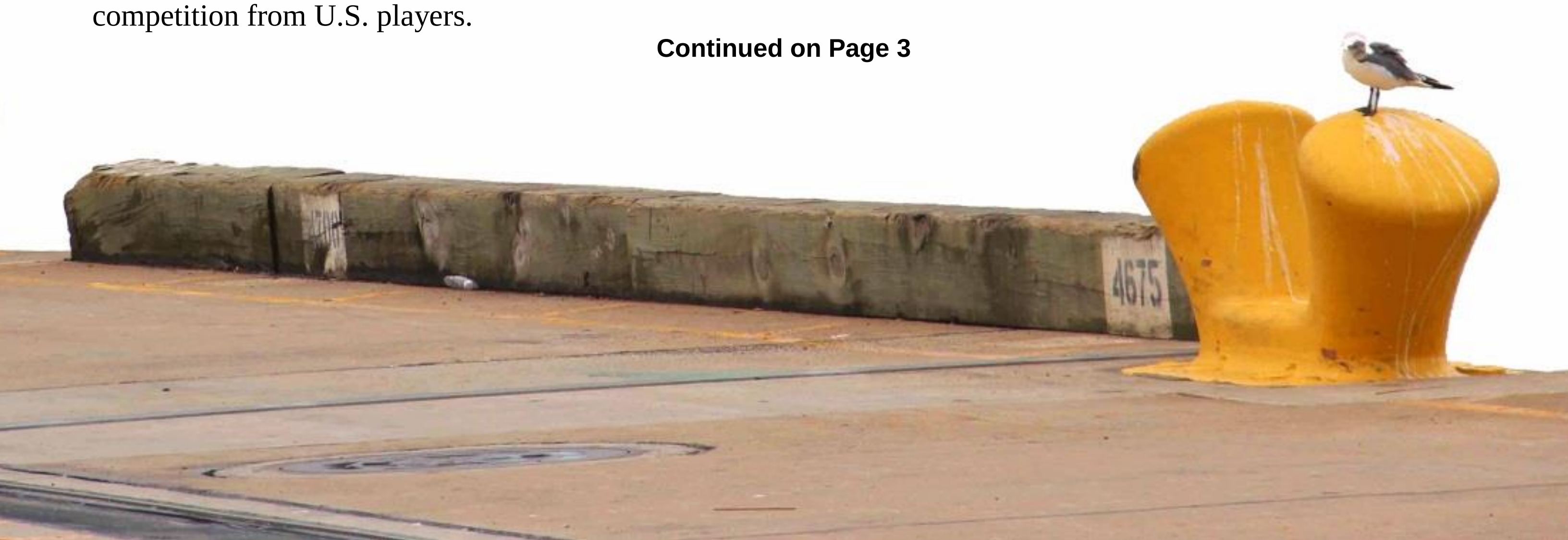

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The key is not just the size of the canal's new lane, but the size of the ships that can now traverse it.

"The depth [from 40 feet to 50 feet] has really helped expand the capacity overall," Greg Haas, director of integrated energy research at Stratas Advisors, told attendees of Hart Energy's **Midstream Texas** conference in September. "What that does is open up more economic shipping. You can get from one side of the ocean to the other without going down and around Cape Horn or, alternately, going down and around the continent of Africa and back up."

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How much time and money can be saved?

From the Gulf Coast to Asia, a ship would typically take about 80 days to move east from the Gulf of Mexico, across the Atlantic and around the Cape of Good Hope to deliver its cargo, then back again. Travel west through the Panama Canal and it's a 50-day round-trip journey with total savings of about $900,000, Haas said.

Mexican Energy Reform: How Howard's Projects Define Success

Mexico's energy reform was swathed in doubt from its birth in 2013.

How could a country with a longstanding culture of reliance on monopolies to run its oil, gas and electricity sectors suddenly open up its markets to foreign ownership? Then again, given the needs of its growing economy and the inability of its storied institutions to deliver the necessary energy, how could it not?

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Source: Hart Energy

Brandon Seale, president, Howard Energy Mexico, speaks at Hart Energy's Midstream Texas conference.

In 2013, San Antonio-based **Howard Energy Midstream Partners LLC** began its project to move Texas natural gas to Mexico via pipeline. The company filed for its presidential permit in 2014, received it in 2015 and expects the line to be in service in 2017.

As far as the Mexican government was concerned, Howard's process was the model.

"The Mexican secretary of energy himself told us that it's the best example of energy reform to date," Brandon Seale, president, Howard Energy Mexico, said during Hart Energy's **Midstream Texas** conference in San Antonio.

Click above to listen to attorneys Jaime Treviño and Carlos Chavez describe how to navigate the legal terrain of Mexico's energy reform.

Howard wasn't alone. The field was quickly becoming crowded with midstream competitors, but the company was first and well ahead of the pack with its Nueva Era natural gas pipeline project.

"We understood the market the best and most importantly, we were offering the cheapest transportation solution to the cheapest gas because fundamentally what we were doing was giving Mexican consumers access to gas directly in the field," Seale said. "Today, all of our gas goes to Mexico—it just gets there indirectly. It goes through other intermediaries, or it goes through Agua Dulce, or it goes to Houston and then comes down. All we are doing is just drawing a straight line down to the conception point and cutting out cost in between." **—JOSEPH MARKMAN,** Hart Energy

Oil, Gas Stories That Shaped 2016

For a down year, 2016 was quite eventful. Full of twists and turns, high drama and Trump, it is a year that oil and gas executives won't soon forget. What started with forecasts of doom and gloom is ending with hope for those invested in energy, particularly fossil fuels.

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Commodity prices, which were up and down all year, are up again. Following the U.S. presidential election and OPEC's agreement to cut production in November, some industry watchers dare to talk of $60 or $70 per barrel oil prices again. Prices dropped as low as $26 earlier in the year.

But those weren't the only significant happenings that promise to shape the industry going forward:

- **Trump turns things upside down, sideways and then some.**
- **OPEC finally makes a deal. Will it stick?**
- **Protesters put pipelines in their crosshairs.**
- **The Permian assumes a power position.**
- **Big discovery, big potential in the Delaware and Midland basins.**

—HART ENERGY STAFF

FRAC SPREAD

Butane Leads Strong NGL Year-end Rally

By **JOSEPH MARKMAN**, Hart Energy

The numbers don't lie—2016 was not a great year for NGL prices—but they do mislead.

Average out NGL component prices over 52 weeks and the hypothetical NGL barrel at Mont Belvieu, Texas, slipped 3.4% year-over-year (yoy), with the Conway, Kan., barrel down 1.4%. Though most of the components saw widening spreads in 2016, changes in the barrels' spreads were minimal, owing to tighter margins for C_{5+}.

Indeed, the price similarities are so great (except for C_{5+}, which suffered a 15% hit at Mont Belvieu and 11% drop at Conway) that 2016 appears to be a virtual repeat of 2015. But the final results belie the roads taken to get there.

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The barrel's price at Mont Belvieu in January 2015 was 10% above what it would be at the comparable time in 2016. It would rally in the spring, hang around $24 per barrel (bbl) through midyear, ease downward toward the end of 2015, and continue its slide into 2016.

This year began with the price wallowing in the low teens, with the Mont Belvieu barrel not reaching $20/bbl until May. At that point, the NGL symphony orchestrated its own "Bolero"-like crescendo to end the year chasing $30/bbl, and at its highest level since November 2014.

The hard numbers confirm hard truths: last year was as tough as it felt and the year-end prices were as promising as they felt.

CURRENT FRAC SPREAD (CENTS/GAL)

DECEMBER 30, 2016	Conway	Change from Start of Week	Mont Belvieu	Last Week
Ethane	25.25		27.65	
Shrink	23.75		22.80	
Margin	1.50	-319.21%	4.85	94.56%
Propane	64.08		64.98	
Shrink	32.81		31.50	
Margin	31.27	19.52%	33.48	14.30%
Normal Butane	109.63		116.63	
Shrink	37.15		35.66	
Margin	72.48	51.03%	80.97	53.29%
Isobutane	110.92		99.13	
Shrink	35.68		34.25	
Margin	75.24	18.36%	64.88	2.09%
Pentane+	117.25		112.00	
Shrink	39.72		38.14	
Margin	77.53	3.78%	73.86	1.84%
NGL $/Bbl	28.43	7.66%	28.35	7.60%
Shrink	13.09		12.56	
Margin	15.35	21.65%	15.79	18.40%
Gas ($/mmBtu)	3.58	-5.14%	3.44	-3.46%
Gross Bbl Margin (in cents/gal)	34.36	22.42%	36.07	18.45%
NGL Value in $/mmBtu (Basket Value)				
Ethane	1.39	3.70%	1.52	5.90%
Propane	2.22	5.48%	2.26	4.94%
Normal Butane	1.18	25.79%	1.26	29.94%
Isobutane	0.69	9.63%	0.62	0.10%
Pentane+	1.51	0.57%	1.44	-0.03%
Total Barrel Value in $/mmbtu	7.00	7.31%	7.10	7.28%
Margin	3.42	24.43%	3.66	19.79%

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.

TOP STORIES

Five Arrested At Dakota Access Pipeline Site

Protests against the Dakota Access Pipeline flared briefly for the first time since the federal government ruled against the project last month, law enforcement said on Dec. 28, as five demonstrators were arrested and less-than-lethal rounds were fired by authorities.

The construction site of the $3.8 billion project had been the scene of fierce demonstrations by Native Americans and environmentalists for months. But in early December, the Army Corps of Engineers denied a key easement needed to allow the pipeline to run under Lake Oahe, a reservoir formed by a dam on the Missouri River.

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The Standing Rock Sioux Tribe, whose land is adjacent to the pipeline being built, asked protesters to disperse. On the afternoon of Dec. 27, five people were arrested for trespassing after crossing the Cannonball River onto Army Corps land, the Morton County Sheriff's Department said in a statement on Dec. 28.

Later in the evening, law enforcement said a group of about 100 protesters gathered on a bridge that was the site of previous demonstrations and police fired sponge rounds at people attempting to remove a "No Trespassing" sign.

—REUTERS

Analyst: Trump Can Push Projects

The 45th U.S. president will face constraints unfamiliar to a U.S. corporate CEO, but Donald Trump will still be able to exercise considerable leverage over energy infrastructure projects, particularly pipelines. Brandon Barnes, senior energy litigation analyst for Bloomberg Intelligence, thinks perhaps the most critical action Trump will be able to take when he is in office is exactly what he is doing right now—choosing appointees for key positions.

"I think he gets to exercise his most power on infrastructure, particularly pipelines, through the appointee process," Barnes said during a recent webinar hosted by Baird Equity Research. "From my perspective, [the Federal Energy Regulatory Commission (FERC) doesn't] really act as politically as we've seen other agencies acting, so there may be more opportunity in other appointees in other agencies to move the process along faster."

The Dakota Access Pipeline is an example of how a presidential appointee can change the process, Barnes said.

—JOSEPH MARKMAN, Hart Energy

Shell Midstream Acquires Interests In Three GoM Pipelines

Shell Midstream Partners LP acquired interests in three U.S. Gulf of Mexico (GoM) pipelines—10% interest in Proteus Oil Pipeline Co LLC, 10% interest in Endymion Oil Pipeline Co. LLC and 1% interest in Cleopatra Gas Gathering Co. LLC—from BP Plc (NYSE: BP).

Proteus is a 71-mile crude oil pipeline with a 425,000 barrel per day (Mbbl/d) capacity. The pipeline provides access to the Mississippi Canyon area of the GoM from Thunder Horse and Thunder Hawk to the Proteus SP 89E Platform. Noble Energy Inc.'s (NYSE: NBL) Big Bend and Dantzler fields are tied back to the Thunder Hawk Platform. Endymion is an 89-mile crude oil pipeline with a 425 Mbbl/d capacity.

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