MIDSTREAM Monitor

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FEATURES

The Efficiency Flow

JESSICA MORALES
HART ENERGY

Chris Akers, president and COO of **Eureka Midstream,** talked to Jessica Morales about how midstream operators, not just those in the upstream, are carving out efficiencies in the Marcellus-Utica region.

"By drilling multiple wells on a pad, they [producers] obviously get the efficiencies on the drilling and the fracking side, but we get the efficiencies by doing one large pipeline out of the pad vs. doing three pipelines to smaller pads," he said at Hart Energy's Marcellus-Utica Midstream conference in Pittsburgh in January. "The advantage it has is less risk on the environment—one pipeline vs. three. And it's much cheaper for us to do that on the pipeline side."

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Gas Exports Beat Imports For 1st Time Since '57

For the first time since the Frisbee made its debut and the U.S.S.R. launched Sputnik into orbit, U.S. exports of natural gas surpassed imports, the U.S. Energy Information Administration (EIA) **reported** this week. The achievement, 60 years in the making, precedes a swift ramp-up as a bevy of new facilities and LNG export terminals coming online will almost triple liquefaction capacity by the end of 2019.

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The expansion of U.S. export capacity will face a global market in flux as countries increasing their use of natural gas grapple with ways to obtain it. While the current structure relies on massive facilities and long-term contracts, the future LNG business model could be far more freewheeling, with a global fleet of LNG-laden carriers roaming the seas and pivoting toward regasification facilities in need of supply. In this scenario, long-term contracts would give way to spot market prices.

At least that is part of a future envisioned by Charif Souki, chairman of Tellurian Inc. (NASDAQ: **TELL**) and trailblazer of the U.S. LNG export business. But natural gas exports are not simply the result of demand, he said at the recent CERAWeek by IHS Markit conference in Houston. The supply side drives it as well, specifically the production of crude oil.

"You have people who are like legends in the business like **Mark Papa** [CEO of Centennial Resource Development Inc.] telling you that, for their oil production, the thing that scares them the most is, what are they going to do with the gas?" he said during a panel discussion on the evolution of global gas models.

Announcements from Chevron Corp. (NYSE: **CVX**) and ExxonMobil (NYSE: **XOM**) about expansions in crude production in the Permian Basin will also result in enough associated gas to match the entire capacity at Sabine Pass, La., the LNG export terminal of Souki's old company, Cheniere Energy Inc. (NYSE MKTS: **LNG**), he said. Either Permian producers find an export solution in the next five years, he said, or there will have to be a cap on oil production because gas cannot be flared off in the U.S. **—JOSEPH MARKMAN** | HART ENERGY

MIDSTREAM CONNECT

How Software Can Bind It All Together

This month, Eric Hazeldine of **Quorum Software** joined Midstream Connect to discuss the role of midstream software in the era of Big Data, robotic process automation and artificial intelligence.

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To track the myriad of activities covered by a midstream operator—from field operations to back-office accounting—industry software needs to be integrated to achieve, as Quorum puts it, a "single source of truth."

A case study of how the software works with customer American Midstream Partners LP can be found **here**.

—JESSICA MORALES | HART ENERGY

FRAC SPREAD

Crackers Lift Demand For Ethane

JOSEPH MARKMAN | HART ENERGY

The recent startup of Chevron Phillips Chemical Co. LP's facility in Baytown, Texas, is turning out to be what it was cracker-ed up to be.

Fresh demand sent ethane prices up 3.2% at the Mont Belvieu, Texas, hub last week to its highest point since the end of January, and 20.3% at Conway, Kan. The Mont Belvieu margin improved from 5.6 cents per gallon (gal) to almost 7 cents/gal.

CURRENT FRAC SPREAD (CENTS/GAL)

MARCH 23, 2018	Conway	Change from Start of Week	Mont Belvieu	Last Week
Ethane	13.78		24.72	
Shrink	16.68		17.80	
Margin	-2.90	-45.24%	6.92	23.24%
Propane	65.67		80.39	
Shrink	23.05		24.60	
Margin	42.62	11.98%	55.79	9.93%
Normal Butane	75.72		81.10	
Shrink	26.09		27.85	
Margin	49.63	15.19%	53.25	0.39%
Isobutane	88.68		89.60	
Shrink	25.06		26.74	
Margin	63.62	1.56%	62.86	-0.63%
Pentane+	136.68		143.69	
Shrink	27.90		29.78	
Margin	108.78	-1.37%	113.91	-1.48%
NGL $/Bbl	25.70	4.74%	29.78	1.32%
Shrink	9.19		9.81	
Margin	16.51	7.84%	19.97	3.54%
Gas ($/mmBtu)	2.52	-0.40%	2.69	-2.91%
Gross Bbl Margin (in cents/gal)	37.55	8.38%	46.42	4.11%
NGL Value in $/mmBtu (Basket Value)				
Ethane	0.76	20.35%	1.36	3.22%
Propane	2.28	7.30%	2.79	5.65%
Normal Butane	0.82	9.30%	0.88	-0.77%
Isobutane	0.55	1.00%	0.56	-1.32%
Pentane+	1.76	-1.17%	1.85	-1.78%
Total Barrel Value in $/mmbtu	6.17	5.79%	7.44	1.97%
Margin	3.65	10.51%	4.75	4.95%

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.

At peak, the energy-efficient Cedar Bayou cracker will boast a capacity of 1.5 million metric tons of ethylene per year. The new cracker will feed its two sister polyethylene units in Old Ocean, Texas, which launched in September 2017. The new plants jump-start what Chevron Phillips calls its "new era of growth" for its petrochemical business on the Gulf Coast.

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"The U.S. Gulf Coast petrochemicals project is the most transformational project in the history of our company," said Mark Lashier, president and CEO of Chevron Phillips Chemical, in a statement on March 12.

En*Vantage Inc. expects rising ethane demand as other crackers pick up, among them:

Singapore-based Indorama Corp.'s Lake Charles, La., ethane/propane cracker, with capacity of 370,000 tons per year was expected to start up soon; and

DowDuPont's light hydrocarbon 9 plant in Freeport, Texas, down for maintenance at the beginning of the month, is back online.

That means that ethane inventories should be trending downward as demand rises by 200,000 barrels per day between March and September, En*Vantage projects. The analysts forecast the price, which Hart Energy gauges at just under 25 cents/gal at Mont Belvieu this past week, to average around 30 cents/gal at mid-year and 35 cents/gal by the end of 2018.

THE INTERVIEW

David Schulte of CorEnergy Infrastructure Trust: Getting A REIT Right

Energy investment manager Tortoise Capital Advisors in 2012 set apart its Tortoise Capital Resources Corp. unit as a new firm, CorEnergy Infrastructure Trust Inc. It charged CorEnergy with an unusual mission: Acquire midstream assets and hold them in a real estate investment trust (REIT)—an unusual corporate structure in a sector where most public firms are either MLPs or conventional corporations, and where private-equity-backed operations are common. A REIT owns but cannot operate assets, and CorEnergy's assets are leased to upstream producers or midstream operators. CorEnergy's CEO took a few moments to visit with Midstream Business *to discuss why its concept has worked and why he feels midstream REITs have a bright future.*

MIDSTREAM Your background before CorEnergy was working with more conventional MLP structures. What led you to organize a midstream REIT?

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SCHULTE There were two things. First, I had a front row seat to witness the growth of the market, starting in 2001 as a board member of two MLPs, and then developing and overseeing several MLP funds. As an investment committee member at Tortoise Capital Advisors, I had direct experience providing capital to stable, contracted, low-risk energy midstream business models.

Second, my partners at CorEnergy and I recognized that there are limitations on the types of investors that are willing to put money into MLPs because of the partnership structure. We appreciated the attractive risk/return profile of midstream assets, but saw what we believed to be a more tax-efficient approach to ownership that would enable a broader investor universe to have access to energy infrastructure.

These two observations led to the formation of our [REIT] in 2012. **—PAUL HART** | HART ENERGY

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