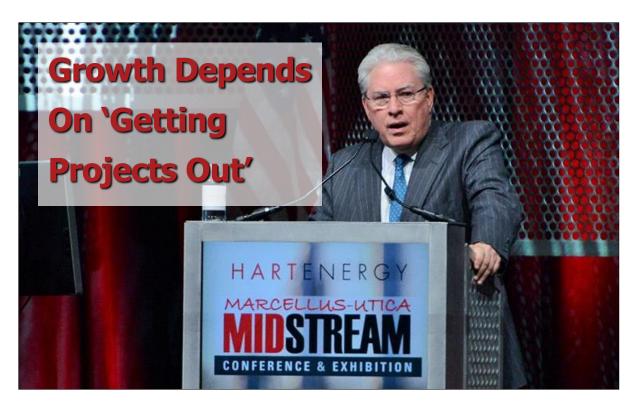
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MARCELLUS-UTICA MIDSTREAM CONFERENCE



LEN VERMILLION HART ENERGY

ITTSBURGH—The 2018 Marcellus-Utica Midstream Conference got underway Jan. 31 with opening keynote speaker Robert Phillips, chairman, president and CEO of Crestwood Equity Partners LP (NYSE: **CEQP**), declaring "2017 was a good year, 2018 is going to be a great year" for his company, which operates diversified midstream assets in active basins across the U.S., including a significant gathering operation in the Marcellus.

He also told an audience of about 1,000 that the Marcellus-Utica's unparalled natural gas resources have long-term growth potential not only for Crestwood, but also the entire industry. "In our view, it has an endless supply of gas for both the Northeast gas markets and the rest of the U.S."

Already, the Marcellus-Utica accounts for 35% of natural gas production in the U.S. at about 22 billion cubic feet per day (Bcf/d) to 25 Bcf/d. "It is the largest single source and a vital source to all the markets now," Phillips said.

But he cautioned that such long-term outlooks for the Marcellus-Utica—particularly beyond 2020—are dependent on several factors, not the least of which is the need for additional infrastructure.

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"Today there are approximately 17.5 Bcf/d of pipeline projects underway. Most of those were underwritten by producers," he said. "We believe most of those projects will largely fill up in the next three years. Therefore, we may be



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HEADLINES

right back here needing more projects to drive more supply development." Phillips said Northeast Pennsylvania growth forecasts are entirely contingent on takeaway

capacity. "We think it's dependent on how many projects we can get out," he said. We think Northeast Pennsylvania needs another 3 Bcf/d to 5 Bcf/d to realize its full potential."

Of course, building more takeaway capacity faces regulatory challenges. Phillips said Crestwood operates in several basins across the U.S. so he couldn't say that the regulatory environment was any more challenging in the Northeast U.S. than anywhere else, but admitted that regulatory difficulties in the Marcellus-Utica are significant and threaten future natural gas growth in the region.



Mighty Marcellus' Midstream Mambo



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There was plenty of talk about potential and regulations at this year's event. Keynote speaker Robert Phillips touted the tremendous potential of the region but cautioned long term growth may only go as far as the intense regulatory environment in the northeast U.S. will let it, saying, in short, we need infrastructure.

Meanwhile, EQTs Jerry Ashcroft revealed that the Mountain Valley Pipeline is nearly set to go tell the audience the company expects it to be up and running by December.

ExxonMobil plans to increase its shale oil production in the Permian Basin five-fold, the company said this week. It expects to produce 500,000 barrels per day by 2025.

FRAC SPREAD

At MUM, The Word Was Optimism

JOSEPH MARKMAN | HART ENERGY

Attendees at this week's Marcellus-Utica Midstream Conference in Pittsburgh probably wouldn't mind going back in time just to tell their 2016 selves, "It gets better."

The upbeat vibe in the David L. Lawrence Convention Center was reflected in the past week's 43-month high in the

CURRENT FRAC SPREAD (CENTS/GAL)				
FEBRUARY 2, 2018	Conway	Start of Week	Belvieu	Last Weel
Ethane	19.13		27.74	
Shrink	21.24		22.92	
Margin	-2.11	90.70%	4.82	-15.20%
Propane	80.35		84.09	
Shrink	29.35		31.67	
Margin	51.00	-14.93%	52.42	-13.32%
Normal Butane	93.25		90.29	
Shrink	33.23		35.85	
Margin	60.02	-10.37%	54.44	-14.61%
lsobutane	102.30		106.00	
Shrink	31.91		34.44	
Margin	70.39	-7.14%	71.56	-4.34%
Pentane+	137.42		143.74	
Shrink	35.53		38.34	
Margin	101.89	-0.01%	105.40	-0.48%
NGL \$/Bbl	29.65	-3.89%	31.61	-2.93%
Shrink	11.70		12.63	
Margin	17.95	-8.77%	18.98	-8.20%
Gas (\$/mmBtu)	3.20	4.71%	3.46	6.22%
Gross Bbl Margin (in cents/gal)	41.10	-9.52%	44.03	-8.70%
NGL Va	lue in \$/mmBtu	(Basket Value)		
1.04	1.05	-0.26%	1.53	1.76%
3.12	2.79	-8.67%	2.92	-6.87%
1.16	1.01	-5.52%	0.98	-7.39%
0.69	0.64	-3.74%	0.66	-1.15%
1.53	1.77	1.17%	1.85	1.23%
7.54	7.26	-4.36%	7.93	-3.08%
4.61	4.05	-10.48%	4.48	-9.22%

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. Mont Belvieu, Texas, ethane price. Looking ahead, though, domestic demand will not echo NGL production's upward tilt. And it's not just about ethane.

"The exports are growing, domestic demand is going down," said Bernadette Johnson, vice president of market intelligence for **Drillinginfo Inc.**, about her outlook for propane. "We're growing supplies, and what does that mean? That puts even more pressure on the export

piece and that's because exports are key for LPG."

Drillinginfo sees propane exports growing from 848,000 barrels per day (bbl/d) in 2018 to 1.155 million



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bbl/d in 2022. In that time, domestic use, which jumped from 350,000 bbl/d in 2017 to 457,000 bbl/d in 2018, will remain static at about 450,000 bbl in 2022.

Total supply will increase from 1.305 million bbl/d to 1.605 million bbl/d during that time, so export growth needs to kick in.

Same for butanes, she said. Exports are expected to double to almost 400,000 bbl/d in that time frame as domestic demand dips by 5.5%. Natural gasoline paints a similar picture: domestic trends down as exports trend up.

'Domino Effect' On Natural Gas Dynamics

The natural gas business is concerned—and rightly so—about impediments to new pipeline capacity serving New York and New England. But the surging output of the Marcellus and Utica basins has to go someplace and that has created a



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"domino effect" that's knocking over commodity prices across the continent, according to a BTU Analytics LLC specialist. New England is but one player in a rapidly change supply/demand game across North America.

Jake Fells, BTU Analytics senior analyst, discussed the impact of the big Appalachian plays Jan. 29 in a wide-ranging webcast titled "New Pipe Capacity and the Next Phase of Northeast Production." Baird Equity Research Energy sponsored the presentation.

"It's a really an interesting time to be looking into these markets with the production gains that we have seen and some of the big projects that are coming online, and having that happen with LNG demand and Mexican exports coming to fruition," Fells said. He added that "the Gulf will become the demand center for the United States" going into the next decade. The region

accounts for roughly one-fourth of total gas demand now but that share will rise to one-third by 2022.

He discussed the major new transmission lines coming out of Appalachia, including Energy Transfer's Rover Pipeline, Enbridge's TETCO-Access South and -Adair Southwest projects, Columbia's Leach XPress and Rayne XPress, and Algonquin's Atlantic Bridge. — PAUL HART | HART ENERGY

So Far, Price Isn't Right For Electric Cars

HOUSTON—The oncoming trends of an expanding electric vehicle fleet, emergence of renewable fuels and political



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moves toward elimination of internal combustion engine-powered cars could easily prompt a rather existential question from the oil and gas industry: Will we ever stop using fossil fuels? Short answer: no.

The answer to that question, which is the title of a 2016 *Journal of Economic Perspectives* paper by Thomas Covert and Michael Greenstone of the University of Chicago, and Christopher R. Knittel of the Massachusetts Institute of Technology (MIT), derives from both the reliable supply of fossil fuels as well as an unreliable pace of demand.

"Every year we seem to have 50 years' worth of oil and 50 years' worth of natural gas available to us," Knittel said on a panel at the recent "A Sector in transition: transportation in the

21st century," co-sponsored by MIT and Rice University's Baker Institute for Public Policy. "And we have 100 years of coal. So there's no evidence that we're going to run out of oil or natural gas or certainly coal any time soon."

But we might run out of demand, he said. — JOSEPH MARKMAN | HART ENERGY

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