

MIDSTREAM Monitor

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FEATURES

What's That Light Ahead For Ethane?

By **PAUL HART**, Hart Energy

There's light at the end of the long, dark ethane tunnel, according to a leading midstream consultant.

"But that can mean different things. It could mean better times ahead or it could mean an oncoming train," Peter Fasullo, principal at Houston-based EnVantage Inc. told a standing-room-only crowd April 12 at the 95th annual GPA Midstream Association convention.

Formerly known as the Gas Processors Association, the organization's annual meeting attracted nearly 2,000 midstream leaders for a wide-ranging review of business, regulatory and technical issues.

Ethane is unique among gas liquids because of its limited uses, Fasullo said. "It really has only one end use, and that is for ethylene production. The suppliers greatly outnumber the users."



Peter Fasullo, Principal,
EnVantage Inc.

The supply-demand balance for ethane has been in great oversupply since 2012, Fasullo said, due to the NGL-heavy production from the major unconventional shale plays. That has led to giveaway prices and large ethane-rejection volumes in which much of the ethane extracted from raw natural gas goes into the gas transmission system for consumption by gas users.

In response to the upturn in shale gas production, the midstream has added 26.5 billion cubic feet per day in gas processing capacity in the last four years, "and virtually all of that



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Webinar: Appalachian NGL— Monetizing the Opportunity



How much lower for how much longer will prices and margins impact the oil and gas industry? The lower price environment has industry executives searching for new opportunities. Could there be an opportunity for monetizing NGL production from the Appalachian Basin?

“In this lower for longer energy price environment, we have downgraded our NGL production forecasts. Yet, we expect U.S. demand growth and rising offshore exports to remain the key to balancing the U.S. market,” Greg Haas, director, integrated energy for Stratas Advisors, said.

With the U.S. exporting about 40% of its produced propane, the question becomes: Which NGL will follow suit and from which regions?

Haas will be joined by David J. Spigelmyer, president of the Marcellus Shale Coalition, to discuss Appalachian NGL opportunities in a webinar on **April 27** at 10 a.m. EST.

Participants will hear the two experts on North America's growing NGL markets and will learn:

- How much NGL is forecast to be produced in Appalachia?
- What takeaway options make sense now and in the future? Which new consumption opportunities will make it in today's lower price environment?

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has been deep-cut cryogenic capacity increasing the supply of ethane.”

Meanwhile, end users must take several years to build new cracking capacity that makes use of that surging supply, he noted. That, in time, will be a sizeable market.

In addition to new domestic cracking capacity, Fasullo pointed out there are growing export markets for ethane as cracking plants switch from more expensive naphtha feedstocks. But building the necessary infrastructure to transport and store the gas liquid, and refitting existing plants, takes time.

So what lies ahead? It's hard to say, Fasullo noted, repeating his light at the end of the tunnel example.

Significant new cracking capacity will start coming onstream in late 2017 and 2018, right about the time that ethane production, unfortunately, drops off thanks to the current decline in drilling.

Because of that drilling slowdown, the midstream buildout also is slowing and much of the potential new ethane production lies far from the ethane cracking plants concentrated along the Gulf Coast.

“It is no longer a supply-push story,” Fasullo said, adding that ethane production will peak in 2017 and decline through 2020.

“A shortfall in U.S. ethane supplies is probable in the 2018 to 2020 period,” he continued. “U.S. and foreign petchems have taken it for granted that ethane will remain oversupplied and cheap but that may not be the case.”

Fasullo emphasized that “the supply-push needs to fully transform to a demand-pull” to balance the market. Given the questions about supply and demand in the next four to five years, there will be winners and losers in the midstream as the ethane issue sorts itself out, he said.

“The integrated midstream players who can take ethane from the field to the end market will benefit the most,” he predicted.

GPA Midstream Association: New Name, Bigger Role

By **PAUL HART**, Hart Energy

The midstream's importance in the energy industry has grown and the organization that has served it for nearly 100 years has a new name. The Gas Processors Association unveiled its new title—GPA Midstream Association—at its 95th annual convention in New Orleans.



“I don’t care if your business is one year old or nearly 100 years like ours, the name change process is neither easy nor fun, but it was necessary for us,” Mark Sutton, president and CEO of the association, told *Midstream Business*. “Plain and simple, we’re no longer made up only of gas processors and, in reality, that’s been the case for several years now. Our membership today represents every aspect of the midstream industry and it’s time that we make that claim.”

The change took nearly a year to complete, 2015 Chairman John Mollenkopf, executive vice president and COO of MarkWest Energy Partners LP, told the convention’s general session.

“My only task of both the executive and finance committee and board was for each to remain totally open-minded and patient all the way through the name change presentations in order to see the full logic behind the recommendation they were about to get, and they did. Everyone appreciated the equity in the GPA name and all understood that ‘midstream’ is who we’ve become. The name GPA Midstream simply says best who we are,” Mollenkopf told the audience of nearly 2,000 sector leaders.

After considering multiple suggestions, the board voted unanimously for GPA Midstream earlier this year, he added. *Midstream Business* is the official publication of the association.

The process included a look at several trade association names relating to the energy sector, along with some from other industries, according to Crystal Myers, communications director for the Tulsa, Okla.-based organization. It also contained online search results for key words relevant to the name change initiative, noting especially trade association and/or energy company names that appeared most frequently in the top-tier results among all search entries.

A basic consideration was how to incorporate the familiar “GPA” into the new name, given that the organization is well known in the industry, and that it has become more visible in Washington, D.C., and in energy-state capitals through heightened advocacy efforts in recent years.

“Our association has made great strides in being a respected authority in legislative and regulatory arenas in dealing with everything midstream,” said Sutton. “Government and environmental groups know us as GPA, and GPA Midstream keeps that identity plus bolsters our position as the experts on midstream issues even more.” Mollenkopf told the general session GPA Midstream Association will have no acronym. After the first full-name reference is made, the association’s style on subsequent uses is “GPA Midstream” as appropriate.

INGAA: No Middle Ground On Midstream Development

By **FRANK NIETO**, Hart Energy

The topsy-turvy nature of the oil and gas prices over the past two years caused the INGAA Foundation to update its midstream infrastructure development forecast through 2035 to reflect the new market dynamics and austerity from both producers and midstream operators. The most telling aspect of this new report, which was prepared by ICF International, is that it doesn't include a base case scenario, instead only including an optimistic high case and a less optimistic low case.



“The scale of uncertainty that currently exists in energy markets is more pronounced than it has been in quite some time, making it difficult if not impossible to develop a single ‘base case’ scenario to represent oil and gas supply development and market growth and the associated infrastructure needs,” the report said. While prices are forecast by INGAA to improve in both scenarios, excessive supply levels will limit the improvements. Consequently, the updated report anticipates much lower prices than previously forecast by the association in 2014.

INGAA now anticipates crude prices to improve to an average of \$75 per barrel (bbl) on a long-term basis, down from an average of \$100/bbl on a long-term basis in the previous report. Though the recovery difference between the scenarios is much different, both cases anticipate that prices will improve as Asian economies, specifically China's, improve and U.S. supply growth slows.

The difference between both pricing scenarios is the amount of time it would take to achieve this average price level. The high case anticipates it would begin by 2025 while the low case anticipates it would occur by 2030. In addition, the low case anticipates prices would remain below \$40/bbl until 2018.

“The environment that underlies the high case is a more rapid resumption of economic activity, reflected by increased GDP growth assumed in the case. Thus, the global supply overhang dissipates more quickly in the high case while conversely, economic activity recovers much more slowly in the low case, reflected in the case's reduced GDP growth. Consequently, the global supply overhang is more pronounced and prolonged in the low case. The ramifications of the oil price trend assumed in the low case are that the supply development and market growth that underpin infrastructure development are delayed and less pronounced when compared with corresponding growth in the high case,” the report said.

Reduced crude prices are also expected to have a major impact on NGL prices and production levels. The INGAA forecast has been revised to reflect a market awash in production. More production is expected to be driven by gas production growth in both cases. The report forecasts an average of between 12.9 MMbbl/d and 13.5 MMbbl/d in the high case scenario and 10.7 MMbbl/d by 2035 in the low case scenario.

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There is also a marked difference between the high and low cases for natural gas prices in the forecast with the key difference being when export demand will increase from overseas via LNG and to Mexico via pipeline. Long-term prices are lower than previously forecast because of the reduction in well completion costs that will increase production from previously forecast levels.

It is projected that Henry Hub prices will trade between \$4 and \$5.50 per million British thermal units (MMBtu) after 2020 in the high case scenario with this demand increasing fairly quickly. However, gas-fired power generation would grow at a slower pace due to reduced economic activity in the low case scenario. In this case INGAA's forecast is 15% lower at \$3.50/MMBtu and \$4.50/MMBtu than the high case scenario.

The expected production decline for crude, liquids and gas will result in less midstream infrastructure development in the coming years than had been originally forecast two years ago. However, significant natural gas pipeline construction is still taking place this year and is scheduled to continue for the next few years because many projects have obtained regulatory approvals.

INGAA anticipates the need for between 45 Bcf/d and 58 Bcf/d of incremental natural gas takeaway capacity in the U.S. and Canada between 2015 and 2035; the bulk of this capacity is needed in the Northeast, Southwest and Canada. This translates to between 7,100 miles and 8,500 miles of new gathering pipeline construction.

Additional NGL takeaway capacity will need to increase between 1.1 MMbbl/d and 2.3 MMbbl/d between 2015 and 2035; the majority of this capacity will be added in the Midwest, Northeast and Southwest before 2020. However, this estimate is lower than the NGL takeaway capacity added in North America between 2010 and 2014-- 5.4 MMbbl/d --on a system set to handle the bulk of upcoming transportation demand.

The association forecasts that natural gas takeaway capacity demand out of the Appalachian Basin will increase to nearly 20 Bcf/d by 2035 with flows to New York, New Jersey, New England and the Midwest largely driving demand. The Northeast and New England will likely experience a 50% increase in demand to nearly 14 Bcf/d in 2035, while the Midwest demand is expected to more than triple to 5.6 Bcf/d by 2035. The difference between the report's high and low case scenarios are close, because as the Marcellus and Utica shales are expected to lead the way for domestic gas production for decades to come.

The dominance of the Marcellus and Utica is expected to negatively impact gas production out of the Southwest flowing east across Texas and into Louisiana because gas-on-gas competition favors the Appalachian production. The high case forecast anticipates these flows to decrease from 10 Bcf/d to nearly 6 Bcf/d, which will reduce northbound flows on the Tennessee Gas Pipeline, Transcontinental Pipeline, Texas Eastern Transmission and Columbia Gulf systems.

Historically, a great deal of Southwest production has flowed to the North, but the development of the Marcellus and Utica is changing this pattern with many pipeline systems reversing course to move production from the North to the Mont Belvieu, Texas, fractionation and processing hub. Consequently, more production from the Permian, Eagle Ford and Barnett will be staying the region to be exported to Mexico or foreign shores as LNG.

Emissions Rule Spurs Technological Innovations

By **JOSEPH MARKMAN**, Hart Energy

A number of effective strategies exist to enable compliance with the U.S. Environmental Protection Agency's (EPA's) Quad O rule to limit emissions of methane and volatile organic compounds (VOCs). Hoping that the regulations just go away is not one of them.

The Colorado Oil and Gas Association made its case to EPA Administrator Gina McCarthy last December, contending that “the proposed requirements are duplicative and unnecessary in states like Colorado that have established, and are enforcing, aggressive VOC control regimes.”



John Kneiss, Washington-based director for Stratas Advisors who tracks energy policy, is unaware of any delays in the implementation of emission control regulations. He told Hart Energy that he believes the Obama administration is intent on completing these rules before its term ends.

Transformative technology may provide the answer for upstream and midstream operators. Heat waste and energy recovery is not a new concept, and a number of products manufactured by GE Oil & Gas, Dresser-Rand Group Inc. and Dow Oil, Gas and Mining, among others, are on the market.

A new product, now being tested in the Utica Shale and the Eagle Ford Shale, features a solid-state generator that promises to destroy emissions while providing electricity for remote oil and gas sites.

“We had a number of customers who said, ‘we’re generating electricity from waste heat (after deployment of Alphabet Energy’s E1 product), which we really like, but we obviously have a lot of waste heat in the corner over there where we’ve got that flare burning, where we’ve got that combustor sitting,’” Mothusi Pahl, vice president of marketing and head of business development for Hayward, Calif.-based Alphabet Energy Inc., told Hart Energy. “‘Why can’t I do something with the flare?’”

The result is called the Power Generating Combustor (PGC), a device that resembles a metal smoke stack with a top hat over it. Gas destined for combustion enters at the bottom of the combustor and is exposed to intense heat—up to 2,200 degrees Fahrenheit—in a process that destroys over 99% of the vapors. The hot exhaust is routed through Alphabet Energy’s PowerModules, where the thermoelectric material activates, leading to power generation.

The pressing issues of emissions regulations and access to affordable electricity in the field are simultaneously addressed in a single device. Alphabet Energy and partner Coyote North Ltd. sees opportunity wherever gaining control over flaring is a need, though for now it is focused on companies operating in Ohio and south Texas.

“Producers have to watch the emissions that they’re emitting and have to either destroy them through combustion technology such as ours or recovery,” Brent Willey, president of Grande Prairie, Alberta-based Coyote North. “It’s come to the forefront in Canada, with regulations changing and big rumors in Canada of

carbon taxation. Even in California, when you look at how strict the emissions are there. Being able to provide a product such as ours that meets the regulations that will destroy vapors is actually changing the landscape.”

The PGC system saves users on capex because they only need to invest in one piece of equipment, instead of purchasing both a generator and a combustor. It saves in operational expenses by avoiding the fuel cost of a reciprocating engine, either diesel that must be trucked in or natural gas produced in the field that could be producing revenue in the market.

While Pahl said he sympathized with operators who are unhappy with the emissions regulations, he pointed out that even without Quad O, operators don’t want to vent gas on site.

“Nobody wants to do that because you get flash fires and explosions and you’re putting your people at risk,” he said. “But there is still going to be some combustion happening on site to destroy either that stranded gas or to burn off those waste products, so the heat source is going to be there, whether or not that Quad O enforcement is in place. Now, there’s an opportunity to use this heat source to generate power and make the flare useful.”

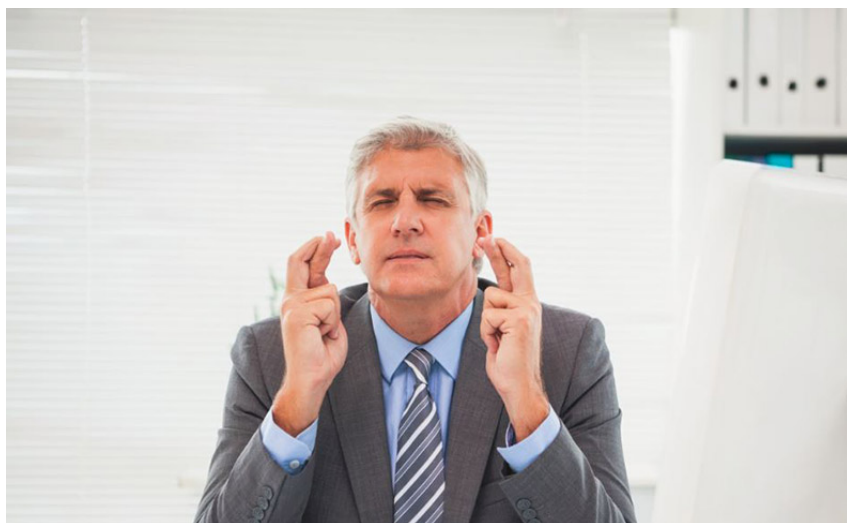
FRAC SPREAD

Frac Spread: Optimism Increases As Prices Rebound

By **FRANK NIETO**, Hart Energy

There was more evidence of a floor having been set in the NGL market as prices rebounded from the losses experienced last week. This was despite being in the midst of the spring shoulder season when demand is among its lowest levels for the year.

The theoretical NGL barrel (bbl) gained 7% in value at the Conway, KS, hub as it rose to \$17.82/bbl with a 14% gain in margin to \$11.61/bbl while the Mont Belvieu, Texas, price improved by 2% to \$18.38/bbl with a 7% gain in margin to \$11.80/bbl.



The improved margins reflect the improvement in NGL prices along with natural gas prices dropping 5% in value at both hubs as power generation demand is flat without meaningful heating or cooling demand until the summer arrives.

Heavy NGL prices also benefited from improved West Texas Intermediate (WTI) crude prices, which rose back above \$40/bbl on reports from the U.S. Energy Information Administration (EIA) that U.S. inventories declined

CURRENT FRAC SPREAD (CENTS/GAL)				
APRIL 15, 2016	Conway	Change from Start of Week	Mont Belvieu	Last Week
Ethane	14.70		17.99	
Shrink	11.27		11.93	
Margin	3.43	100.00%	6.06	27.95%
Propane	40.78		44.04	
Shrink	15.57		16.49	
Margin	25.21	11.46%	27.55	6.07%
Normal Butane	51.16		53.58	
Shrink	17.63		18.67	
Margin	33.53	14.98%	34.91	10.15%
Isobutane	63.20		55.60	
Shrink	16.93		17.93	
Margin	46.27	15.58%	37.67	8.08%
Pentane+	91.06		89.44	
Shrink	18.85		19.96	
Margin	72.21	6.63%	69.48	2.67%
NGL \$/Bbl	17.82	6.88%	18.38	2.17%
Shrink	6.21		6.58	
Margin	11.61	14.16%	11.80	6.84%
Gas (\$/mmBtu)	1.70	-4.49%	1.80	-5.26%
Gross Bbl Margin (in cents/gal)	26.22	14.48%	27.15	7.01%
NGL Value in \$/mmBtu (Basket Value)				
Ethane	0.81	17.04%	0.99	3.81%
Propane	1.42	4.78%	1.53	1.52%
Normal Butane	0.55	7.43%	0.58	4.24%
Isobutane	0.39	9.42%	0.35	3.38%
Pentane+	1.17	4.12%	1.15	0.79%
Total Barrel Value in \$/mmbtu	4.35	7.44%	4.60	2.30%
Margin	2.65	16.82%	2.80	7.83%

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 NGPL Midcontinent zone, Mont Belvieu based on Houston Ship Channel.

NGL PRICES						
Mont Belvieu	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
April 6 - 12, '16	17.99	44.04	53.58	55.60	89.44	\$18.38
March 30 - April 5, '16	17.33	43.38	51.40	53.78	88.74	\$17.99
March 23 - 29, '16	18.78	44.38	52.50	54.38	90.83	\$18.55
March 16 - 22, '16	18.22	46.12	54.26	56.08	90.04	\$18.75
March '16	17.68	45.26	53.27	55.05	86.68	\$18.26
February '16	14.83	37.42	53.83	53.80	69.04	\$15.68
1st Qtr '16	15.90	39.03	52.22	52.84	76.84	\$16.46
4th Qtr '15	17.50	42.15	60.09	60.57	97.59	\$19.11
3rd Qtr '15	18.26	40.99	54.16	55.19	100.10	\$18.80
2nd Qtr '15	17.93	46.30	58.11	59.66	126.14	\$21.48
April 8 - 14, '15	16.40	53.08	62.42	64.60	119.88	\$21.98
Conway, Group 140	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
April 6 - 12, '16	14.70	40.78	51.16	63.20	91.06	\$17.82
March 30 - April 5, '16	12.56	38.92	47.62	57.76	87.46	\$16.67
March 23 - 29, '16	12.75	39.75	48.20	56.33	87.50	\$16.80
March 16 - 22, '16	13.95	41.52	49.72	57.90	89.00	\$17.43
March '16	13.18	40.87	49.35	57.65	85.03	\$16.93
February '16	13.09	33.72	48.44	60.06	69.16	\$15.00
1st Qtr '16	13.45	35.23	48.14	57.05	76.01	\$15.61
4th Qtr '15	14.90	38.06	57.31	64.04	95.84	\$18.20
3rd Qtr '15	15.47	36.28	48.59	54.34	99.10	\$17.59
2nd Qtr '15	15.50	40.55	52.40	56.80	121.50	\$19.89
April 8 - 14, '15	14.98	47.54	58.52	63.48	115.00	\$20.69

by 4.4 million bbl. In addition, Iranian production has been slower to return to the market than previously expected. Production from non-OPEC countries has been falling while demand has been slowly increasing with more attractive prices. There are still many headwinds facing the global crude market, but it appears it is slowly improving with forecasted prices in the mid- to low \$40/bbl range.

Ethane prices posted strong gains for the week even as ethane cracking capacity is diminishing with cracker turnarounds. Mont Belvieu ethane rose 4% to 18 cents per gallon (/gal) while the Conway price rose 17% to 15 cents/gal. The improvements were partially attributed to improved propane and butane prices, which are making ethane the preferred NGL for ethylene cracking. Ethane demand is expected to further increase once the cracker turnarounds are completed later this year and as export capacity increases out of Marcus Hook and Morgan's Point.

Demand for LPG exports is slowing, which has resulted in greater-than-expected propane

inventory increase for two straight weeks. However, prices continued to improve due to the stronger ethane price, which is creating a higher floor price for propane. The Conway price rose 5% to 41 cents/gal, its highest level in a month, while the Mont Belvieu price improved 2% to 44 cents/gal.

The most profitable NGLs to make remain at the heavy end of the bbl with C5+ leading the way at 72 cents/gal at Conway and 70 cents/gal at Mont Belvieu. This was followed, in order, by isobutane at 46 cents/gal at Conway and 38 cents/gal at Mont Belvieu; butane at 34 cents/gal at Conway and 35 cents/gal at Mont Belvieu; propane at 25 cents/gal at Conway and 28 cents/gal at Mont Belvieu; and ethane at 3 cents/gal at Conway and 6 cents/gal at Mont Belvieu.

The EIA reported that natural gas storage levels decreased by 3 Bcf to 2.477 trillion cubic feet (Tcf) the week of April 8 from 2.48 Tcf the previous week. This was 63% higher than the 1.521 Tcf posted last year at the same time and 52% greater than the five-year average of 1.628 Tcf. There should be an uptick in cooling demand in the next week as the National Weather Service is forecasting warmer-than-normal temperatures throughout the U.S.

RESIN PRICES – MARKET UPDATE – APRIL 15, 2016					
TOTAL OFFERS: 14,213,012 lbs		SPOT		CONTRACT	
Resin	Total lbs	Low	High	Bid	Offer
HDPE - Inj	3,218,716	0.54	0.56	0.505	0.545
LLDPE - Film	2,365,772	0.55	0.63	0.52	0.56
LDPE - Film	2,208,232	0.575	0.66	0.57	0.61
HDPE - Blow Mold	1,979,956	0.545	0.56	0.5	0.54
PP Copolymer - Inj	1,640,828	0.58	0.65	0.58	0.62
LDPE - Inj	814,736	0.535	0.63	0.58	0.62
PP Homopolymer - Inj	708,196	0.54	0.63	0.56	0.6
LLDPE - Inj	659,288	0.62	0.63	0.57	0.61
HMWPE - Film	617,288	0.55	0.56	0.51	0.55

Source: Plastics Exchange – www.theplasticsexchange.com

MORE TOP STORIES

Marathon Bucks Wyoming, Piceance In Deal Worth Nearly \$1 Billion

By **DARREN BARBEE**, Hart Energy

Houston's Marathon Oil Corp. said April 11 that it agreed to divest nearly \$1 billion in assets with most of the value tied to a withdrawal from its Wyoming upstream and midstream operations.

Marathon's Wyoming assets, which include the 570-mile Red Butte pipeline, will be sold for \$870 million, excluding closing costs. The Red Butte is the only export line in the area. The company's waterflood developments in the state included developments in the Big Horn and Wind River basins, where it averaged 16,500 barrels of oil equivalent per day (boe/d) in first-quarter 2016.



The effective date of the transaction is Jan. 1, with the company saying it expects to close by mid-year 2016. In all, Marathon sold about \$950 million in assets.

In separate transactions totaling \$80 million, Marathon signed agreements for the sale of:

- 10% working interest in the Shenandoah discovery in the Gulf of Mexico;
- Operated natural gas assets in Colorado's Piceance Basin; and
- Undeveloped acreage in West Texas.

As of March, the company had reported divestitures of \$300 million in 2016 as part of its portfolio management. The company did not appear to have significant funds allocated to Wyoming or Colorado. About 69% of its \$1.4 billion capex is devoted to the Eagle Ford, Scoop/Stack and Bakken.

"Since August 2015, we have now announced or closed noncore asset sales of approximately \$1.3 billion, surpassing our targeted range of \$750 million to \$1 billion," said Lee Tillman, president and CEO. "Ongoing portfolio management continues to drive the simplification and concentration of our portfolio to lower risk, higher return U.S. resource plays and support our 2016 objective of balance sheet protection."

Marathon Oil held net proved reserves at the end of 2015 of 2.2 Bboe in North America, Europe and Africa. The company said in March it expects 2016 production to decline by up to 8% after adjusting for divestitures. The company reported pro form a year-end 2015 liquidity of \$5.7 billion.

ExxonMobil Exports First GoM Crude Cargo From Julia Field

ExxonMobil Corp. is shipping a cargo of crude produced from its deepwater Julia Field in the Gulf of Mexico to its refinery in Rotterdam, Netherlands, marking the first export of offshore oil to leave a U.S. port since a ban was lifted.

The crude came from initial well tests conducted on the Julia project, Aaron Stryk, a company spokesman, said in an emailed statement on April 14.

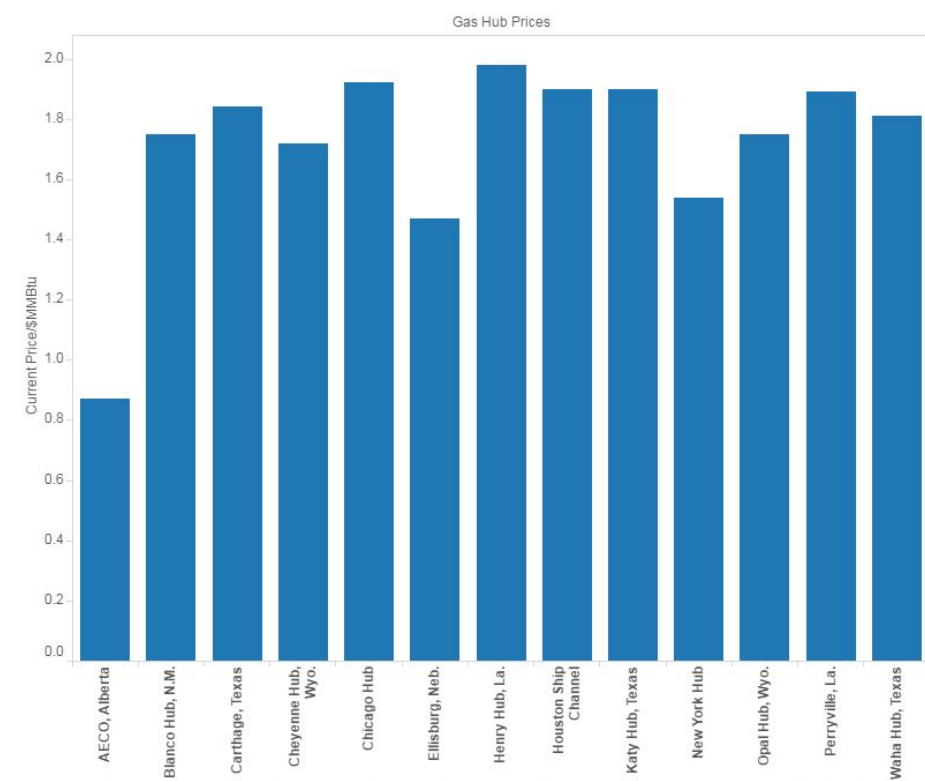
The oil company is sending a modest 18,000 barrels of oil on a Panamax tanker, the *PGC Marina*, according to a bill of lading published at Bloomberg terminals and Thomson Reuters vessel tracking data. Refiners typically do tests to see how new crudes will impact yields from making fuels.

While only a small volume, the cargo is the first known export of offshore oil from the U.S. since Congress lifted a ban last December. Until now, all other shipments had been of light onshore oil.

The vessel departed from Gramercy, La., in early April and is expected to arrive in Rotterdam on April 19, according to the data.

It was not clear whether Exxon would continue to export Julia crude, but the firm anticipates an initial production of 34,000 barrels per day following the startup of the field in the second quarter of this year, according to its website.

--REUTERS



Key North American Gas Hub Prices

(As of April 14, 2016)

Keep up to date on daily changes in North American gas hub prices at MidstreamBusiness.com

Carthage, Texas: 1.84
 Katy Hub, Texas: 1.90
 Waha Hub, Texas: 1.81
 Henry Hub, La.: 1.98
 Perryville, La.: 1.89
 Houston Ship Channel: 1.90
 Opal Hub, Wyo.: 1.75
 Blanco Hub, N.M.: 1.75
 Cheyenne Hub: 1.72
 Ellisburg Neb. Hub: 1.47
 New York Hub: 1.54
 AECO, Alberta: 0.87

New Markets Could Use Surplus LNG, Global Producers Say



The world's top producers of LNG are investing in ship-fueling operations, floating import terminals and power plants to open new markets and keep from drowning in a fuel surplus expected to last into the next decade.

Companies such as Royal Dutch Shell, Total and Malaysia's Petroliaam Nasional Bhd are scrambling to create demand as cheap coal and cleaner wind and solar power threaten to curb growth in the 250 mtpa LNG market.

LNG suppliers have been put in a tough spot as demand from the world's top importers of the past few decades, Japan and South Korea, has declined due to slowing economies, more efficient use of power and switches to coal and renewables.

Using LNG, employed now mostly in power generation, as a fuel for transport is one of the industry's biggest hopes.

"If we can secure only 10% of the heavy transport market, you're talking about 70 mtpa extra demand. That's almost as much as Japan," Shell's integrated gas director, Maarten Wetselaar, told reporters at the LNG 18 conference in Perth, Australia, this week.

Shell recently signed a deal to supply LNG to Carnival Corp., the world's biggest cruise operator, and sees huge potential to fuel ships, trucks and buses, which it says use the equivalent of 700 million tonnes of LNG a year in oil products.

Australia's Woodside Petroleum also took a small step this week to grow LNG demand in transport, buying an LNG-fueled supply vessel that could be a seed for developing LNG as a shipping fuel in Australia. Woodside is also eyeing road transport markets, such as for trucking.

It was against the backdrop of a vast surplus, stalled demand and weak prices that Woodside scrapped its plans for the \$30 billion Browse floating liquefaction plant off Western Australia.

LNG imports by Japan and South Korea fell last year by 7 million tonnes, offsetting growth in the rest of Asia and leading to the region's first annual drop in demand since 2009, the International Gas Union (IGU) said.

--REUTERS

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