HARTENERGY

MIDSTREAM Monitor

VOLUME 9 / ISSUE 34 / APRIL 22, 2011 *Formerly* GAS PROCESSORS REPORT

In This Week's Edition

FEATURE

Ortloff Engineers, SME Products Introduce 'Gas Plant In A Bottle'

The first *Gas Plant in a Bottle*™ (GPB™) is scheduled to be installed in south Texas later this year. Developed by Ortloff Engineers Ltd. and SME Products, L.P. to reduce the cost, emissions and plot space necessary for gas processing plants, this new process and equipment design is able to place nearly all of the processing equipment in a typical cryogenic gas plant inside a single vertical tower.

GPB utilizes integrated heat and mass transfer (HMT) modules within one processing assembly. This assembly includes the piping, equipment and reboilers and is then connected to an adjoining turbo-expander assembly.

The companies said that the HMT module also helps to improve fractionation since it is incorporated into the stripping section of the fractionation column. This provides external heat input across the entire stripping section to generate stripping vapors which promotes mass transfer contact within the module.

(continued on page 3)

INSIDE LOOK AT PROCESSING

Marcellus Producers' Best Choice For Ethane May Be Gulf Coast

Ethane supplies are expected to overwhelm the market as development in the Marcellus shale and other liquids-rich plays continues to grow. The biggest issue associated with this possible situation would be the ability of the U.S. petrochemical industry to absorb the added volumes.

The United States and Canada have a total of 42 ethylene plants with a capacity of 68.9 billion pounds per year with the majority of the capacity located in the Gulf Coast and Alberta, Canada. There is also a sizable portion of capacity located in Sarnia, Ontario, Canada, which is one of the reasons why there are several proposed projects to transport Marcellus ethane to the Gulf Coast and Sarnia.

According to En*Vantage Inc.'s Peter Fasullo, the U.S. ethylene industry has been increasing its capability to crack ethane since 2008.

"Ethane cracking capacity has been enhanced by more than 100,000 barrels per day (b/d) without increasing ethylene capacity." This has been done by converting furnaces in the Gulf Coast to crack ethane instead of heavy feedstocks.

The U.S. has 992,000 b/d in ethane cracking capacity with an additional 283,000 b/d in capacity from Canada. This figure should increase by 100,000 b/d by 2012-2014 and bring the U.S. capacity to 1.1 million b/d, while not counting Chevron Phillips' proposed ethylene plant in the Gulf Coast.

"U.S. NGL (natural gas liquid) markets are extremely elastic and are responding to additional NGL supplies," Fasullo said while speaking at the recent Gas Processors Association (GPA) Convention in San Antonio, Texas.

(continued on page 4)

Marcellus Midstream 2011: An Operator's Perspective On Storage

Storage is a keystone in the Keystone State's fast-developing Marcellus shale-gas play. At a recent Marcellus Midstream conference held in Pittsburgh, John Shelton, director of storage for NiSource Gas Transmission & Storage, discussed the company's experiences to date in solving storage issues, and looked at the opportunities presented by the wide-spread Marcellus. He termed this a "balancing act."

NGT&S' assets have annual deliveries of 1.4 trillion cubic feet over 15,500 miles of pipeline, with operations in 16 states. It owns 37 storage fields with total capacity of 640 billion cubic feet and daily delivery of 4.7 billion. The horsepower in its 106 compressor stations totals 1.1 million.

Shelton noted that the company's local storage—comprising 16 billion cubic feet—is in the heart of activity in the Marcellus. There is flow-path flexibility available as production has shifted upward from 50 million cubic feet per day in 2007 to 450 million projected for 2011.

Its Adaline station-Victory A&B storage facilities help address the fact that market-area storage is now a hybrid—both a market and a supply opportunity. There are peak demands for the nearby Pittsburgh market area, and winter turnover is critical for summer reservoir capacity, he noted. Further, supply-area storage is an important "market" for summer take-away, he said.

As production ratchets up, NGT&S has been busy with recent storage development. Its Hardy storage facility, a greenfield JV with Piedmont, has capacity of 12 billion cubic feet, and delivers 170 million cubic feet per day. Started up in April 2007, it was fully utilized two years later.

The company's Eastern Market Expansion, put into service in April 2009, can store 5.7 billion cubic feet per day. Loop and compression have been added to that facility.

The Ohio Storage Expansion holds 6.8 billion cubic feet per day with deliverability of 100 million per day. It was also placed into service in 2009. And, the Artemas storage presents an additional area of growth, with a seismic shoot being evaluated in anticipation of further expansion of existing facilities.

The balancing role that storage will play in the Marcellus will be driven by continued use by large end users such as LDCs and industrials, Shelton noted. Further, new power generation will come into the picture, with new markets and services. "Flexibility in pipeline and storage design is key," said Shelton, and success rests upon subtle responses in size, timing, structure and complementary assets.

With only a limited number of geological structures suited for storage development in the region, the hybrid market/supply storage approach best fits shale production, he said. – Susan Klann

Copano Energy To Build New Processing Plant In Eagle Ford

Copano Energy announced it will expand its processing capacity in the Eagle Ford shale by adding a new 400 million cubic feet per day (MMcf/d) cryogenic natural gas processing plant at its Houston Central complex.

"We are pleased to be moving forward with the next phase in our Eagle Ford shale development strategy and expect that our existing infrastructure at Houston Central will enable us to expedite bringing this additional capacity to market," says R. Bruce Northcutt, president and chief executive of Copano Energy. "This new state-of-the-art cryogenic processing plant will improve efficiencies at Houston Central, allowing us and our producers to benefit from much higher NGL recoveries for many years to come."

This $145-million plant will increase the total capacity at the complex to 1.1 billion cubic feet per day (Bcf/d) when it is put into service in early 2013. This would coincide with the development of a new 20-mile, 20-inch pipeline that will deliver more than 400 MMcf/d of gas to Formosa Hydrocarbons Co.

The pipeline is part of a 50/50 joint venture between Copano and Kinder Morgan Energy Partners LP called Eagle Ford Gathering LLC. In January, the JV reached a long-term agreement with Formosa for additional processing and fractionation.

The bulk of the agreements announced from the JV have centered on transportation of natural gas. In February, the JV announced the execution of a definitive long-term agreement to provide significant natural gas gathering, transportation, processing and fractionation services to Anadarko E&P Co. LP in the Eagle Ford shale resource play.

Previously, Eagle Ford Gathering announced a 30-inch pipeline in the western Eagle Ford shale play that is under construction and is expected to begin service in the third quarter of 2011.

The addition of this processing plant will make two processing complexes with more than 1 Bcf/d in the Eagle Ford. DCP Midstream currently has

five processing plants in the play and is adding a sixth plant in Edna, Texas, for $475 million that will push its capacity past 1 Bcf/d.

While Copano Energy will have this capacity together in one complex, DCP Midstream plans on plumbing all six of its plants together to create a "super system" in the region.

"This will give us operational flexibility and access to multiple markets going in different directions," Rick Cargile, president of the company's southern business unit, told *Midstream Monitor* (formerly *Gas Processors Report*) earlier this year. "We have infrastructure up and down the condensate window of the play so this beefs up our capabilities and capacities in the play." – Frank Nieto

Ortloff Engineers, SME Products Introduce 'Gas Plant In A Bottle'... *(continued from page 1)*

"Among the advantages of this process are lower plant cost, less plot space, less piping, reduced pressure drop with resulting lower compression power, fewer flanged connections reducing the potential sources of leaks and atmospheric emissions, fewer foundations meaning less civil work, and shorter construction schedules," according to the companies.

Company officials said that while the GPB process takes up less space by either changing the location of equipment, or eliminating some equipment that is found in a typical cryogenic processing plant, the process flow paths in both plants are essentially the same. "The key equipment for both plants are the gas/gas heat exchanger, cold separator, turbo-expander, recompressor, demethanizer fractionation column, subcooler, and demethanizer reboilers. For the GPB™ an HMT module replaces the traditional reboilers, thermosiphon piping, and mass transfer stripping section," Andrew Johnke of SME Products said. The HMT module helps to more evenly distribute the heat input across the entire stripping section, further improving the fractionation efficiency compared to traditional reboilers.

In the GPB process, the heat exchange equipment can be located within the pressurized vessel assembly above and below the demethanizer absorber section rather than at grade-level in typical processes. One portion of the inlet feed flows to the feed pass of the gas/gas exchanger near the top of the processing assembly, and the other flows through the HMT module at the base of the demethanizer stripping section.

When relocating the heat exchange equipment to the top of the pressurized assembly, a significant amount of residue gas piping is eliminated. This design modification reduces the pressure drop across the residue gas flow path and reduces the power consumption. "The reduction in power consumption is a result of this lower system pressure drop due to eliminating interconnecting pipe, and the performance efficiency of the HMT module. Residue gas compression power is typically reduced by 5% to 9% when compared to a traditional liquids recovery plant," according to Scott Miller of Ortloff Engineers.

The GPB™ design arrangement helps companies limit the amount of on-site construction work since the unit is built at an off-site fabrication facility. "All process piping associated with the liquids recovery portion of the gas plant is pre-engineered and pre-fit to minimize on-site field labor," Johnke said.

The reduction in piping reduces the number of potential emission leaks due to the limited number of flanges. The smaller plot size and pre-fabricated materials also allow the plant to be relocated easily to another site in the future, as well as allowing for less downtime should owners decide to retrofit their current plants to the GPB process.

Miller added that the process is capable of incorporating refrigeration internally in the cold separator unit or externally for richer gas streams. The design also allows for an external heating source, such as steam or hot oil, to process at higher product temperatures.

While the reduction in footprint is an obvious benefit of this process, the true benefits lie in the reduced plant CAPEX and OPEX. Ortloff and SME-P officials stated that compared to traditional processing plants, the GPB™ process can reduce power consumption by 6-8%, installation costs by 30-50%, and the footprint size by 30-60%.

When comparing a traditional plant that has a capacity of 200 million standard cubic feet per day (MMcf/d) with a GPB™ plant with the same capacity, Ortloff and SME-P found that the GPB™ plant is the lower cost option and is capable of recovering more liquids while using less power. In their comparison, the companies found that at the same product recovery levels the GPB™ design uses nearly 7% less residue gas compression while lowering the uninstalled cost by approximately $2 million and installation costs by as much as 50%.

The GPB product line includes many of Ortloff's proven process technologies. These process technologies can be adapted to cover a wide range of process feed conditions and offer process options for ethane recovery (GSP-B™ and RSV-B™), propane recovery (SCORE-B™), or the ultimate flexibility to recover or reject ethane with a single process design (SFR-B™ and SRP-B™). – Frank Nieto

Marcellus Midstream 2011: Attorney Discusses Regulatory Risks

Overlaying regulatory phenomena and costs, coupled with the vagaries of commodity prices, are increasing business risks in the play.

Getting natural gas and liquids to market in the Marcellus shale is of increasing importance as development escalates in the vast play. At the recent Marcellus Midstream conference in Pittsburgh, Kenneth G. Hurwitz, a partner with Haynes & Boone LLP, discussed the intricate relationship between the margins of gas and products yields, and the costs of getting those valuable products to market.

Fees for pipeline transportation cut into producers' margins both for regulated and unregulated rates. Overlaying regulatory phenomena onto these costs, coupled with the vagaries of commodity prices, increases business risks, he noted.

Gathering lines are not regulated by FERC. In Pennsylvania, there is uncertainty about whether gathering companies are "public utilities;" public utilities are subject to light-handed rate regulation by the Pennsylvania Public Utility Commission. They must first obtain commission approval to construct facilities, and are vested with the power of eminent domain. The public utility debate was being litigated at the time of the conference in at least one case.

In West Virginia, some gathering facilities are considered public utilities, while others are not. They are not subject to rate regulation by the state Public Service Commission. In New York, "gas corporations" are subject to light-handed rate regulation by the state commission, Hurwitz noted.

"Gas corporations must obtain commission approval to construct facilities, and are vested with the power of eminent domain."

The upshot? For gathering lines, uncertain status and regulatory consequences in Pennsylvania add to transaction costs and cost of entry. This could slow development.

For liquids pipelines, interstate rates are regulated by FERC, and there is no statutory right of eminent domain. Only partial abandonment can be regulated. The commission's regulation is generally light-handed, and index-based, Hurwitz noted.

The risks for liquids lines include difficulty in controlling indexed rate increases. Contested rate cases can take as much as a decade to resolve.

Intrastate pipelines are subject to FERC, but its regulation of pipeline rates is generally less rigorous than for interstate pipelines, Hurwitz noted. The risks are that FERC has recently sought comment on whether to prohibit "buy-sells" and to impose "shipper must have title" requirements. If FERC pursues this path, it could make it more difficult for shippers to surrender/acquire capacity in a tight market.

"Discriminatory treatment by pipeline may be difficult or impossible to defend against," he warned.

Finally, interstate pipelines, which are also subject to FERC regulation, are vested with the power of eminent domain. The risks for these entities are that rates for a new route may be far higher than the rates for other routes, and challenging rates can be difficult—even impossible—and expensive.

"On the plus side, NIMBY opposition has minimal influence over siting of new facilities," said Hurwitz. – Susan Klann

KEY NORTH AMERICAN HUB PRICES	
2:35 PM CST / April 19 2011	
Gas Hub Name	Current Price
Carthage,TX	4.06
Katy Hub, TX	4.18
Waha Hub, TX	4.13
Henry Hub, LA	4.19
Perryville, LA	4.11
Houston Ship Channel	4.18
Agua Dulce TX	4.20
Opal Hub, Wyo.	3.98
Blance Hub, NM	4.02
Cheyenne Hub, Wyo.	4.05
Chicago Hub	4.44
Ellisburg NE Hub	4.61
New York Hub	4.52
AECO , ALBERTA	3.84

Source: Bloomberg

Marcellus Producers' Best Choice For Ethane May Be Gulf Coast... *(continued from page 1)*

He said not only is cracking capacity increasing in the U.S., but in Canada there is expected to be a 40,000-70,000 b/d ethane supply shortfall during the next five to 10 years.

"Incremental non-conventional ethane sources from Canada cannot fill the supply gap. This leaves Alberta ethylene producers with two options: crack other NGLs or source ethane from the U.S.," he said.

Should a pipeline from the Marcellus to Sarnia be developed, the plants in that region would be able to crack approximately 40,000 b/d of ethane.

In Alberta, it would be difficult to crack other NGLs because they would lose the feedstock advantage and create a co-product disposal problem. Consequently, there is the proposed Vantage pipeline from NOVA Chemicals that would transport 50,000-60,000 b/d of ethane from the Bakken shale to Alberta.

"The Canadian ethylene industry could be a major importer of U.S. ethane, somewhere between 70,000-90,000 b/d in the 2015 to 2020 period," he said.

He said not only is cracking capacity increasing in the U.S., but in Canada there is expected to be a 40,000-70,000 b/d ethane supply shortfall during the next five to 10 years.

"Incremental non-conventional ethane sources from Canada cannot fill the supply gap. This leaves Alberta ethylene producers with two options: crack other NGLs or source ethane from the U.S.," he said.

Should a pipeline from the Marcellus to Sarnia be developed, the plants in that region would be able to crack approximately 40,000 b/d of ethane.

In Alberta, it would be difficult to crack other NGLs because they would lose the feedstock advantage and create a co-product disposal problem. Consequently, there is the proposed Vantage pipeline from NOVA Chemicals that would transport 50,000-60,000 b/d of ethane from the Bakken shale to Alberta.

"The Canadian ethylene industry could be a major importer of U.S. ethane, somewhere between 70,000-90,000 b/d in the 2015 to 2020 period," he said.

Not only are crackers and Canadian operations increasing their capacity to handle ethane, it is also expected that roughly 5.6 billion cubic feet per day (Bcf/d) of cryogenic processing capacity will be built between 2011 and 2014.

This capacity does not include Marcellus gas with 34% accounting for basins in the Rockies and Texas, 14% in southeast New Mexico, 10% in the Bakken, and 8% in Oklahoma. Fasullo said that it is also highly probable that an additional 2.8 Bcf/d of processing capacity could be built between 2015 and 2020 in these regions.

With this additional capacity, and excluding Marcellus production and capacity, ethane extraction could increase to 1.1 million b/d between 2015 and 2020. This would mean that the U.S. ethylene industry's ability to crack ethane would continue to exceed the industry's ability to extract ethane, excluding ethane from the Marcellus.

"The ethane supply gap could be as high as 60,000 b/d as 70,000 to 90,000 b/d of ethane exports to Canada will diminish U.S. ethane supplies available to the U.S. Gulf Coast ethylene industry," he said.

Thus far the majority of the activity in the Marcellus has focused on the lean gas portion of the play with 70% of production focused on lean gas due to the lack of processing and NGL infrastructure in the region.

However, this is expected to change with 50% of production focused on rich-gas beyond 2014 as infrastructure is added. Total production out of the play is expected to average at least 6 Bcf/d in 2020.

Currently this is only 77 million cubic feet (MMcf/d) of processing capacity in the Marcellus, but this is expected to increase to nearly 1.8 Bcf/d between 2011 and 2015. This would result in a total potential recoverable ethane level of 145,000 b/d.

Fasullo said that of this total, 40,000 b/d would be "must recover ethane" and would be shipped to Sarnia. The remaining 105,000 b/d would need to be absorbed by the U.S. ethylene market with as much as 60,000 b/d shipped to the Gulf Coast to satisfy the expected ethane cracking capability of ethylene producers in the region.

There are four market options for the remaining Marcellus ethane, according to Fasullo. In addition to the aforementioned projects to transport it via pipeline to Sarnia and the Gulf Coast, the other options include transporting it via pipeline to Conway and shipping it via pipeline and marine vessels to the Gulf Coast.

Fasullo said that the Conway option makes little sense because that market is already saturated; it makes sense to transport under 40,000 b/d to Sarnia and projects to the Gulf Coast are having trouble gaining traction because producers in the Marcellus are reluctant to sign long-term transportation agreements.

While netbacks at both Sarnia and Mont Belvieu are between a healthy 25-26¢, the fear is that should ethane frac spreads return to historic levels in Mont Belvieu it would leave Marcellus producers breaking even at best.

Another option would be to build an ethylene plant in the Marcellus. While this seems like a sound project on paper, Fasullo said it would face major challenges. First, there would need to be an ethylene derivative plant, such as a polyethylene plant nearby. The cost for such a "world-scale" facility that would consume 45,000-60,000 b/d of ethane is estimated at $2 billion or more. In addition, he noted that ethylene is as difficult to store and handle as ethane.

Resin Prices

Market Update – April 20, 2011

TOTAL OFFERS: 11,273,396 lbs		SPOT		CONTRACT	
Resin	**Total lbs**	**Low**	**High**	**Bid**	**Offer**
PP Copolymer - Inj	3,403,368	0.86	1.03	0.92	0.96
LLDPE - Film	1,761,312	0.68	0.75	0.68	0.72
HDPE - Blow Mold	1,670,184	0.83	0.98	0.9	0.94
LDPE - Film	1,071,840	0.77	0.8	0.73	0.77
HDPE - Inj	881,840	0.74	0.76	0.72	0.76
HMWPE - Film	837,748	0.77	0.91	0.87	0.91
PP Homopolymer - Inj	820,920	0.7	0.76	0.68	0.72
LDPE - Inj	274,000	0.82	0.86	0.81	0.86
GPPS	232,000	0.95	0.96	0.88	0.93
HIPS	190,000	0.93	0.93	0.825	0.865
LLDPE - Inj	130,184	0.79	0.8	0.745	0.785

Market Update | Source: Plastics Exchange – www.theplasticsexchange.com

"It would be more cost-efficient to transport the ethane to the Gulf Coast ethylene industry, which is more capable to absorb the ethane, convert the ethylene, and consume the derivatives," he said.

While producers are concerned about netbacks, Fasullo said they are likely to receive positive netbacks over the long-term and Marcellus rich-gas producers should carefully consider transporting ethane to the Gulf Coast. – Frank Nieto

High Gasoline Prices May Increase Support For NAT GAS Act

High gasoline prices may result in Congress extending tax incentives worth $5 billion designed to increase the number of natural gas vehicles (NGVs) and refueling stations on the road. Earlier this month, Rep. John Sullivan (R-Okla.) introduced the "New Alternative Transportation to Give Americans Solutions (NAT GAS) Act into the House.

The bill, which would extend and expand tax credits for NGVs while also promoting the development of NGVs and related infrastructure, has 133 bipartisan co-sponsors.

Sullivan and the bill's original co-sponsors, Reps. Kevin Brady (R-Texas) and Dan Boren (D-Okla.), introduced a similar bill in 2009. This bill, along with a similar one introduced in the Senate by Sen. Robert Menendez (D-N.J.), was unable to garner enough support at the time for any movement to take place.

The bill would make all dedicated NGVs eligible for a credit to 80% of the vehicle's incremental cost with a maximum value of $7,500 for a light-duty passenger vehicle to $64,000 for heavy trucks; a tax credit to NGV manufacturers; increase the refueling property tax credit from $50,000 to $100,000 per station; and continue a 50¢ per gallon fuel tax credit that is currently in place. – Frank Nieto

NEWS & TRENDS

Japan Needs Additional LNG Despite Increased Imports

The chairman of the Japan Gas Association, Mitsunori Torihara, announced this week that Japan would need to increase its imports of LNG despite the associated price increase in order to limit power outages.

The increased imports are necessary because of the reduced nuclear power generation following the earthquake and tsunami that devastated the nation last month.

Although the country recently imported an additional 4 million tons of additional LNG that will be delivered from Qatar over the next year, more imports are necessary.

"Additional purchases from the utilities will tighten the supply and demand balance, but the market was originally oversupplied, with about 40 to 50 million tons said to be in surplus globally," Torihara, who is also chair of Tokyo Gas Co. Ltd., said at a news conference according to Reuters.

The country may need to import up to an additional 10 million tons of LNG. Although these additional supplies will help to drive up global prices, it is important to note that the surplus of gas will still not be worked off with this increased demand from Japan.

"A rise in LNG prices will be unavoidable from now on, but in terms of volume, there is no need to worry," Torihara said.

Last month, *Midstream Monitor* reported that Japan would receive additional LNG cargoes from not only Qatar, but also South Korea's state-run Korea Gas Corp. on a swap basis, as well as from Russia. – Frank Nieto

UGI Storage Completes Open Season For Pennsylvania Storage Assets

UGI Energy Service's affiliate, UGI Storage Co., Reading, Penn., has reported the successful completion of its initial open season to sell firm storage service from its natural gas storage assets located in north-central Pennsylvania. Service commenced on April 1, 2011, for the winning bidders, including Virginia Power Energy Marketing, UGI Central Penn Gas, J. Aron/Goldman Sachs, and New Jersey Resources Energy Services.

"We are pleased that we received substantial interest in the inaugural open season for our storage services," said Peter Terranova, vice president of Energy Services and UGI Storage Co. "The results confirm that our storage fields, which are located in the heart of the Marcellus Shale region, efficiently span interstate pipelines, Marcellus Shale gas and growth markets in Pennsylvania and the northeast."

The three storage fields, located in the Pennsylvania counties of Tioga, Potter and Cameron, have access to the Dominion Transmission, Transco, Tennessee Gas Pipeline and UGI CPG pipelines. UGI

Energy Services plans future expansions of storage deliverability, interconnects with Marcellus producers and expansions to establish direct connections to high value utility markets in southeastern Pennsylvania. Terranova said, "UGI Storage plays a vital role in UGI Energy Services expanding role as a provider of midstream services to Marcellus producers and end-use markets."

Gas Processors Association Announces New Officers

The Gas Processors Association (GPA) recently announced its new team of officers for 2011-2012.

GPA confirmed the new officers the first week of April during the 2011 GPA Convention in San Antonio, Texas, where the association celebrated its 90-year milestone with midstream professionals from around the world.

Mike Heim will lead GPA as the newly appointed president. Heim is executive vice president and chief operating officer of Targa Resources (Houston) and has been involved in GPA matters since 2004, serving on the board of directors and previously on the finance committee.

President-elect is Tom O'Connor, chairman of the board, president and chief executive officer of DCP Midstream (Denver). His career spans more than two decades in the energy industry.

GPA has three vice presidents: Sharon Robinson, Terry Spencer and Joel Moxley.

Robinson is senior vice president of Copano Energy and president and chief operating officer of Copano's Oklahoma subsidiaries (Tulsa, Okla.). She has served on the GPA board of directors for the past seven years.

Spencer is chief operating officer of ONEOK Partners (Tulsa, Okla.) and a member of the ONEOK Partners board of directors. Spencer has been a board member since 2004 and has served as a GPA vice president previously.

Moxley is senior vice president of Crestwood Midstream (Houston), Operations and Commercial. Moxley has been an active GPA leader for many years, serving on the board of directors, as a vice president and as chair of the Houston GPA chapter.

The officers assumed their new responsibilities upon the conclusion of the GPA Convention, which brought more than 1,900 midstream industry professionals together to share information about research and development, safe operations and environmental performance and legislative and regulatory issues, among others. GPA also used the annual convention as a platform to celebrate its 90th anniversary.

"GPA was founded by key decision-makers in the natural gas industry in 1921 and continues to benefit from strong industry leadership today, which is why we are able to celebrate 90 years as an association," said Mark Sutton, GPA executive director.

Magnum Hunter Holsters Appalachian-Focused NGAS

On April 13, Houston-based Magnum Hunter Resources Corp. (Amex: MHR) completed its acquisition of Appalachian Basin-focused NGAS Resources Inc., Lexington, Ky., (Nasdaq: NGAS) for approximately $98 million in common stock and assumed liabilities.

Previously, Jefferies & Co. Inc. analyst Subash Chandra valued the deal at roughly $150 per acre for 300,000 net Appalachian acres and production at $6,000 per flowing Mcfe. "Appalachian acquisitions provide material upstream and midstream scale at a reasonable price," Chandra said in a Dec. 27 note to clients.

A British Columbia corporation, NGAS has core assets of more than 360,000 acres (68% undeveloped), primarily in the southern Appalachian Basin, with interests in approximately 1,400 wells, an extensive inventory of some 2,400 low-risk horizontal drilling locations and exposure to the Huron shale and emerging Weir oil play. The company also operates the gas-gathering facilities for its core Appalachian properties, providing deliverability directly from the wellhead to the interstate pipeline.

Magnum Hunter purchased NGAS for $0.55 per share, representing a 41% premium based on its Dec. 23 closing price of $6.50 per share, with a fixed exchange ratio of 0.0846. The company was also expected to have issued some 6.6 million shares, representing 8% of its fully diluted shares outstanding.

The transaction was also conditioned on the restructuring of NGAS' transportation agreements with Seminole Energy Services LLC, including the payment of $10 million in cash or Magnum Hunter restricted stock, the cancellation of approximately $7 million in remaining note installments from Seminole's purchase of the NGAS Appalachian gathering system in August 2009, and the right to acquire a 50% interest in Magnum Hunter's Marcellus gas processing plant.

The acquired liabilities consisted of a senior credit facility, with approximately $35.2 million outstanding; approximately

$14.7 million in remaining NGAS 6% convertible notes to be paid off at closing; other long-term debt of about $6.3 million to be assumed; and cash and positive working capital of approximately $11.6 million as of Sept. 30.

To finance the assumed liabilities, Magnum Hunter closed a new $250-million five-year term senior secured revolving credit facility on April 13. The new borrowing base was established at $145 million, an increase from an initial borrowing base of $120 million upon completion of the NGAS acquisition.

The new borrowing base level of $145-million will be set following the completed acquisition of Williston Basin focused NuLoch Resources Inc. (Toronto Venture: NLR:), which is expected to occur by April 29.

The facility was provided by BMO Capital Markets Corp., which was financial advisor to Magnum Hunter during the acquisition process.Meanwhile,Bank of Montreal was the administrative agent under the facility, with Capital One NA as syndication agent, Amegy Bank National Association, KeyBank National Association and UBS Securities LLC as co-documentation agents. New participating banks that were added to the facility include Citibank NA, Credit Suisse AG, Deutsche Bank Trust Co. Americas, and Union Bank NA.

Rounding out the firms that were involved in the Magnum-NGAS deal are Capital One Southcoast Inc., Fulbright & Jaworski LLP, KeyBanc Capital Markets Inc. and Skadden, Arps, Slate, Meagher & Flom LLP. – Nancy Miller

PIPELINES & TECHNOLOGY

TransCanada Receives Confirmation Of Keystone Environmental Review

TransCanada Corp. has been informed that the U.S. Department of State has published the Keystone XL pipeline's Supplemental Draft Environmental Impact Statement (SDEIS).

"The Department of State has committed to making a decision on TransCanada's request for a Presidential Permit for the U.S. portion of Keystone XL by the end of 2011," said Russ Girling, TransCanada's president and chief executive . "The public release of the supplemental environmental impact statement for this project is a significant step forward in ensuring that timeline is met."

The Department of State has indicated that the SDEIS public comment period will be open for 45 days.

According to all of the material that TransCanada has filed with the Department of State, Keystone XL will:

- Use highly-qualified engineering and environmental professionals to design and construct the pipeline.
- Have virtually no emissions associated with the operation of the pipeline and its related facilities.
- Bury the pipeline deeper than regulations require.
- Restore the pipeline route to the condition we found it.
- Utilize the latest technology and strong steel to manufacture the pipe to exceed industry standards and regulatory requirements.
- Install additional shut-off valves in key locations.
- Have 16,000 secure data sensors that provide our Oil Control Specialists with real-time information on pipeline pressure, volumes and flow.

The completed Keystone system will provide America with real options to bolster its energy and economic security by increasing its supply of oil from a friendly and reliable source in Canada. It will be a safe, modern and leading-edge pipeline with a very limited environmental impact. In addition, the Keystone system is projected to:

- Spur more than $20 billion in new spending for the U.S. economy.
- Create 20,000 high-quality jobs during the pipeline's construction phase.
- Generate $6.5 billion in new personal income for U.S. workers and their families.
- Stimulate more than $585 million in new state and local taxes in states along the pipeline route during construction.
- Deliver $5.2 billion in taxes over the life of the project.

Rockwell Introduces MCCs With Embedded EtherNet/IP Capabilities

Rockwell Automation, Milwaukee, Wis., has reported the addition of EtherNet/IP to its CENTERLINE motor control centers (MCCs). With the features of an integrated EtherNet/IP network, manufacturers now have access to production information throughout the enterprise and can take advantage of simplified device programming with Premier Integration.

"We are excited to launch our new EtherNet/IP-enabled MCC," said Paul Krause, product marketing manager, Rockwell Automation. "With EtherNet/IP integrated into our CENTERLINE MCCs, customers can access more detailed production data. This allows plant engineers to predict potential problems and help prevent equipment failures – ultimately resulting in higher asset availability, improved productivity and reduced maintenance costs."

Leveraging a single, standard network simplifies communication for the entire enterprise and provides users with the flexibility to control, configure and collect data from any point in the system. In addition, by taking advantage of Premier Integration, users can configure and commission their MCC faster with RSLogix 5000 software, helping to eliminate errors associated with redundant programming.

Furthermore, the Ethernet connection allows CENTERLINE MCC users to access information remotely. This allows personnel to safely monitor, troubleshoot and diagnose the MCC without exposing them to potentially dangerous conditions and power equipment. Knowing how a motor control center is performing from anywhere also saves time by minimizing the need for maintenance personnel to enter the motor control center. This saves time associated with suiting up with personal protective equipment and helps protect personnel from exposure to hazardous conditions.

Designed to meet global standards, CENTERLINE low-voltage MCCs offer a rugged, high-performance packaging solution to meet all of a manufacturer's motor control needs. With embedded IntelliCENTER technology, Centerline MCCs use a pre-configured and pre-tested network with integrated hardware and software. This level of integration helps reduce installation time with its plug-and-play set-up, and can help minimize facility downtime by quickly providing intelligent diagnostic and predictive failure information.

NGL PRICES

Fitch Ratings: Ethane Will Be Favored Over Naphtha For Foreseeable Future

Increased demand from the petrochemical industry saw Mont Belvieu ethane increase in value by 2% to 73¢ the week of April 13. While costs have been increasing, they are not expected to rise at such a rate that would limit demand.

A report on April 18 from Fitch Ratings stated that the trend of petrochemical producers favoring ethane over naphtha to produce ethylene would continue for the foreseeable future.

"The aggressive multi-year Capex budgets announced by exploration and production companies for onshore liquids-rich shale drilling in North America suggests this trend may not abate for some time," the report said.

While demand is expected to increase from the petrochemical side, ethane will maintain its price advantage due to abundant supplies from high levels of production. "The trend of ample NGL supply may last for some time, to the benefit of

NGL PRICES						
Mont Belvieu	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
April 13 - 19, '11	73.13	142.06	185.18	201.58	251.30	$60.33
April 6 - 12, '11	70.88	140.76	187.50	202.40	249.50	$59.84
March 30 - April 5, '11	73.70	136.56	186.96	198.90	246.45	$59.45
March 23 - 29, '11	70.79	138.94	190.03	198.42	243.60	$59.24
March '11	68.59	139.76	181.80	192.01	243.97	$58.42
February '11	61.86	137.14	173.64	187.12	224.73	$55.21
1st Qtr '11	63.74	137.32	175.07	186.15	228.46	$55.82
4th Qtr '10	59.07	126.07	162.01	168.24	198.89	$50.59
3rd Qtr '10	44.99	106.98	138.23	143.25	171.45	$42.37
2nd Qtr '10	50.97	108.43	145.01	157.23	178.04	$44.64
April 14-20, '10	50.85	112.66	154.10	160.68	194.10	$46.79
Conway, Group 140	**Eth**	**Pro**	**Norm**	**Iso**	**Pen+**	**NGL Bbl**
April 13 - 19, '11	50.36	131.40	170.28	195.50	241.18	$54.43
April 6 - 12, '11	55.88	131.12	175.00	200.55	243.60	$55.84
March 30 - April 5, '11	56.40	128.70	174.10	201.50	242.83	$55.57
March 23 - 29, '11	53.68	129.46	177.70	191.62	241.25	$55.03
March '11	50.44	129.33	169.43	190.30	244.91	$54.26
February '11	44.36	126.61	161.11	191.61	224.17	$51.13
1st Qtr '11	46.30	128.26	164.69	186.06	225.91	$51.80
4th Qtr '10	47.01	120.80	157.16	161.69	193.86	$47.80
3rd Qtr '10	31.16	101.46	132.39	141.93	163.91	$39.04
2nd Qtr '10	31.56	103.03	130.96	145.20	172.55	$39.90
April 14-20 '10	33.36	109.53	134.83	146.77	187.45	$42.22

Data Provided by Intercontinental Exchange. Individual product prices in cents per gallon. NGL barrel in $/42 gallons | Source: Frank Nieto

North American chemicals producers," Fitch said.

The report noted that as of February 2011, ethane-based production of ethylene cost approximately 31¢ compared to naphtha-based ethylene production costs of 56¢. This is a trend that has been in place since 2008 and resulted in approximately 70% of ethylene cracker nameplate capacity geared to ethane.

While this situation has caused ethane prices in the Gulf Coast to experience significant increases due to its location as the primary petrochemical market in the U.S., Conway ethane has experienced a slower pace for price improvements.

In fact, Conway ethane dropped 6% in value to 50¢ the week of April 13 as demand is limited in the Midcontinent, but supplies remain abundant. This was the lowest price at the hub since it was 47¢ the week of March 9.

Propane experienced price gains at both hubs as it rose 1% to $1.42 at Mont Belvieu and increases slightly to $1.31 at Conway. Both prices were the highest at their hubs in five weeks. The lower storage levels for propane from last year continue to benefit the price despite the seasonal drop-off in demand.

Heavy NGL prices were down for the most part this week at both hubs as there was a rash of sales on crude oil during the week of April 13 due to a report from Goldman Sachs that recommended clients sell their interest in raw materials.

However, this assessment was questioned by other investment banks, and the price of crude continues to rise, which should result in a bounce-back for the heavy NGLs next week.

This perception of a weakness for crude oil resulted in C5+ prices being mixed the week of April 13 as it increased 1% to $2.51 at Mont Belvieu while it was down 1% to $2.41 at Conway. The Mont Belvieu price was its highest price since it was $2.65 the week of July 30, 2008, while the Conway price was the lowest in five weeks.

Butane prices fell at both hubs as it was down 2% to $1.70 at Conway and 1% to $1.85 at Mont Belvieu. Its sister product, isobutane, also fell at both hubs as it was down 2% to $1.96 at Conway and $2.02 at Mont Belvieu. – Frank Nieto

Current Frac Spread (Cents/Gal)

APRIL 14, 2011	Conway	Change from Start of Month	Mont Belvieu	Start of Month
Ethane	50.36		73.13	
Shrink	27.18		27.91	
Margin	23.18	-21.77%	45.22	3.32%
Propane	131.40		142.06	
Shrink	37.56		38.56	
Margin	93.84	-1.06%	103.50	0.19%
Normal Butane	170.28		185.18	
Shrink	42.52		43.66	
Margin	127.76	-4.61%	141.52	-2.46%
Iso-Butane	195.50		201.58	
Shrink	40.84		41.93	
Margin	154.66	-4.00%	159.65	-1.25%
Pentane+	241.18		251.30	
Shrink	45.47		46.69	
Margin	195.71	-1.99%	204.61	0.23%
NGL $/Bbl	54.43	-2.54%	60.33	0.80%
Shrink	14.98		15.38	
Margin	39.45	-4.66%	44.95	0.09%
Gas ($/mmBtu)	4.10	3.54%	4.21	2.93%
Gross Bbl Margin (in cents/gal)	90.19	-4.58%	104.42	0.13%
NGL Value in $/mmBtu				
Ethane	2.77	-9.88%	4.03	3.17%
Propane	4.56	0.21%	4.93	0.92%
Normal Butane	1.84	-2.70%	2.00	-1.24%
Iso-Butane	1.22	-2.52%	1.25	-0.41%
Pentane+	3.11	-0.99%	3.24	0.72%
Total Barrel Value in $/mmbtu	13.50	-2.93%	15.45	1.06%
Margin	9.40	-5.51%	11.24	0.38%

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.

Shrink is defined as Btus that are removed from natural gas through the gathering and processing operation.

Source: Frank Nieto

FRAC SPREAD

Natural Gas Prices Push NGL Margins Down

Frac spread margins for NGLs were down for the most part at both hubs with only three NGLs being up at Mont Belvieu and no margin improvements at Conway the week of April 13. The lone margin to improve above 1% at either hub was Mont Belvieu ethane.

Mont Belvieu ethane improved by 3% in margin, while only propane and C5+ only improved by less than 1%. The largest drop in margin at either hub was Conway ethane at 22%. Butane had the largest drop in margin at Mont Belvieu at 3%.

These changes were largely due to stagnant NGL prices combined with sizable gains in natural gas feedstock prices, which improved by 4% to $4.10 per million Btu (/MMBtu) at Conway and 3% to $4.21/MMBtu at Mont Belvieu.

For the week of April 13, the price of the theoretical NGL barrel improved by 1% to $60.33 per barrel (/bbl) with a very slight improvement in margin at $44.95/bbl. These results were primarily due to the improvement in ethane at the hub. The Conway theoretical NGL

barrel was down 3% to $54.43/bbl with a 5% drop in margin to $39.45/bbl.

The most profitable NGL to make at both hubs remained C5+ with a frac spread margin of $2.05 per gallon (/gal) at Mont Belvieu and $1.96/gal at Conway. This was followed, in order, by isobutane at $1.60/gal at Mont Belvieu and $1.55/gal at Conway; butane at $1.42/gal at Mont Belvieu and $1.28/gal at Conway; propane at $1.04/gal at Mont Belvieu and 94¢/gal at Conway; and ethane at 45¢/gal at Mont Belvieu and 23¢/gal at Conway.

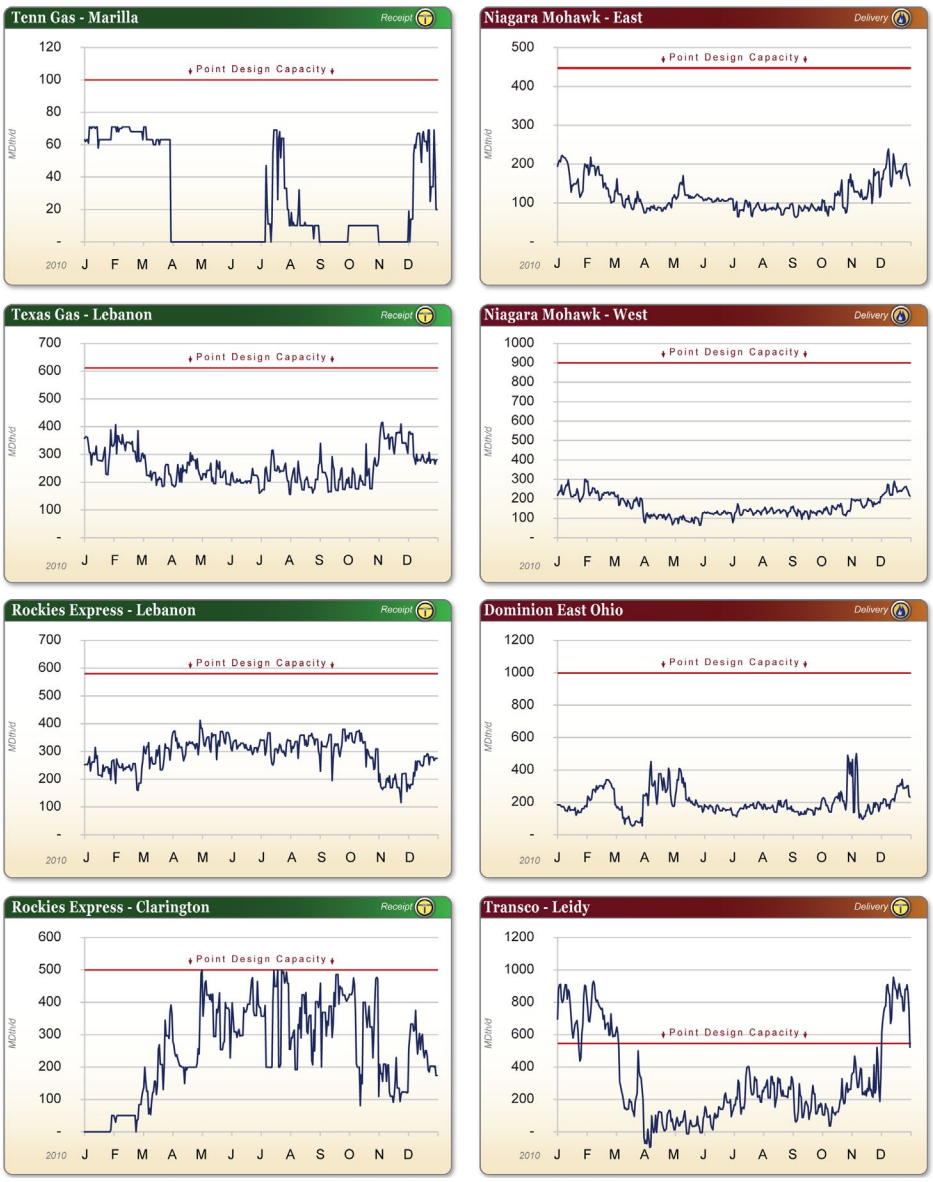
Due to the Easter holiday we published before the Energy Information Administration released its natural gas in storage report. We will resume coverage of this next week. – Frank Nieto

SNAPSHOT

Dominion Transmission Continues To Focus On Marcellus

The Dominion Transmission pipeline is owned by Dominion Resources Inc. and operated by Dominion Transmission Inc., headquartered in Richmond, Virginia. It has 3,142 miles of pipeline that brings gas from the Dominion Cove Point LNG terminal in Maryland and gas from Ohio and Virginia into extensive natural gas storage fields in Pennsylvania and West Virginia, and also brings gas into New England.

According to Hart Energy Mapping and Data Services, the system has a capacity of 5.7 billion cubic feet per day (Bcf/d), a seasonal storage of 409 billion cubic feet (Bcf), and 75 compressor stations. Statoil Natural Gas LLC is its highest transport customer with 700,000 dekatherms per day (Dth/d) of capacity; followed by Niagara Mohawk Power Corp. (rate FTNNG) with 434,000 Dth/d. The rest of the Top 10 are The East Ohio Gas Co. (FTNNG) with 413,000 Dth/d; Niagara Mohawk Power Corp. (FTNN) with 317,000 Dth/d; The East Ohio Gas Co. (FTNN) with 267,000 Dth/d; PSEG Energy Resources & Trade LLC (FT) with 251,000 Dth/d; Peoples Natural Gas Co. LLC with 241,000 Dth/d; BP Energy Co. with 200,000 Dth/d; PSEG Energy Resources & Trade LLC (FTGSS) with 170,000 Dth/d; and Dominion Hope with 130,000 Dth/d.

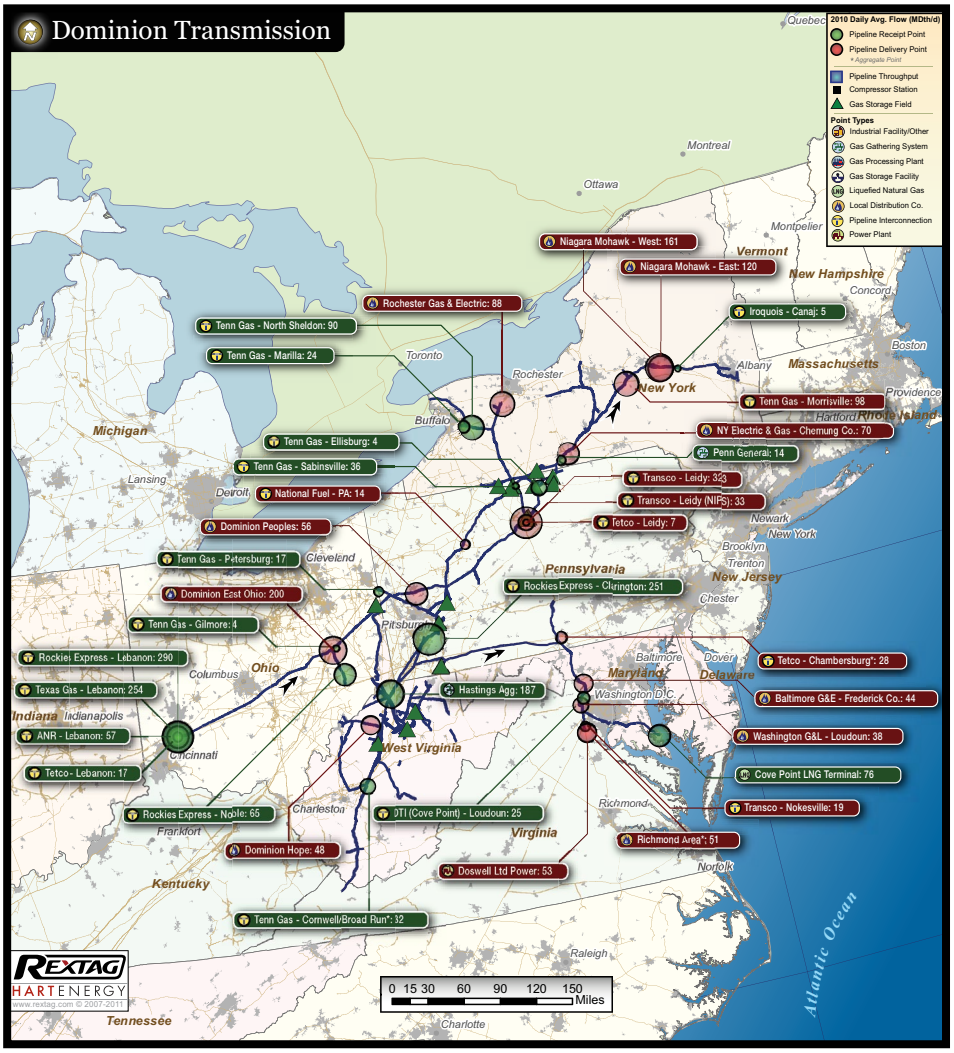


Throughout the year Dominion Transmission's interconnection at Clarington, Pennsylvania, with the Rockies Express pipeline was the most active receipt point throughout the year. The most active delivery point was the system's interconnection with the Transco pipeline in Leidy, Pennsylvania.

The top five storage customers are Transcontinental Gas Pipeline LLC with 49.04 Bcf; Niagara Mohawk Power Corp. with 22.92 Bcf; The East Ohio Gas Co.

with 18.58 Bcf; PSEG Energy Resources & Trade with 15.57 Bcf; and Keyspan Gas East Corp. with 13.16 Bcf.

The pipeline's proximity to the Marcellus shale is seeing it increase the number of facilities and delivery points it connects to. Earlier this year Dominion Transmission announced plans to build a natural gas processing and fractionation plant near New Martinsville, West Virginia, as part of its previously announced Marcellus 404 Project. According to a press release, the company acquired 56 acres of land from PPG Industries at its Natrium site that it will use to build the plant, which will process up to 300,000 cubic feet per day of natural gas and fractionate up to 38,000 barrels per day of natural gas liquids. – Rebecca Torrellas



General Information — FERC Code: 022

Owner:	Dominion Resources, Inc.	System Capacity:	5.7 Bcf/d
Operator:	Dominion Transmission, Inc.	Seasonal Storage:	409 Bcf
Miles of Pipeline:	3,142	Compressor Stations:	75

Top 10 Transport Customers — Capacity (MDth/d)

Rate	Customer Name	Capacity
FT	Statoil Natural Gas, LLC	700
FTNNG	Niagara Mohawk Power Corporation	434
FTNNG	The East Ohio Gas Company	413
FTNN	Niagara Mohawk Power Corporation	317
FTNN	The East Ohio Gas Company	267

Rate	Customer Name	Capacity
FT	PSEG Energy Resources & Trade LLC	251
FTNNG	Peoples Natural Gas Company LLC	241
FT	BP Energy Company	200
FTGSS	PSEG Energy Resources & Trade LLC	170
FTNNG	Dominion Hope	130

Contact Information:

FRANK NIETO Editor
fnieto@hartenergy.com

REBECCA TORRELLAS
Online News Editor
rtorrellas@hartenergy.com

HARTENERGY
1616 S. Voss, Suite 1000 • Houston TX 77057-2627 • USA
www.hartenergy.com | www.midstreambusiness.com
Midstream Monitor is published weekly by Hart Energy and is included with a premium subscription to midstreambusiness.com. Premium subscriptions are $995 per year.

SHARON COCHRAN Circulation Coordinator
E-mail: scochran@hartenergy.com
Mail: Hart Energy Publishing, LP
1616 S. Voss. Ste. 1000
Houston, TX 77057 USA