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FEATURE

Devon Energy's Midstream Growth Concentrated In Barnett, Woodford Shales

While Devon Energy's primary focus is in E&P, the company's midstream division is a very important and profitable segment of the company. "We produce somewhere around 250 million barrels per year, so that adds a couple of dollars per barrel on our net back. It's a very, very profitable business for us," John Richels, president and chief executive of Devon, said at the recent Barclays CEP Energy Power Conference in New York.

Indeed, the company's midstream division is designed to support its E&P operations, but it typically draws between \$400- to \$500 million in operating profits. This year profits are expected to be higher at \$530 million.

Richels stated that profits from its multiple divisions allow the company to maintain a balanced portfolio and competitive cost structure that provides for high full-cycle



returns. In addition, the company's diversified assets provide repeatable growth opportunities.

This flexibility carries over to its E&P operations where Devon has managed to not get bogged down with lease exploration issues. This has allowed the company to focus on plays and regions that it wants to focus on based on market conditions rather than on regions it must develop in order to hold

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INSIDE LOOK AT PROCESSING

Propane Exports, Ethane Demand Are Big Parts Of Growth For Enterprise

"We focus on building systems, not just collecting assets...We call it a value-chain approach, and it has served us well in that we are the largest publicly traded energy partnership...We have an integrated system serving producers and consumers," Jim Teague, executive vice president and chief operating officer of Enterprise Products Partners LP, said at the recent Barclays CEO Energy Power Conference in New York.

Teague explained that this value-chain approach means that it offers contiguous integrated services for natural gas, NGLs, crude oil and refined products from the point of production to the point of consumption. This approach has seen Enterprise expand to include more than 50,000 miles of

pipeline for various products, 192 million barrels of liquids storage, and 19 NGL and propylene fractionation facilities that will have a total capacity of 800,000 barrels per day (b/d) by the end of this year. In addition, the company also owns other midstream assets including an NGL import/export facility and offshore pipelines.

The depth of these assets provides Enterprise with a presence in nearly every major producing region of the country. Its pipelines also provide customers access to every ethylene plant and 95% of the refining capacity east of the Rocky Mountains.

"You can build a supply system, but duplicating that distribution system would be all but impossible...This system is designed

(continued on page 7)

Shell To Expand Jumping Pound Processing Complex

Shell Canada announced plans to expand its Jumping Pound natural gas processing complex near Calgary, Alberta, Canada by 2013 to produce LNG to use as a transportation fuel for heavy duty vehicles.

Should the project be approved it will be the first LNG facility designed for the

transportation sector by Shell. The company currently sells third-party LNG at some of its Flying J truck stops.

“Our strong portfolio and worldwide LNG leadership puts us in a unique position to grow LNG in key markets,” said Marvin Odum, president, Shell Oil Com-

pany. “And, to meet growing demand, natural gas for larger fleet vehicles delivers reduced emissions and offers a cost-competitive alternative to other fuels. LNG can provide great advantages for our commercial customers as a future energy solution in transportation.”

NGL Inventory Levels Lower In 1H 2011 Due To Increased Demand, Improved Prices

Very strong demand from the petrochemical industry for ethane has caused ethane stock levels to hit their lowest levels since 2008, according to data from the Energy Information Administration (EIA).

The June 2011 stock level of 949,000 barrels (bbls), the most recent data available from the EIA, was down 65% from the June 2010 stock level of 2.7 million bbls as U.S. ethane crackers were operating at more than 95% capacity. This heavy usage was a result of the significant cost advantages of cracking ethane for ethylene production over naphtha cracking.

Though the June stock level increased 36% from January 2011’s stock level of 697,000 bbls, this increase was not based on an oversupplied market; rather, it was because of several ethylene cracker outages in the spring. By June 2011, some of these facilities had been brought back on-line, which resulted in increased demand for ethane. This was reflected in the 16% decrease in stock levels from May 2011’s inventory level of 1.1 million bbls.

Since ethane prices and demand have had such a strong effect on inventory levels in 2011, stock levels should remain at or below 2008 levels for the remainder of 2011 since ethane remains the most preferred ethylene feedstock. Despite a two-week period last month when naphtha surpassed ethane as the preferred ethylene feedstock, ethane demand from crackers held firm until ethane regained this status.

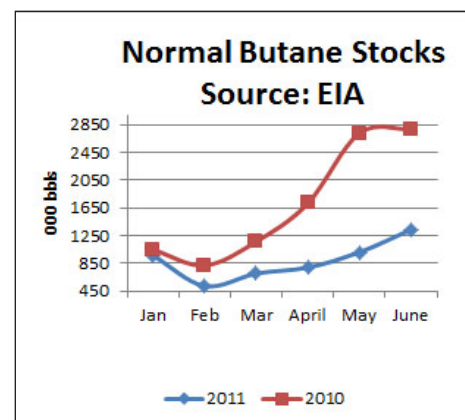
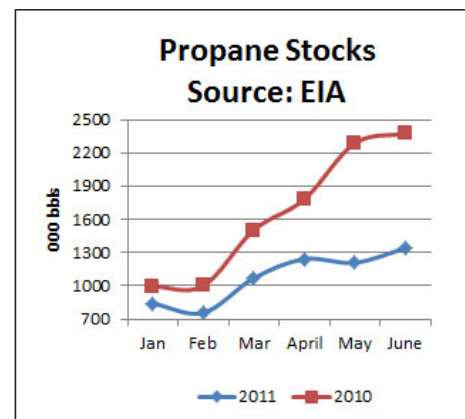
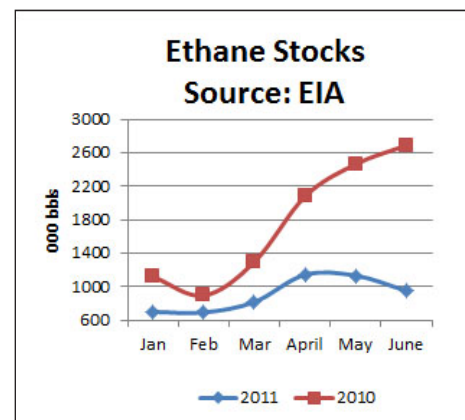
Although propane inventory levels increased in the first six months of 2011, the monthly storage levels were amongst the lowest from the previous few years. These lower inventory levels were because of increased demand from the international market for propane for propylene cracking.

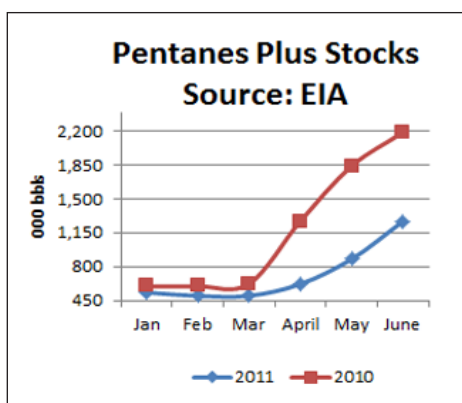
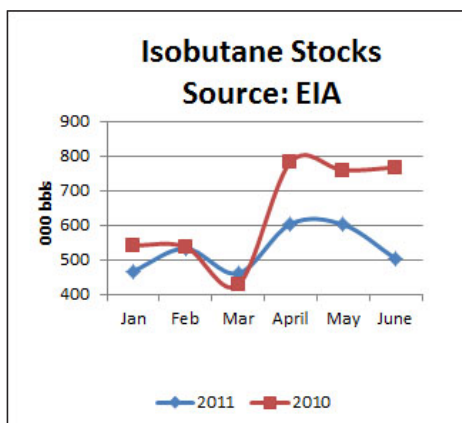
Typically, the spring and summer months are a period of storage injection for propane, but this injection wasn’t as strong in 2011. From January to June 2011, the stock level rose 59% compared to a 139% increase in the inventory level from the same six-month time period in 2010.

The June 2011 stock level of 1.3 million bbls was 78% lower than the June 2010 level of 2.4 million bbls. Although this June 2011 stock level represented an 11% increase over the 1.2 million bbls stock level in May 2011, it was also the lowest monthly inventory level for June since 2008.

Heavy NGL inventory levels in the first half of 2011 were also far below their 2010 counterparts, but for a different reason than the lighter NGLs. While ethane and propane inventory levels decreased because of improved demand from the petrochemical industry, heavy NGL followed improvements in crude prices and sales were much improved compared to 2010.

The stock level for butane in June 2011 was 1.3 million bbls, a 52% decrease from the June 2010 level of 2.8 million





bbls. This was the largest gap in the yearly differentials between 2010 and 2011 for butane stocks. While the June 2011 inventory level represented a 39% increase over the 964,000 bbls stock level in January 2011, it also was much smaller than the same time period in 2010.

The first six months of 2010 saw butane inventory levels increase 166%, which was primarily due to poor isobutane

prices that resulted in the June 2010 stock level being the highest in almost 10 years.

The only NGL to have its stock level be higher at any time in the first six months of 2011 compared to the same time period in 2010 was isobutane, which saw its March stock level come in 8% greater at 460,000 bbls.

Demand for alkylate wasn't as high as in the past in March due to refiners making a later switch over to summer-grade gasoline. In the following three months, the inventory levels have been below their 2010 levels.

The June 2011 inventory level of 502,000 bbls was 53% lower than in June 2010 when it was 766,000 bbls. Because refiners switched over to summer-grade gasoline later, demand was greater late in the season. Consequently isobutane inventories only rose 8% from January 2011 to June 2011.

Pentanes-plus (C₅₊) inventory levels in the first three months of 2011 were very similar to their levels during the same time in 2010, but from April to June inventory levels in 2011 were much smaller due to the strong improvements in crude prices.

The June 2011 stock level of 1.3 million bbls was 42% lower than the June 2010 level of 2.2 million bbls. The first six months of 2011 saw inventory levels rise

138% compared to a 267% increase in the same time period of 2010.

– Frank Nieto

Notes: EIA defines ethane as “a normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of -127.48° F. It is extracted from natural gas and refinery gas streams.”

EIA defines propane as “a normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of -43.67o F. It is extracted from natural gas or refinery gas streams. It includes all products designated in ASTM Specification D1835 and Gas Processors Association Specifications for commercial propane and HD-5 propane.”

EIA defines normal butanes as “a normally gaseous straight-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of 31.1° F. It is extracted from natural gas or refinery gas streams.”

EIA defines iso-butane as “a normally gaseous branch-chain hydrocarbon. It is a colorless paraffinic gas that boils at a temperature of 10.9° F. It is extracted from natural gas or refinery gas streams.”

EIA defines pentanes plus as “a mixture of hydrocarbons, mostly pentanes and heavier, extracted from natural gas. Includes isopentane, natural gasoline, and plant condensate.”

Targa Announces \$250 Million Mont Belvieu Expansion To Export Propane

Targa Resources Partners LP (NYSE:NGLS) announced that the board of directors of its general partner has approved a \$250-million expansion of its Mont Belvieu complex and its existing import/export marine terminal at Galena Park to provide export capability for 5,000-plus barrels per hour (Bbl/h) of fully refrigerated, low ethane propane. This expansion complements existing LPG import/export capacity and is in addition to projects that

are under way to improve the export refrigeration and loading rates for HD-5 propane and butane.

The approved propane export project will add a propane de-ethanizer, additional salt dome storage at Mont Belvieu, refrigeration, and other equipment required to load 5,000-plus Bbl/h of fully refrigerated, low ethane propane for export at the Galena Park marine terminal. This expansion will allow the part-

nership to load three to four VLGC (very large gas carrier) class ships per month and is in addition to its existing capabilities to handle multiple MGC (medium gas carrier) export cargos of HD-5 grade propane, imports/exports of LPGs and petrochemicals and other spot ship and barge business. The Partnership's Galena Park marine terminal is one of only two LPG import/export terminals that operate on the Houston Ship Channel and

is integrated with its NGL fractionation and storage operations at Mont Belvieu through an existing pipeline network. The expansion project is expected to be operational in the third quarter of 2013.

“We are excited to announce that we are proceeding to build this world class propane export capability at our Galena Park marine terminal,” said Rene Joyce, chief executive of the partnership’s gen-

eral partner and of Targa Resources Corp. (NYSE:TRGP). “This expansion complements our substantial and growing operations at Mont Belvieu and integrated NGL logistics business in response to strong customer interest for export capacity. Our 100,000 Bbl/d Train 4 fractionation expansion at CBF remains on track for start up in early 2013, which will bring the Partnership’s total gross

fractionation capacity along the Texas and Louisiana Gulf Coast to 593,000 Bbl/d. With the export expansion project at Galena Park, our recently announced slate of organic growth projects totals over \$850 million, and we are actively developing additional projects across all of the partnership’s businesses.”

Sasol Unveils U.S. GTL Project Plan In Louisiana

Sasol on September 13 revealed that it’s proposing a gas-to-liquids (GTL) project in Louisiana, estimated to cost as much as US\$10 billion and produce up to 96,000 barrels per day of Fischer-Tropsch (FT) liquids including diesel, kero/jet, naphtha and specialties.

The South African-based FT specialist “will embark on a feasibility study to evaluate the viability of a GTL venture in Calcasieu Parish, La., over the next 18 months. The feasibility study will consider two options of a two million-ton-per-annum (mtpa) and a four-mtpa facility,” according to Sasol.

The plant would tap years of learnings from Sasol’s current GTL plant in Qatar, which employs Sasol’s novel slurry-phase FT scheme (see photo).

In a separate but related press announcement, Louisiana Gov. Bobby Jindahl (R) stated that “if all proceeds as planned, construction [on the Sasol GTL plant] is expected to start in 2013, and the complex would be built in two phases that upon completion in 2018 would process approximately 4.0 million tons of products per year, with a maximum capacity of 96,000 barrels-per-day.”

What’s more, “at full production capacity, the facility would consume approximately 305 billion standard cubic feet of natural gas per year; which would represent roughly \$1.3 billion to \$1.5 bil-

lion per year in natural gas purchases at current prices, and accordingly, Sasol’s proposed GTL complex would provide a huge new source of demand for the Haynesville Shale and other natural gas plays in Louisiana,” he said.

In an interview with Hart’s Gasification News, Sasol spokesperson Nothemba Noruwana responded to several questions about this project.

Gasification News: Roughly what proportions of various FT products would come from this plant?

Noruwana: Sasol is evaluating the construction of a approximately two million or four million tons per annum facility which will produce high-quality liquid products including GTL diesel, GTL kerosene for jet fuel blending, GTL naphtha, liquefied petroleum gas (LPG), and other chemical feedstocks. The optimal product slate will be investigated during the feasibility phase.

Gasification News: Does the economic feasibility of this proposed plant depend upon certain fiscal incentives from the state of Louisiana or the US government?

Noruwana: Sasol has a proud history in the state of Louisiana through its operations in Lake Charles. Sasol is grateful for the support it has enjoyed from the local and state of governments of Louisiana over many years and hope to build on our relationship in the years to come

and so doing contribute to the well-being of the people of Louisiana. Sasol and the state of Louisiana have commenced discussions regarding mutual cooperation in the establishment of the GTL facility in Louisiana, which will continue during the feasibility phase.

Gasification News: Is there a provision for capturing and storing (or recycling) of the byproduct carbon-dioxide emissions (CO₂) from this plant, if in future the US decides to impose CO₂ regulation/legislation on these types of facilities? If so, then is there a customer in mind for

KEY NORTH AMERICAN HUB PRICES	
2:30 PM CST / SEPTEMBER 21, 2011	
Gas Hub Name	Current Price
Carthage, TX	3.66
Katy Hub, TX	3.72
Waha Hub, TX	3.66
Henry Hub, LA	3.79
Perryville, LA	3.70
Houston Ship Channel	3.72
Agua Dulce TX	4.67
Opal Hub, Wyo.	3.67
Blance Hub, NM	3.63
Cheyenne Hub, Wyo.	3.63
Chicago Hub	3.88
Ellisburg NE Hub	4.38
New York Hub	4.00
AECO , Alberta	3.59

Source: Bloomberg

the CO₂, such as an enhanced oil recovery (EOR) operator, or a methanol or urea producer?

Noruwana: We are evaluating carbon capture and storage technology as part of the design and engineering phase of the project.

'Cost-Efficient' Scheme "GTL fuels are an important part of the energy mix because they can advance energy independence in a way that is both cost-efficient and environmentally friendly," Sasol managing director Ernst Oberholster said at a press conference announcing the project.

"This is the second 'first-of-a-kind' announced by Sasol in the U.S. in less than a year: In December 2010, Sasol announced the world's first ethylene tetramerization unit, also to be built in Calcasieu Parish."

The announcement followed by one day Sasol's revelation that its proposed China coal-to-liquids (CTL) project in China has stalled.

That revelation came in Sasol's fiscal-year 2011 financial report for the period ending June 30. In fiscal-year 2011, Sasol's operating profits rose 25% compared with fiscal-year 2010, thanks not only to cost-control measures but also because of relatively higher crude-oil prices, according to the company.

"Operating profit was positively impacted by higher average crude oil prices (average dated Brent was US\$96.48 per barrel (bbl) in 2011 compared with US\$74.37/bbl in 2010) and higher chemical product prices," according to the company.

"The benefits of the higher average crude oil and chemical product prices were partially offset by an 8% stronger average rand/U.S. dollar exchange rate (R7.01/US\$1 in 2011 compared with R7.59/US\$1 in 2010). Overall, group production volumes improved marginally from the prior year, despite Sasol Synfuels' major planned maintenance out-

age. Group cash fixed costs for the year were contained within inflation, excluding once-off charges and growth costs."

The Sasol Synfuels International unit posted a fiscal-year 2011 operating profit of R1.2 billion (US\$162 million) versus R131 million (US\$17.6 million) in fiscal-year 2010.

"The operating profit in the current year was negatively impacted by once-off charges totaling R1.1 billion [US\$148 million] versus a R46 million [US\$6.2 million] credit" in fiscal-year 2010, according to the company.

Once-off charges included payment of antitrust administrative penalties of R112 million [US\$15 million], plus R123 million (US\$16.6 million) for impairment of Sasol's investment in the Escravos, Nigeria, gas-to-liquids (EGTL) project.

During the fiscal year, Sasol pointed out that it made progress or else suffered setbacks on several projects that potentially could involve its GTL or its CTL expertise:

- Acquisition of a 50% stake in the Farrell Creek shale gas assets of Talisman Energy in the Montney Basin, British Columbia, Canada, followed by another acquisition of a 50% stake in Talisman's "Cypress A" shale gas assets. These deals triggered "commencement of a feasibility study to determine the technical and commercial viability of a GTL plant in western Canada," according to Sasol;
- Expansion of gas exploration and appraisal activities in Mozambique, Australia and Papua New Guinea;
- Completion of a feasibility study for the Uzbekistan GTL plant. "The decision to proceed to front-end engineering and design (FEED) will be taken in the near term and is dependent upon certain commercial conditions," according to Sasol;
- Pullback on the proposed coal-to-liquids (CTL) project with Shenhua

in China. "Given the delay in the approval from the Chinese government for our CTL project in China, we are developing other investment strategies and growth opportunities, both in South Africa and abroad. We have reallocated planned project funding for the China CTL project and redeployed staff to other projects. We remain committed to growing our other businesses in China," according to Sasol.

A separate report by Creamer Engineering News quoted Sasol CEO David Constable as saying that the stalled China project has already cost the company some \$120 million.

Sasol's proposed "Mafutha" CTL project in South Africa is likewise stalled, pending government approvals and some scheme that would capture the resulting carbon-dioxide emissions;

- Near-completion of a pre-feasibility study for a proposed CTL project in India. "As the last phase of the study, a drilling program is being undertaken to verify the coal assumptions," according to the company. "Sasol Mining is nearing completion of the Thubelisha shaft, which will supply both the export market and sustain Sasol Synfuels' production. The shaft is expected to be completed in 2012. Construction on the Impumelelo colliery remains on track for completion in 2014;" and
- Construction on the wax production facility in Sasolburg, South Africa, "continues to progress according to plan."

As for its domestic CTL operations in South Africa, Sasol Synfuels' operating profit increased by 15% in fiscal-year 2011 compared with fiscal-year 2010.

"Production volumes were 4% lower than the prior year primarily due to the largest planned maintenance outage in

Sasol Synfuels' history," according to the company.

Despite that, "operating profits were enhanced by higher average oil prices. The open cycle gas turbines were successfully commissioned during July 2010, making available an additional 200 megawatts of electricity generation capacity for the Sasol Synfuels operations, thereby significantly reducing the impact of above inflation electricity price increases on Sasol Synfuels' unit cost.

Sasol Synfuels' cash fixed cost per unit increase was contained to 4%.

"We anticipate that Sasol Synfuels' production volumes will improve to between 7.2 million tons and 7.3 million tons in 2012 following the major planned maintenance outage which was undertaken in September 2010."

As for the Sasol Synfuels International (SSI) unit, "operating profit increased significantly" mainly because of "increased production at the Oryx gas-to-liquids

(GTL) plant in Qatar and higher product prices derived from crude oil prices, which were partially offset by a stronger rand/US dollar exchange rate. The Oryx GTL plant is producing well and achieved an 82% utilization rate for the year."

Oryx GTL "is expected to perform at its planned operating rate of 80% to 90% of design capacity" in fiscal 2012, according to the company.

— Jack Peckham

Devon Energy's.. (continued from page 1)

leases. This philosophy has seen the company focusing on oil and liquids-rich plays in 2011 with 90% of its capital budget directed to such production.

"We're also allocating capital to evaluate the potential for several emerging liquids opportunities in the Permian Basin, Canada, the Rockies, and in some new organically generated plays," he said.

The growth from these plays has Devon directing more funds to its midstream segment to handle the increased production. Though the Barnett isn't recognized as the "it" play any longer, Richels noted that has been a major focal point for the company.

"Our largest development asset is the Barnett shale...We have a terrific position with low average entry cost and a

low royalty burden. This play just continues to get better and better. We produced a lot of gas and liquids out of this area over the last few years and we still expect to recover an additional 18 Tcf net to Devon over the life of the field.

"This is an area supported by our large midstream operation. We're expanding our Bridgeport plant from 650 million cubic feet per day (MMcf/d) by another 140 MMcf/d to handle our growth in liquids production from the region. That will give us a total capacity in the area of about 890 MMcf/d of inlet capacity with about 65,000 barrels per day of liquids production," he said.

Although the Barnett is arguably the company's most important play, its fastest growing play is the Cana-Woodford.

"We were the first company into this play and hold over 50% of the best acreage," Richels said. This acreage is high in liquids content with production in Q2 2011 reaching 190 million cubic feet equivalent per day (MMcfe/d), which is expected to increase to 275 MMcfe/d in Q3 2011.

Devon is also anticipating strong midstream growth in the Woodford with a \$125-million expansion of its 200 MMcf/d processing plant in the region. This expansion will add 150 MMcf/d of capacity to the facility when it is completed by year's end.

— Frank Nieto

NEWS & TRENDS

Williams To Expand Olefins Production At Geismar

Williams (NYSE: WMB) approved an expansion of its Geismar olefins production facility. The expansion will increase the facility's ethylene production capacity by 600 million pounds per year to a new annual capacity of 1.95 billion pounds. It is expected to be placed into service in the third quarter of 2013.

"The shale gas revolution in the United States, coupled with continued strong

crude oil prices, has given U.S.-based ethylene manufacturing a tremendous cost advantage over many other supply regions," said Rory Miller, president of Williams' midstream business. "The results are a revitalized North American petrochemical business and a U.S. ethylene market short of supply.

"This expansion will serve petrochemical companies by adding 600 million

pounds per year of new ethylene supply to the market," Miller said. "It will also add to Williams' growing large-scale infrastructure serving the petrochemical industry in the Gulf Coast region and help balance our lengthening ethane position."

The expected capital spending on the Geismar expansion is a range of \$350- to \$400 million in 2012-13. These amounts will be included in the company's 2012-

13 capital expenditure guidance to be released in conjunction with third-quarter 2011 financial results.

Located south of Baton Rouge, La., the Geismar facility is a light-end natu-

ral gas liquid (NGL) cracker with current volumes of 37,000 barrels per day (bpd) of ethane and 3,000 bpd of propane and annual production of 1.35 billion pounds of ethylene. The facility also produces

propylene, butadiene and debutanized aromatic concentrate (DAC). Williams owns 83.3% of the Geismar facility and operates the plant.

Propane Exports.. (continued from page 1)

to generate revenue in every step of the value chain and we continue to add to that value chain. We added \$1.7 billion of completed projects last year and we have more than \$6 billion of projects under construction today. We think that enhances our ability to focus on flow assurance to market choices for the producer and source diversity and flexibility for the consumer," he said.

Teague said that this growth is generated from providing support for the development of shale plays, be they natural gas, NGLs or crude oil. This growth is primarily focused on the Haynesville, Eagle Ford, Rockies, Permian, Avalon Bone Springs, and the Marcellus. Further growth opportunities are rising from the petrochemical market converting from naphtha-based cracking to ethane-based cracking.

In order to ensure it has a presence in the most active shale plays, both today and tomorrow, Enterprise has a fundamentals group that evaluates every shale play to help determine opportunities in each and what the best course of action for the company to penetrate them is. "We are not going to build or acquire anything that doesn't fit what we already have," he said.

This strategy resulted in the company entering the Haynesville through an acquisition of a DeSoto Parish gathering system less than two years ago. This was followed by the company building two more systems in the play to create a contiguous system that covers roughly 500,000 acres. Half of the rigs currently operating in the Haynesville are sur-

rounding this footprint, which has the capacity to deliver 1 billion cubic feet per day (Bcf/d) into its 240-mile Haynesville extension pipeline. This pipeline is expected to begin flowing this month and will cross 12 interstate pipelines.

Enterprise was already strong in the Eagle Ford region as it had seven cryogenic processing plants and multiple gathering assets in the play. The company is enhancing these assets through the addition of a wet gas pipeline that will run through the heart of the shale.

"We think there is not enough appetite in south Texas to accommodate the gas, so you have to get it out. We are also building a cryo plant in Yoakum. We approved it as a 600 million cubic feet per day (MMcf/d) cryo plant, and we have already approved a 300 MMcf/d expansion," Teague said. He added that the plant's capacity will be full on day one and be able to provide customers with access to the entire ethylene industry through access to eight pipelines rather than a single cracker or pipeline.

The company is not yet in the Marcellus and this is likely to remain the case, because the location doesn't really fit the company's asset base as far as gathering and processing go, according to Teague. "What we already have doesn't fit in the Marcellus, so that's why you haven't seen us up there trying to do gathering and processing deals and you won't."

However, the company is exploring a solution to the region's ethane problem by building a pipeline to ship ethane from the region to the Gulf Coast. "We

are going to loop 600 miles of our TE Products Pipeline with 16-inch pipe from Beaumont to New York and Pennsylvania. We are going to reverse the existing 16-inch pipeline to Beaumont, build a new 16-inch pipeline from Beaumont to Mont Belvieu. It will have initial capacity of 125,000 b/d and an ultimate capacity of 175,000 b/d," Teague said. Should this project be brought into development, it could open up opportunities for the company in the Marcellus since they will have established themselves in the market.

The company will continue to explore new projects to build infrastructure to support ethylene producers' conversions from naphtha cracking to ethane cracking. "We have the opportunity to build an ethane header system that literally runs from Corpus Christi, Texas to the Mississippi River. Seventy-five percent of that pipe is in the ground already; we're just going to do some service switching," he said. As part of this strategy the company intends on building a 16-inch pipeline from Mont Belvieu to Lake Charles, La., so that any ethylene plant can tie into the header system.

In addition to the huge benefits posed from the influx of ethane that has made it more preferred than naphtha, Enterprise is also benefitting from increased demand for propane. Its propane export terminals have been full since mid-2009, will export 40 million barrels in 2011, are sold out for 2012 and close to that for 2013. Such usage is causing the company to expand its export terminals by 50%.

– Frank Nieto

BFX Process, Southern Union Gas Services Ink Plant Refurbishing Deal

BFX Process LLC announced a contract with Fort Worth-based Southern Union Gas Services (SUGS) to supply a 350-GPM amine treating plant. The plant will be completed in October 2011 for installa-

tion in southeastern New Mexico, a part of the energy-rich Permian basin.

“Our team is well prepared to deliver a fully restored and updated treating plant which will enable SUGS to continue

providing competitive services to its customers,” stated J.W. Varner, CEO of BFX Equity Partners, LLC (parent company of BFX Process, LLC).

Apache To Acquire ExxonMobil's Beryl Field, Other UK North Sea Assets For \$1.75B

Apache Corp. (NYSE, Nasdaq: APA) announced that its Apache North Sea Limited subsidiary has agreed to acquire Exxon Mobil Corp.'s (NYSE: XOM) Mobil North Sea LLC assets – including the Beryl field and related properties – for \$1.75 billion.

The fields have current net production of approximately 19,000 barrels of oil and natural gas liquids and 58 million cubic feet (MMcf) of natural gas per day. At year-end 2010, estimated proved reserves totaled 68 million barrels of oil equivalent.

The transaction, with a planned close at year-end 2011, is expected to increase Apache's North Sea production by 54% and proved reserves by 44 percent.

The assets to be acquired include:

- Operated interests in the Beryl, Nevis, Ness, Nevis South, Skene and Buckland fields;
- Operated interest in the Beryl/Brae gas pipeline and the SAGE gas plant;
- Non-operated interests in the Macclure, Scott and Telford fields; and

- Benbecula (West of Shetlands) exploration acreage.

“These major legacy assets will expand Apache's presence in the North Sea. They bring us significant remaining life, high production efficiency and quality reservoirs – the best North Sea assets we've evaluated since acquiring the Forties Field in 2003,” said G. Steven Farris, Apache's chairman and chief executive officer. “There is a portfolio of low-risk exploitation projects, and we believe the complex structural setting holds reserve upside.

“Over the past eight years, Apache has demonstrated the ability to increase the efficiency of mature North Sea assets, find new reserves to extend field life, and operate in a safe and environmentally responsible manner,” Farris said.

Since acquiring the Forties Field in 2003, Apache has drilled about 100 development wells, invested \$3.2 billion, produced approximately 161 MMboe – more than the proved reserves at the time of the acquisition – and added an estimated

171 MMboe in new reserves. Second-quarter 2011 net production from Forties averaged 56,985 barrels of oil per day, up from approximately 33,000 barrels per day in the second quarter of 2003, after Apache assumed operations.

Production from the Mobil North Sea LLC fields will add to the percentage of Apache's current output that is indexed to the premium Brent crude oil benchmark price.

Apache will take on the ExxonMobil employees currently supporting the former Mobil North Sea LLC assets. “We look forward to a new period of growth with a strong, combined team,” said James L. House, region vice president and managing director of Apache North Sea Limited.

The transaction is subject to regulatory approvals and preferential rights. Apache intends to fund the acquisition with cash.

“We appreciate the opportunity to work with the ExxonMobil team to hammer out this transaction,” Farris said.

Arkansas Agency Unanimously Bans Frac Fluid Disposal Wells

In the wake of a series of mini-earthquakes earlier in 2011, the Arkansas Oil and Gas Commission voted unanimously to ban disposal wells in the state for fracturing fluids.

As part of the decision, one disposal well must be shut down. The ban prohib-

its drilling any new disposal wells within a 1,150-square-mile area.

During the investigation, the commission was able to trace the earthquakes to four disposal wells that were on a fault line. After operations were suspended at half of these wells, the earthquakes subsided.

The decision does not affect drilling operations in the area—only high-pressure waste fluid injections.

Lukoil Announces \$3B Petrochemical Complex

Lukoil announced plans to build the \$3 billion Stavrolen petrochemical complex in Budyonnovsk, Stavropol Territory

next month and it is expected to come into service in 2015-2016. The facility will process gas from the North Caspian

Sea with 40% of production geared to be exported. Initial capacity will be 5 billion cubic meters of gas yearly.

Provident, NOVA Chemicals Sign Long-Term Storage Lease Agreements

Provident Energy Ltd. entered agreements with NOVA Chemicals Corp. for the lease of two underground storage caverns currently under development at the Provident Redwater Facility, along with associated facilities to be constructed.

“Our Redwater Facility is a key growth platform for Provident and we are excited to be providing NOVA Chemicals with these new storage services,” said Doug Haughey, Provident’s chief executive. “Our capital spending is focused on fee-for-service business like this.”

The total amount of storage leased under these long-term agreements is approximately one million barrels with staged on-stream dates of Q3 2012 and Q1 2013. The total capital cost of the caverns, and associated facilities, is anticipated to be approximately \$100 million. A portion of this capital was already included in Provident’s expanded 2011 capital program and an estimated \$77 million remains to be spent in 2012, approximately half of which is incremental to Provident’s previously indicated

future growth capital estimate of \$70 million per year. Both caverns and the associated facilities have been leased on a cost-of-service basis for the exclusive use of NOVA Chemicals.

These caverns are two of several Provident plans to develop to meet the strong market demand for underground hydrocarbon storage in the greater Fort Saskatchewan area.

PIPELINES & TECHNOLOGY

High Point Gas Transmission To Acquire Southern Natural Assets

High Point Gas Transmission LLC, a partnership between an affiliate of ArcLight Capital Partners LLC and High Point Energy LLC, entered into a purchase and sale agreement with Southern Natural Gas Company LLC to acquire certain natural gas pipeline assets located in SNG’s supply area south of the Toca compressor station on its east leg.

The proposed sale encompasses approximately 621 miles of onshore and offshore pipeline ranging from 4-inches

to 26-inches in water depths of up to 1,000 feet, including four platforms, approximately 68 active receipt points and 25 active delivery points, and certain related pig launching and receiving equipment, machinery, electronic flow measurement and communications equipment, rights of way, easements, permits and line pack. The sale is subject to FERC approval and certain other customary closing conditions, and is expected to close in 2012.

ArcLight and High Point Energy have agreed to contribute certain other related pipeline assets to High Point Gas Transmission and intend to grow the business by partnering with local producers to develop and maintain the infrastructure and producer services needed to grow Gulf Coast oil and gas production and completing targeted acquisitions and capital projects.

Shell Considers Expansion Of Gulf Coast Pipeline

Shell Pipeline Co. LP is considering building a new pipeline segment to move crude from St. James, Louisiana, to the Golden Triangle area of Texas (Westward Ho) thus expanding the system. Shell Pipeline’s continued investment in Westward Ho will largely depend upon a favorable response to the Shell Pipeline’s

Houma-to-Houston pipeline (Ho-Ho) reversal solicitation of interest that closes October 17, 2011.

Shell Pipeline’s Westward Ho pipeline would create an additional market outlet for the anticipated increase in domestic crude oil production from the deepwater U.S. Gulf of Mexico. For U.S. Gulf of Mex-

ico refiners, this project would enhance access to both the domestic production and the foreign crudes available at St. James. Further, the Westward Ho Pipeline project would complement the new storage and logistics infrastructure that is currently being built in the St. James and Clovelly, La, areas.

The Westward Ho Pipeline would consist of a new pipeline build to connect the Louisiana crude markets with the Texas markets. The Westward Ho

Pipeline would be a batched system and could enable the distribution of approximately 900,000 bbls per day of crude across the region depending upon crudes

types shipped. Subject to customer commitments and regulatory approval, the Westward Ho Pipeline is expected to begin service by early 2015.

Chevron Repairs West Texas LPG Pipeline System

Chevron Corp. announced full operations have been restored on its West Texas LPG pipeline system following the repair of a leak on its No. 1 line in Howard County, Texas.

The leak was connected with a September 8 fire on the pipeline that caused volumes being shipped in portions of the system to be reduced by as much as 25%.

The system has a capacity to transport 230,000 barrels per day of raw NGLs from New Mexico and West Texas to Mont Belvieu for fractionation and storage.

Penn Virginia, Aqua America To Build, Operate Marcellus Water Pipeline

Aqua America Inc. (NYSE: WTR) and Penn Virginia Resource Partners, LP (NYSE: PVR) announced that certain of their operating subsidiaries have formed a joint venture, Aqua — PVR Water Services LLC, to construct and operate a private pipeline system to supply fresh water to natural gas producers drilling in the Marcellus shale in north-central Pennsylvania. The 12-inch diameter steel pipeline will largely parallel the trunkline of PVR's gathering system in Lycoming County and will share PVR's existing rights-of-way.

and limited water delivery is expected before year-end. The entire 18-mile long first segment of the system is currently anticipated to be fully completed and begin regular operation during the first quarter of 2012.

of Pennsylvania. Critical because the energy needs of the country must be developed domestically and Pennsylvania can be that provider. Challenging because it must be done in a manner that protects and manages our most precious resource, water. This project is the first that prudently enables the development of the Marcellus while helping to protect our water sheds and manage our supplies. Pumping water through pipe, as opposed to trucking water, reduces road traffic and damage that can result in runoff that can negatively impact streams in this sensitive part of the state. Managing the supply from confirmed reliable sources reduces the potential for over withdrawal from those same streams."

PVR is constructing the fresh water pipeline and handling negotiation of water pipeline capacity contracts with producers. Aqua will operate the system when completed and handle water intake supply arrangements. Aqua America and PVR each anticipate investing approximately \$12 million for construction of the first segment of the project. The joint venture has entered into an agreement with Range Resources - Appalachia, LLC a wholly owned subsidiary of Range Resources Corp. (NYSE: RRC) to supply fresh water to three of Range's water impoundments, and negotiations with other area producers for supply agreements are on-going.

William H. Shea, Jr., chief executive officer of PVR, said, "We are very excited to join with Aqua America in building a private water pipeline to supply Marcellus producers. We are also pleased to welcome Range Resources as an anchor customer on the pipeline. We believe this project is a 'win-win' solution that offers tangible benefits to both the contracting producers and the local communities in which we operate. The pipeline will provide contracting producers with a more reliable fresh water source at a lower delivered cost. By reducing the number of trucks operating on area highways, area residents will benefit from reduced traffic congestion, noise and delays."

Nicholas DeBenedictis, chairman and CEO of Aqua America, said, "Marcellus shale offers a critical and challenging opportunity for the State

The joint venture has commenced construction of the fresh water pipeline,

RESIN PRICES – MARKET UPDATE – SEPTEMBER 23, 2011					
TOTAL OFFERS: 17,258,364 lbs		SPOT		CONTRACT	
Resin	Total lbs	Low	High	Bid	Offer
HDPE - Blow Mold	0.61	0.65	0.96	0.63	0.77
LDPE - Inj	0.69	0.73	0.77	0.71	0.80
PP Homopolymer - Inj	0.82	0.86	0.77	0.78	0.90
HDPE - Inj	0.65	0.69	0.91	0.67	0.75
PP Copolymer - Inj	0.84	0.88	0.78	0.75	0.93
LLDPE - Film	0.64	0.68	0.80	0.71	0.78
LLDPE - Inj	0.67	0.71	0.82	0.71	0.77
GPPS	0.85	0.90	0.77	0.87	0.91
HIPS	0.94	0.99	0.74	0.98	0.99
HMWPE - Film	0.66	0.70	0.91	0.73	0.73
LDPE - Film	0.72	0.76	0.99	0.78	0.79

Source: Plastics Exchange – www.theplasticsexchange.com

NGL PRICES

Drop In Crude Causes C₅₊ Prices To Fall

Weak crude prices resulted in C₅₊ prices falling at Mont Belvieu and Conway the week of Sept. 14, although the remaining NGL prices generally held firm at both hubs due to strong fundamentals.

In particular, ethane prices experienced significant improvements with the Mont Belvieu price increasing 10% to 79¢ per gallon (/gal) and the Conway price increasing 9% to 46¢/gal as demand from ethylene crackers remained high because of its cost advantage over naphtha and low inventory levels.

In addition, prices were supported by the return to operation of ChevronPhillips' West Texas LPG pipeline, and Enterprise Products Partners' Chaparral pipeline is now operating at approximately 75% capacity.

The Mont Belvieu price was the highest at the hub since it was 82¢/gal the week of July 27 while the Conway price was the hub's highest price since the week of Aug. 3 when it was 48¢/gal.

While the Mont Belvieu C₅₊ price largely held firm by dropping less than 1% to \$2.41/gal, the Conway price dropped 2% to \$2.04/gal. The Mont Belvieu price was the second highest price in the past two months while the Conway price was the second lowest price in the past month.

Propane prices held firm at both hubs the week of Sept. 14 even though inventory levels remained low nationally because export demand wasn't as high as it had been in the past few months. The Mont Belvieu price rose 1% to \$1.60/gal, which was the highest price at Texas since it was slightly higher at \$1.60/gal the week of Sept. 3, 2008. Meanwhile the Conway price dropped slightly to \$1.42/gal, its lowest price since the week of Aug. 3 when it was \$1.41/gal.

Despite lower crude prices, butane and isobutane prices increased at both hubs because of increased demand from refiners. The price of butane rose 1% at Mont Belvieu to \$1.97/gal, which was the highest price since it was \$2.00/gal the week of April 27. The Conway price experienced an even greater price increase at it rose 3% to \$1.77/gal, the highest price since it was \$1.83/gal the week of April 27.

NGL PRICES						
Mont Belvieu	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Sept. 14 - 20 '11	78.61	159.90	196.74	220.92	241.44	\$63.74
Sept. 7 - 13 '11	71.70	158.74	195.38	212.94	241.68	\$62.27
Aug. 31 - Sept. 6 '11	70.19	156.15	191.77	206.70	240.13	\$61.27
Aug. 24 - 30 '11	68.78	154.14	189.36	208.14	233.78	\$60.30
August '11	71.41	153.03	185.82	205.99	229.93	\$60.06
July '11	79.50	152.47	187.05	203.97	246.50	\$62.38
2nd Qtr '11	75.14	149.59	186.75	202.07	248.23	\$61.42
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
Sept. 15 - 21, '10	49.24	113.88	143.50	148.00	175.88	\$44.55
Conway, Group 140	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Sept. 14 - 20 '11	45.60	142.02	177.02	215.50	203.96	\$53.27
Sept. 7 - 13 '11	42.00	142.50	172.62	208.85	208.50	\$52.63
Aug. 31 - Sept. 6 '11	37.60	143.48	164.53	204.00	210.10	\$51.59
Aug. 24 - 30 '11	36.32	144.76	161.44	190.00	204.20	\$50.59
August '11	42.21	143.61	161.04	194.27	202.22	\$51.38
July '11	55.57	143.17	169.35	193.79	227.52	\$55.66
2nd Qtr '11	52.63	139.38	170.76	192.47	236.00	\$55.34
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
Sept. 15 - 21, '10	37.60	110.62	144.23	151.75	170.00	\$42.49

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

For the second straight week, Conway isobutane prices were higher than C₅₊ prices. This was the first time since the week of March 18 and 25, 2009, that this occurred at the hub. The isobutane price increased 3% to \$2.16/gal, the highest price at the hub since it was \$2.26/gal the week of July 16. The Mont Belvieu price rose 4% to \$2.21/gal, the highest price since it was \$2.34/gal the week of July 16.

– Frank Nieto

FRAC SPREAD

Margins Continue To Improve As Gas Prices Drop

Stable NGL prices combined with decreases in natural gas feedstock prices to push frac spread margins up in nearly all cases at both Mont Belvieu and Conway the week of Sept. 23.

Conway natural gas prices were down 3% to \$3.76 per million Btu (/MMBtu) while the Mont Belvieu price dropped 2% to \$3.84/MMBtu.

“As hurricanes slipped from the market’s attention, traders were left to ponder other news. Temperatures, which had been supportive most of the summer, have turned cooler in the East, pulling overall U.S. air-conditioning demand into bearish territory. This suggests that storage inventories will have some strong additions in the coming weeks,” according to Barclays Capital’s Natural Gas Weekly Kaleidoscope for the week of Sept. 20.

Such prices meant that the lone margin to fall this week was Conway C₅₊, which was down 2% from last week because of a corresponding 2% price drop at the hub. Only Mont Belvieu C₅₊ failed to improve its margin by at least 1% at either Mont Belvieu and Conway.

The largest gain in margin at both hubs was for ethane, which rose 28% at Conway and 16% at Mont Belvieu because of the strong price performances at both hubs. The second-largest gains were posted by isobutane, which rose 5% at both locations.

The theoretical NGL barrel price rose 2% to \$63.74 per barrel (/bbl) with a 4%

gain in margin to \$49.72/bbl at Mont Belvieu. The Conway theoretical barrel price improved 1% to \$53.27/bbl with a 3% gain in margin to \$39.53/bbl.

The most profitable NGL to make remained split at both hubs for the second straight week as isobutane maintained a higher frac spread than C₅₊ at Conway at \$1.78 per gallon (/gal) compared to C₅₊’s frac spread of \$1.62/gal. At Mont Belvieu the situation was reversed with C₅₊ having a frac spread of \$1.99/gal while isobutane’s margin was \$1.83/gal. The remaining NGLs went in the same order at both hubs with butane having a margin of \$1.38/gal at Conway and \$1.57/gal at Mont Belvieu; propane at \$1.08/gal at Conway and \$1.25/gal at Mont Belvieu; and ethane at 21¢/gal at Conway and 53¢/gal at Mont Belvieu.

Natural gas in storage for the week of Sept. 16, the most recent data available from the Energy Information Administration, increased 89 billion cubic feet to 3.201 trillion cubic feet (Tcf) from 3.112 Tcf. This was 4% lower than the storage level of 3.330 Tcf posted last year at the same time and 1% lower than the five-year average of 3.236 Tcf.

Storage levels could benefit slightly in the coming week as the National Weather Service’s forecast for the week of Sept. 28 includes warmer than normal temperatures for much of the country. This warm

front is expected to extend from the West Coast, through the Midwest and into the Northeast. The Gulf Coast and much of the Southeast can expect normal temperatures for late Sept.

– Frank Nieto

Current Frac Spread (Cents/Gal)				
September 23, 2011	Conway	Change from Start of Week	Mont Belvieu	Start of Week
Ethane	45.60		78.61	
Shrink	24.93		25.46	
Margin	20.67	27.53%	53.15	16.11%
Propane	142.02		159.90	
Shrink	34.44		35.17	
Margin	107.58	0.67%	124.73	1.47%
Normal Butane	177.02		196.74	
Shrink	38.99		39.82	
Margin	138.03	4.35%	156.92	1.35%
Iso-Butane	215.50		220.92	
Shrink	37.45		38.25	
Margin	178.05	4.67%	182.67	4.99%
Pentane+	203.96		241.44	
Shrink	41.70		42.59	
Margin	162.26	-1.87%	198.85	0.27%
NGL \$/Bbl	53.27	1.20%	63.74	2.36%
Shrink	13.74		14.03	
Margin	39.53	2.88%	49.72	3.60%
Gas (\$/mmBtu)	3.76	-3.34%	3.84	-1.79%
Gross Bbl Margin (in cents/gal)	91.46	2.87%	116.40	3.66%
NGL Value in \$/mmBtu				
Ethane	2.51	8.57%	4.33	9.64%
Propane	4.93	-0.34%	5.55	0.73%
Normal Butane	1.91	2.55%	2.12	0.70%
Iso-Butane	1.34	3.18%	1.38	3.75%
Pentane+	2.63	-2.18%	3.11	-0.10%
Total Barrel Value in \$/mmBtu	13.32	1.62%	16.49	3.01%
Margin	9.56	3.71%	12.65	4.56%

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

SNAPSHOT

Florida Gas Transmission: Largest Gas Pipeline In Florida

The Florida Gas Transmission Pipeline is one of the largest pipelines transporting natural gas into the Southeast with a capacity of 2.3 billion cubic feet per day (Bcf/d). This makes it the largest pipeline in the state of Florida. The Southeast is growing in importance as a consumer of natural gas as it converts more of its coal-fired power plants to natural gas.

The system is jointly owned by Southern Union Co.'s Citrus Corp. and El Paso Corp. and transports gas from the Gulf Coast states of Texas, Mississippi, Alabama and Louisiana into Florida.

The pipeline runs 4,869 miles and has 26 compressor stations. It has more

than 250 delivery points and access to more than 50 natural gas-fired power plants. There is no storage associated with the system.

According to Hart Energy's Mapping & Data Services, the top transport customers on the system are Florida Power & Light Co. at 280,000 dekatherms per day (Dth/d) and Florida Gas Utility at 168,000 Dth/d. These were followed by Florida Gas & Light Co. again at 145,000 Dth/d; Tampa Electric Co. at 140,000 Dth/d; Florida Gas Utility at 122,000 Dth/d; Orlando Utilities Commission at 104,000 Dth/d; Progress Energy Florida Inc. at 88,000 Dth/d; Southern Company Services Inc.

at 87,000 Dth/d; Powersouth Energy Cooperative at 80,000 Dth/d; and the City of Tallahassee at 52,000 Dth/d.

The top receipt points on the Florida Gas Transmission are CS #11 Mount Vernon Zone 3 and CS #12 West Receipts Plus Fuel. The top delivery points on the system are All Market Area Delivery Points-Fwd and Market East of Compressor 12-Fwd.

– Frank Nieto

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