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FEATURE

House Republicans Consider Adding Keystone XL Sweetener To Payroll Tax Cut Extension

Republicans in the House of Representatives are not giving up on gaining approval for TransCanada's Keystone XL pipeline prior to 2013. On Dec. 2, Rep. Lee Terry (R-Neb.) introduced a bill that would extend payroll tax cuts and unemployment benefits that includes a provision that would place the decision on the pipeline in the hands of the Federal Energy Regulatory Commission (FERC) rather than the State Department.

Following an environmental assessment by officials in Nebraska, this provision would provide FERC with 30 days to issue a permit for Keystone XL. In addition, FERC would have the same permitting power on any other new pipeline routes for the project proposed by TransCanada and lawmakers in Nebraska that would seek to avoid environmentally sensitive regions in the state.

Although the provision is not directly related to the payroll tax cuts, it is becoming increasingly likely that the payroll tax extensions will be passed through an omnibus bill in order to secure the full support



of House Republicans, who have expressed misgivings over the tax cut extensions and legislation designed to speed up Keystone XL would help garner their support.

John Kneiss, director of government affairs and U.S. policy at Hart Energy, said that the diverse makeup of House Republicans has lessened the power of the Speaker of the House John Boehner (R-Ohio) and increased the importance of omnibus legislation to ensure passage.

"The Speaker announced that this bill will be part of the unemployment and tax holiday package," Terry said at a news conference. However, Boehner has not made any official

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NGL PRICES

Heavy NGL Prices Continue To Gain Steam

Prices for heavy NGLs one again outperformed their lighter counterparts this week as crude prices continued to hover above \$100 per barrel (/bbl) for most of the week. These high prices helped to push up the NGLs with close relationships with crude.

However, it is doubtful that crude can maintain its current price levels based on statistics released by the Energy Information Administration (EIA) this week. The EIA reported that crude storage increased by 1.3 million barrels to 336.1 million barrels the week of Dec. 2. Analysts had been

anticipating crude storage to drop by 1.25 million barrels

Following this announcement, crude prices began to fall, but remained close to \$100/bbl as *Midstream Monitor* went to press. As crude prices are facing headwinds, isobutane alkylation demand remains high, but this may not be for long as gasoline crack spreads have turned negative.

Nonetheless, isobutane prices continued to show strength the first week of December as the Mont Belvieu price increased 7% to \$2.37 per gallon (/gal) and the Conway price

rose 4% to \$2.21/gal. The Gulf Coast price was the second-highest at the hub since it was \$2.44/gal the week of July 9, 2008. The Mid-Continent price was the second-highest since it was \$2.26/gal the week of July 16, 2008.

These prices ensured that isobutane was the highest valued NGL at either hub despite solid price gains for C₅₊ at both Mont Belvieu and Conway. The Mont Belvieu price increased 2% to \$2.22/gal, its highest price in three weeks, while the Conway price rose 5% to \$2.05/gal, which was its highest price since it was \$2.09/gal the week of Sept. 7.

Conway butane had the largest increase of any NGL at the hub, as it experienced an 8% gain in price. This pushed the price to \$1.70/gal, its highest price in 11 weeks. The Mont Belvieu price rose 6% to \$1.95/gal, which was also its highest price in 11 weeks.

Although ethane prices remain strong, they dropped for the sixth straight week at Mont Belvieu and the third straight week at Conway. The price at Mont Belvieu was down 2% to 80¢/gal, its lowest price since it was 79¢/gal the week of Sept. 14. Conway ethane experienced an even larger price drop as it was down 5% to 32¢/gal, its lowest price since it was 30¢/gal the week of Aug. 18.

The large price differential between Conway and Mont Belvieu is largely because of the extremely low demand level in the Mid-Continent for ethane. Wells Fargo Securities estimates that Conway has the capacity to produce 210,000 barrels per day (b/d) of fractionated ethane, but the region only has 56,000 b/d of demand from two crackers, which means that approximately 154,000 b/d of ethane must be transported out of the region to balance the market. However, there is only 130,000 b/d of purity takeaway capacity out of Conway, which implies that the market is long 24,000 b/d on ethane.

The other light NGL, propane, was essentially flat at both hubs as heating demand has increased, but there are still

NGL PRICES						
Mont Belvieu	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Nov. 30 - Dec. 6 '11	79.56	144.66	194.84	237.40	222.03	\$61.10
Nov. 23 - 29 '11	80.95	145.30	183.35	222.80	217.35	\$60.08
Nov. 16 - 22 '11	84.77	145.98	180.94	217.40	221.45	\$60.76
Nov. 9 - 15 '11	89.68	147.24	180.52	237.53	228.28	\$62.65
November '11	86.59	145.97	181.32	223.10	224.75	\$61.43
October '11	88.04	147.23	179.87	208.39	226.82	\$61.48
3rd Qtr '11	76.03	153.87	188.27	208.52	237.59	\$61.59
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
Dec. 1 - 7 '10	63.49	125.02	170.66	176.96	208.82	\$52.51
Conway, Group 140	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
Nov. 30 - Dec. 6 '11	31.80	129.54	169.96	220.93	205.24	\$49.38
Nov. 23 - 29 '11	34.00	128.85	156.63	212.45	195.33	\$48.06
Nov. 16 - 22 '11	36.60	130.30	152.58	209.26	194.98	\$48.34
Nov. 9 - 15 '11	36.36	130.84	154.72	221.43	197.67	\$48.99
November '11	35.90	130.51	154.92	212.38	194.85	\$48.45
October '11	37.79	136.85	153.16	189.69	194.62	\$48.80
3rd Qtr '11	46.69	143.07	166.30	199.68	210.98	\$53.06
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
Dec. 1 - 7 '10	52.15	120.64	167.22	169.10	199.55	\$49.74

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

supplies necessary to be worked off before the product can start to experience real growth. Mont Belvieu propane decreased slightly to \$1.45/gal while Conway propane was up slightly to \$1.30/gal. – Frank Nieto

FRAC SPREAD

Conway Ethane Could Face Rejection As Margins Fall Again

Frac spread margins largely performed well the week of Nov. 30 as heavy NGLs experienced strong gains in margin. These increases were tempered by decreased margins for ethane at both hubs.

Conway ethane had by far the largest drop in margin, as it was down 24% from the previous week. This left the frac

spread at a level where it is still profitable to make, but just barely, and brings up the possibility of ethane rejection in the Mid-Continent. Mont Belvieu ethane had a smaller drop in margin at 2% and still remains very profitable.

Butane margins had the best performance at both hubs as the Conway

margin improved 10% while the Mont Belvieu margin was up 8% from last week. Isobutane had the second-best performance at Mont Belvieu as the frac spread improved 8%, while C₅₊ had the second-best performance at Conway as it was up 6% from the previous week.

Despite the poor performance of ethane this week, the theoretical NGL barrel price improved at both hubs as the Conway price rose 3% to \$49.38 per barrel (/bbl) with a 3% gain in margin at \$36.60/bbl. The Mont Belvieu barrel showed a 2% gain in both price and margin with the barrel price increasing to \$61.10/bbl and the margin improving to \$48.75/bbl.

The most profitable NGL to make at both hubs remained isobutane at \$1.86 per gallon (/gal) at Conway and \$2.04/gal at Mont Belvieu. This was followed, in order, by C₅₊ at \$1.66/gal at Conway and \$1.85/gal at Mont Belvieu; butane at \$1.34/gal at Conway and \$1.60/gal at Mont Belvieu; propane at 98¢/gal at Conway and \$1.14/gal at Mont Belvieu; and ethane at 9¢/gal at Conway and 57¢/gal at Mont Belvieu.

Natural gas in storage for the week of Dec. 2, the most recent data available from the Energy Information Administration, was 3.831 trillion cubic feet (Tcf), a 20 billion cubic feet drop from the 3.851 Tcf figure reported the previous week. This was 3% greater than the 3.729 Tcf posted last year at the same time and 9% greater than the five-year average of 3.524 Tcf.

Heating demand shouldn't be that strong in the East Coast, according to the National Weather Service's forecast for next week. The forecast anticipates warmer than normal temperatures along the East Coast, especially the Northeast and normal winter temperatures for the Midwest. The West Coast and much of the Southwest are expected to experience colder than normal temperatures.

– Frank Nieto

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

Current Frac Spread (Cents/Gal)				
December 9, 2011	Conway	Change from Start of Week	Mont Belvieu	Start of Week
Ethane	31.80		79.56	
Shrink	23.21		22.41	
Margin	8.60	-23.66%	57.15	-2.26%
Propane	129.54		144.66	
Shrink	32.06		30.96	
Margin	97.48	0.05%	113.70	-0.48%
Normal Butane	169.96		194.84	
Shrink	36.30		35.05	
Margin	133.67	10.41%	159.79	7.82%
Iso-Butane	220.93		237.40	
Shrink	34.86		33.66	
Margin	186.07	4.37%	203.74	7.78%
Pentane+	205.24		222.03	
Shrink	38.82		37.48	
Margin	166.43	5.81%	184.55	2.67%
NGL \$/Bbl	49.38	2.74%	61.10	1.70%
Shrink	12.79		12.35	
Margin	36.60	2.99%	48.75	2.21%
Gas (\$/mmBtu)	3.50	2.04%	3.38	-0.29%
Gross Bbl Margin (in cents/gal)	84.44	2.73%	113.93	2.00%
NGL Value in \$/mmBtu				
Ethane	1.75	-6.47%	4.38	-1.72%
Propane	4.50	0.54%	5.02	-0.44%
Normal Butane	1.84	8.51%	2.10	6.27%
Iso-Butane	1.38	3.99%	1.48	6.55%
Pentane+	2.65	5.07%	2.86	2.15%
Total Barrel Value in \$/mmBtu	12.11	1.91%	15.85	1.13%
Margin	8.61	1.86%	12.47	1.52%

House Republicans ... (continued from page 1)

statement on this provision and Republican sources stated that other options are being considered to get support for the payroll cut extensions.

According to Terry, Nebraska environmental regulators can complete an assessment of the new route within six months. FERC would then have 30 days after receiving the state environmental assessment to approve that portion. "If there are no barriers, [FERC] will have to approve the permit," he said.

He added that FERC is better equipped than the State Department to handle the pipeline. "FERC is the

expert agency in pipelines, pipeline safety, pipeline siting," he said in explaining the effort to take away the State Department's authority.

After the bill was introduced, it was co-sponsored by 40 representatives, including Rep. Lou Barletta (R-Pa.), Rep. Joe Barton (R-Texas), Rep. Marsha Blackburn (R-Tenn.), Rep. Randy Forbes (R-Va.), Rep. Mike Kelly (R-Pa.), Rep. Steven LaTourette (R-Ohio), Rep. Bill Shuster (R-Pa.), and Rep. Fred Upton (R-Mich.)

If the bill were to get out of the House with a Keystone XL provision, it is likely that provision would be removed and

others added in the Senate before being sent back to the House. "Whenever this comes back, the House will likely cave to what the Senate wants," Kneiss said.

An additional "poison pill" amendment is likely to be attached by the Senate in the form of tax increases on those making over \$1 million. In the end, it is likely that Congress will come down to the wire once again on the passage of the payroll tax extensions. This current session of Congress is likely to continue until Dec. 16 before a compromise is reached at both levels of Congress.

– Frank Nieto

INSIDE LOOK AT PROCESSING

Plains All American Signs To Acquire BP Canadian NGL, LPG Business

Plains Midstream Canada ULC, a Plains All American Pipeline LP (NYSE: PAA) subsidiary, signed a definitive agreement to acquire BP plc's Canadian natural gas liquids (NGL) and liquefied petroleum gas (LPG) business for approximately \$1.67 billion.

The assets to be acquired include ownership interests in approximately 2,600 miles of pipelines, approximately 20 million barrels of LPG storage capacity, seven fractionation plants with approximately 232,000 barrels per day (b/d) of capacity, multiple straddle plants and two field gas processing plants with an aggregate capacity of approximately 8 billion cubic feet per day, as well as approximately 10 million barrels of long-term and seasonal NGL inventory as of October 1, 2011. In total, the acquired assets and activities provide access to approximately 140,000 to 150,000 b/d of

NGL supply that are transported through a fully integrated network to fractionation facilities and markets in Canada and the Great Lakes region of the United States.

"BP's Canadian NGL business is an asset-rich platform that significantly expands our LPG asset footprint, providing a supply-based complement to our existing demand-focused business and making PAA one of the largest LPG service providers in North America," Greg L. Armstrong, chairman and chief executive of PAA, said in a news release. "We expect to be able to generate meaningful operating and commercial synergies by more fully connecting, integrating and utilizing these assets together with our existing North American LPG assets and our Canadian crude oil assets and activities."

KEY NORTH AMERICAN HUB PRICES	
2:30 PM CST / December 8, 2011	
Gas Hub Name	Current Price
Carthage, TX	3.34
Katy Hub, TX	3.38
Waha Hub, TX	3.40
Henry Hub, LA	3.41
Perryville, LA	3.38
Houston Ship Channel	3.36
Agua Dulce TX	3.40
Opal Hub, Wyo.	3.46
Blance Hub, NM	3.45
Cheyenne Hub, Wyo.	3.42
Chicago Hub	3.61
Ellisburg NE Hub	3.71
New York Hub	3.71
AECO , Alberta	3.10

Source: Bloomberg

Regency, Anadarko, Chesapeake Partner On Avalon, Bone Spring Processing Complex

Regency Energy Partners LP (NYSE: RGP) announced plans to jointly build a new \$100 million natural gas processing complex with Anadarko Pecos Midstream LLC, a wholly-owned subsidiary of Anadarko Petroleum Corp. (NYSE: APC), and a Chesapeake Energy Corp. (NYSE: CHK) affiliate. The facilities will be built in Ward County, Texas to handle additional production from the Bone Spring and Avalon shale. Construction costs will be equally contributed by the partners.

"This joint venture highlights Regency's ability to combine our gathering and processing expertise, along with our natural gas liquids platform, to provide a full-service solution to producers' needs

RESIN PRICES – MARKET UPDATE – DECEMBER 9, 2011					
TOTAL OFFERS: 19,481,976 lbs		SPOT		CONTRACT	
Resin	Total lbs	Low	High	Bid	Offer
LLDPE - Film	3,856,392	0.61	0.72	0.59	0.63
PP Homopolymer - Inj	3,160,520	0.67	0.78	0.65	0.69
LDPE - Film	2,960,680	0.60	0.73	0.65	0.69
HDPE - Blow Mold	2,228,668	0.58	0.72	0.58	0.62
HDPE - Inj	2,194,128	0.61	0.67	0.59	0.63
PP Copolymer - Inj	2,167,196	0.62	0.79	0.67	0.71
HMWPE - Film	1,085,472	0.66	0.73	0.64	0.68
LLDPE - Inj	632,184	0.63	0.69	0.62	0.66
HIPS	570,000	0.96	0.97	0.90	0.95
LDPE - Inj	436,736	0.66	0.73	0.64	0.68
GPPS	190,000	0.88	0.88	0.81	0.86

Source: Plastics Exchange – www.theplasticsexchange.com

in the region,” Jim Holotik, executive vice president and chief commercial officer of Regency, said in a news release. “We have longstanding relationships with Anadarko and Chesapeake and

are pleased to have the opportunity to partner with them to build this facility.”

Construction includes the construction of a 25 million cubic feet per day (MMcf/d) refrigeration plant that is

expected to be in-service by Q2 2012 and a 100 MMcf/d cryogenic processing plant that is expected to be in-service by Q4 2012.

Encana To Sell Cutbank Ridge Processing Plants

Encana Corp. (TSX, NYSE: ECA) signed an agreement to sell its Steeprock and Hythe natural gas processing plants along with related compression and gathering pipelines in Cutbank Ridge to Veresen Inc. (TSX: VSN) for Cad\$920 million (US\$900 million). The Steeprock plant is located in northeast British Columbia and the Hythe plant is located in northwest Alberta.

“This sale agreement marks the conclusion of the major components in our 2011 divestiture program, which, upon closing of all transactions, will result in proceeds of about US\$3.5 billion. Although not all of our announced transactions will be completed this year, the expected proceeds will help us achieve our 2011 target range for net divestitures of between \$1 billion and \$2 billion. Further, the transactions that are expected to close after year-end will give us a solid start on our 2012 divestiture program, which will be part of our 2012 capital in-

vestment program announcement in the first quarter. Proceeds from these non-core asset sales are expected to supplement cash flow generation, strengthen the company’s balance sheet and provide financial flexibility,” Randy Eresman, Encana’s president and chief executive, said in a news release.

This agreement, expected to close in Q1 2012, is part of Encana’s midstream divestiture strategy. These assets include approximately 516 million cubic feet per day (MMcf/d) of natural gas processing capacity and approximately 370 kilometres of pipelines.

“This divestiture of two Cutbank Ridge natural gas processing plants unlocks midstream value that we can profitably reinvest in our core business of developing natural gas and growing liquids production. This year, we invested about \$770 million in future growth opportunities, primarily aimed at building a strong portfolio of liquids-rich lands

that now totals more than 2.1 million net acres in Alberta, Colorado, Mississippi, Louisiana and Michigan. We are exploring diversified geological opportunities by drilling about a dozen wells on these highly prospective liquids-rich lands. This ambitious exploration program will help us define and focus our organic liquids growth potential in a variety of Canadian and U.S. basins, and it goes well beyond our previously announced plan to grow natural gas liquids extraction to an estimated 80,000 barrels per day in 2015 from our established natural gas resource plays. Across our North American resource portfolio in 2012, we will continue to focus on our highest return projects and we plan to direct a greater portion of our capital investment to grow our oil and natural gas liquids production,” Eresman continued.

Wells Fargo: Ethane Prices Could Drop Between 2013-2017

Recently announced NGL pipeline projects delivering volumes to Mont Belvieu may experience less than 100% capacity between 2013 and 2016, according to Wells Fargo Securities’ NGL Snapshot for November.

The firm altered their outlook following the announcement of Enterprise Products Partners’ proposed 125,000 barrels-per-day (b/d) Marcellus Ethane Pipeline, which Wells Fargo previously estimated at 50,000 b/d to 60,000 b/d capacity.

This assessment is based on the expectation that incremental ethane demand won’t increase until 2017 when new world-scale ethylene crackers are built in the region. “Under a best-case scenario in which supply/demand for all NGL products except ethane are perfectly balanced, we estimate the utilization rate of new fractionation expansions projects could average 80-85% in 2015. However, the utilization rate for new NGL pipelines is likely to average around 40%

due to the combination of limited ethane demand and fractionation capacity.”

Despite this, Wells Fargo still anticipates midstream companies earning attractive returns on new pipeline and fractionation projects because of their take-or-pay design as well as the long life of their contracts. “However, the longer-term ramification of constructing primarily supply push-driven NGL transportation capacity is lower ethane prices during the interim,” the report said.

The larger scale of Enterprise's proposed ethane pipeline combined with the expectation of two world-scale ethylene crackers also altered Wells Fargo's assessment for the required fractionation expansions necessary to balance the ethane market. According to the report, only one such expansion is now necessary instead of three.

"According to our analysis, midstream companies have announced plans to construct significantly more y-grade NGL pipeline capacity terminating at Mont Belvieu than regional fractionation capacity available to absorb the expected influx of NGLs. Accordingly, we continue to view fractionation capacity as the key bottleneck that drives incremental supply of NGLs to market," Wells Fargo said.

Midstream companies would need to build 500,000 to 550,000 b/d of fraction capacity at Mont Belvieu to meet the in-

creased flow from these y-grade pipeline projects. In addition, this added capacity could be necessary to meet increased demand from any additional crackers built in the Gulf Coast in the future.

It is expected that processors will continue to benefit from strong margins on ethane until early 2013, which is when it anticipates demand to be outpaced by supply. This period of less robust margins is expected to be temporary though as demand will dramatically increase as new crackers are brought online.

Between Q3 2013 and Q4 2017, Wells Fargo anticipates ethane demand increasing by 412,000 b/d. Included in this assessment is an increase of 147,000 b/d from heavy crackers converting to lighter feedstock. If all heavy crackers converted to light crackers, demand would increase by 205,000 b/d given a 90% operating rate.

Propane/Butane Fracing Gains Traction

In September, GasFrac Energy Services Inc. signed a three-year contract with a two-year renewal option with Husky Energy for liquid petroleum gas (LPG) fracturing services. The company began operations under that contract in the fourth quarter.

The use of propane to replace water as the carrying agent for sand and chemicals in fracturing operations has begun to get the attention of operators in areas with water issues such as feared contamination of aquifers and drought.

GasFrac is a Canadian company that has been promoting use of a propane gel for several years. The company said it has so far performed more than 1,000 propane fracs on 400 wells.

In its third quarter report, the company said it anticipated that the Husky contract will initially utilize two of the four sets of equipment currently in

Canada. Husky will focus on its development at Ansell. GasFrac expects more sets will be required as work under the contract expands.

During the second quarter two sets of equipment were mobilized to GasFrac's operations in Texas. Since that time, the company has performed fracturing operations for several companies in a number of different formations, including a six-week project in Colorado. Revenues from U.S. operations grew consistently each month from \$0.6 million in May to \$12.9 million in October.

"To date in the U.S., we have performed fracturing services for 15 customers in numerous reservoirs. This has allowed us to introduce our LPG fracturing technology to a wide range of potential customers for their assessment. We remain confident that customer acceptance of our LPG fracturing technology will continue to grow

However, this rate of conversion is highly unlikely according to the report because many ethylene producers are contractually obligated to crack heavy feeds to produce certain co-products; some petrochemical plants can subsidize the cracking of heavier co-products because of their integration with refineries; and ethylene plants could run heavier products in the absence of sufficient NGL feedstock supply since most plants require a minimum level throughput for efficient operation.

In addition, Wells Fargo anticipates stable NGL prices and strong margins for the rest of the NGL barrel. "This dynamic should continue to encourage producers to drill in NGL-rich formations even absent strong ethane prices," the report said.

— Frank Nieto

based on results. While we have not to date signed any long-term contracts with U.S. customers, this will be a focus for us in 2012," the quarterly report noted.

The company has six sets of equipment operating and is expecting the delivery in the first quarter 2012 of four more sets that are currently under construction.

"We expect the North American, pressure-pumping market will remain strong in 2012. While there is some concern as to the level of capital budgets for exploration and development companies in 2012, we expect that expenditures will be flat to marginally down year over year.

"Further, capital budgets are expected to continue to move to oil and liquids-rich reservoirs and away from natural gas. As in Canada, more drilling activity in the U.S. is being focused on oil and liquids-rich gas. This trend is positive

for GasFrac since the vast majority of our activity is in oil and liquids-rich reservoirs," the report continued.

"The expanded fleet size will allow us to have a greater geographic spread of equipment and revenue in 2012 helping to alleviate the extent of the impact of spring breakup. Further, the work under the recently signed contract with Husky is pad fracturing, which will allow us to continue a portion of this work through breakup," the report emphasized.

"The preliminary development plan in place for this liquids-rich formation at Ansell in west central Alberta includes the potential drilling of up to 2,600 Cardium and deeper Mannville wells, which are mainly comprised of horizontal wells. We further anticipate that demand in the deep basin will remain strong," the report stated.

The firm began operations in February 2006. The company has four wholly owned subsidiaries: GasFrac Services GP Inc.; GasFrac Energy Services Ltd. Partnership; GasFrac Luxembourg Finance; and GasFrac Inc. (a U.S. incorporated entity). In early November, Zeke Zeringue joined the company as chief executive officer and president.

The company's technology includes using LPG as the carrier fluid and a di-ester phosphoric acid gelling agent

to provide enough viscosity to carry the sand and chemicals.

LPG is highly soluble in reservoir gas, which improves flow-back and allows up to 100% of the LPG to be recovered, according to GasFrac. There is no water or CO₂ to recover and the chemicals are left in the formation. The LPG fracturing process is a closed system, which minimizes flaring.

Although the process is about 20% to 40% more expensive than conventional hydraulic fracturing, there is no backend cost for recovery and processing of the frac fluids. That would tend to even out some of the front-end cost.

However, there could be some issues remaining to solve with the technology. Safety remains a key concern for regulators. Canadian officials have approved the technology and several state agencies in the U.S. have studied the method with an eye on the flammability of the LPG.

In another example, GasFrac performed an LPG frac on a well in the Eagle Ford Shale for Jadela Oil Corp., a Canadian company, in August.

On Aug. 21, the fracing operation in the El Indio #1-H well in Maverick County, TX, was completed. Jadela used a StacFRAC® open-hole, multistage completion liner system from Packers Plus

Energy Services Inc. and fraced the well using propane/butane.

On Sept. 7, Jadela reported that the well produced oil, gas, butane and other hydrocarbons. About 5,360 barrels of LPG were injected into the formation. At that time, the company expected to recover and either resell or store the recovered LPG.

Oil and gas flows were restricted by the capacity of the LPG equipment. The flow rate was restricted on a 10/64-inch choke. The company noted in a press release that two stages in the eight-stage frac were "not fully fraced."

In a Nov. 21 press release, Jadela stated that "there have been a series of events that started with technical issues with Stage 1 and the sand-off during Stage 2 of the fracturing process, which has resulted in operational delays and cost overruns."

However, the process is getting industry attention because it provides an alternative to the use of water. The interest is increasing from international operators that are involved in shale gas/oil development worldwide.

— Scott Weeden

Mid-Scale LNG Projects Top Company's Agenda

Encana Corp. (TSX, NYSE: ECA) signed an agreement to sell its Steeprock and Hythe natural gas processing plants along with related compression and gathering pipelines in Cutbank Ridge to Veresen Inc. (TSX: VSN) for Cad\$920 million (US\$900 million). The Steeprock plant is located in northeast British Columbia and the Hythe plant is located in northwest Alberta.

"This sale agreement marks the conclusion of the major components in our 2011 divestiture program, which, upon

closing of all transactions, will result in proceeds of about US\$3.5 billion. Although not all of our announced transactions will be completed this year, the expected proceeds will help us achieve our 2011 target range for net divestitures of between \$1 billion and \$2 billion. Further, the transactions that are expected to close after year-end will give us a solid start on our 2012 divestiture program, which will be part of our 2012 capital investment program announce-

ment in the first quarter. Proceeds from these non-core asset sales are expected to supplement cash flow generation, strengthen the company's balance sheet and provide financial flexibility," Randy Eresman, Encana's president and chief executive, said in a news release.

This agreement, expected to close in Q1 2012, is part of Encana's midstream divestiture strategy. These assets include approximately 516 million cubic feet per day (MMcf/d) of natural gas processing

capacity and approximately 370 kilometres of pipelines.

“This divestiture of two Cutbank Ridge natural gas processing plants unlocks midstream value that we can profitably reinvest in our core business of developing natural gas and growing liquids production. This year, we invested about \$770 million in future growth opportunities, primarily aimed at building a strong portfolio of liquids-rich lands

that now totals more than 2.1 million net acres in Alberta, Colorado, Mississippi, Louisiana and Michigan. We are exploring diversified geological opportunities by drilling about a dozen wells on these highly prospective liquids-rich lands. This ambitious exploration program will help us define and focus our organic liquids growth potential in a variety of Canadian and U.S. basins, and it goes well beyond our previously

announced plan to grow natural gas liquids extraction to an estimated 80,000 barrels per day in 2015 from our established natural gas resource plays. Across our North American resource portfolio in 2012, we will continue to focus on our highest return projects and we plan to direct a greater portion of our capital investment to grow our oil and natural gas liquids production,” Eresman continued.

PIPELINE & TECHNOLOGY

Enbridge Plans \$145M North Dakota Crude System Expansion

Enbridge Energy Partners L.P. (NYSE: EEP) announced a further \$145 million investment to enhance the capability of its North Dakota crude oil system. The project will expand capacity into the Berthold terminal by 80,000 barrels per day (b/d) and will include a rail car loading facility at the terminal to accommodate the additional volume. The partnership currently has contractual commitments for 70% of the rail loading capacity and anticipates it will soon finalize agreements for the remaining capacity.

“Our Berthold Rail Project complements a series of expansions Enbridge has undertaken to expand transport capacity from North Dakota. It integrates high quality Bakken crude into Enbridge’s expanding portfolio of pipeline projects that access premium markets across the United States,” said Mark Maki, president of the partnership. “Importantly, it allows producers and

shippers the ability to continue to grow their business while Enbridge develops the next phase of pipeline expansions on the Enbridge North Dakota System.”

The Berthold Rail Project complements the Partnership’s Bakken Expansion Program and integrates the partnership’s gathering pipeline capacity in western North Dakota and eastern Montana created by our Bakken Access Program with increased North Dakota export capacity.

The Bakken Expansion Program, which was announced in August 2010, will accommodate growing production from the Bakken and Three Forks formations located in Montana, North Dakota and southeast Saskatchewan. The program is expected to add 145,000 b/d capacity, 25,000 b/d of which is already available; the remaining 120,000 b/d is expected to be in service by early 2013. The Bakken Expansion Program is expected to cost approximately \$370 million for

the U.S. projects and approximately Cdn \$190 million for the Canadian projects. In addition, the \$90 million Bakken Access Program, which was announced in October 2011, involves increasing gathering pipeline capacities, construction of additional storage tanks and addition of truck access facilities at multiple locations in western North Dakota and will be in service prior to the start-up of the Bakken Expansion Program.

The Berthold Rail Project includes the construction of a double-loop unit-train facility, crude oil tankage and other terminal facilities adjacent to its existing facilities near Berthold, North Dakota. The Project will have the ability to stage three unit-trains at Berthold at any given time. After an initial 10,000 b/d Phase I start-up in July 2012, the full 80,000 b/d of rail export capacity is scheduled to be in-service in early 2013.

Pembina Pipeline Plans \$550 Million In 2012 Capital Spending

Pembina Pipeline Corp. (TSX: PPL, PPL.DB.C) announced that its Board of Directors has approved a capital spending plan for 2012 of approximately \$550 million, with the majority of the expenditures targeted at projects in the Company’s

Conventional Pipelines and Gas Services businesses. Pembina’s 2012 capital spending plan is approximately 10 percent higher than its 2011 capital budget and represents the largest in the Company’s history.

“Pembina’s 2012 capital spending plan is directly aligned with our goal of continuing to provide long-term value to our shareholders,” said Bob Michaleski, President and Chief Executive Officer. “Pembina has demonstrated its ability

to secure and execute growth projects that are expected to provide long-term, stable returns in the past, and our 2012 plans are no exception. Our focus in 2012 will be to progress our current suite of projects and bring in the next phase of growth opportunities while maintaining a strong balance sheet.”

During 2012, Pembina will allocate approximately \$245 million of its capital budget, or about 44 percent, towards the construction of the Company’s previously announced Saturn and Resthaven enhanced liquids extraction facilities along with the associated pipelines.

With respect to the previously announced expansion of Pembina’s Peace natural gas liquids (NGL) pipeline system, the Company expects to spend \$55 million to increase capacity by 20,000 barrels per day (“bpd”) in 2012, and \$45 million in 2013 to increase capacity by an additional 35,000 bpd. Pembina also plans to spend \$30 million to expand its crude and condensate capacity on the Peace Pipeline system by 40,000 bpd, which, subject to regulatory approval, could be in-service by mid-2013. These expansion projects are necessary so that Pembina can continue to meet the growing needs of producers resulting from new technology and increased activity in plays such as the Montney oil pools.

The Company plans to finance its 2012 capital expenditures through undrawn and potentially expanded credit facilities, public or private debt, the reinstatement of its Premium Dividend™ and Dividend Reinvestment Plan (see below), and cash flow from operating activities.

Pembina’s 2012 capital spending plan reflects strong growth opportunities that expand on existing operations in each of its four businesses and is expected to continue to drive shareholder value in the coming years.

2012 Capital Spending Highlights

Pembina’s 2012 capital spending plan is expected to be allocated as follows:

The Conventional Pipelines business expects to invest approximately \$210 million in 2012, with the majority allocated to Alberta-based pipeline systems as follows:

- \$55 million is projected to be spent to expand the NGL capacity on its Peace Pipeline and Northern NGL systems which is expected to increase capacity on these systems by 20,000 bpd from 115,000 bpd to 135,000 bpd in 2012;
- \$30 million is projected to be spent to upgrade two existing pump stations which is expected to increase crude and condensate capacity by 40,000 bpd from 155,000 bpd to 195,000 bpd on its Peace Pipeline;
- \$45 million is projected to be spent to tie in the Resthaven and Saturn facilities to Pembina’s existing infrastructure;
- \$25 million is projected to be spent to expand its Drayton Valley system which serves Cardium producers;
- \$20 million is projected to be spent to expand Pembina’s Swan Hills System; and
- the remaining capital will be directed to increase Pembina’s capture area, tie in new producers and ensure there is sufficient capacity to accommodate increased production from existing and new customers.

Pembina’s Gas Services business plans to spend approximately \$235 million in capital in 2012 with \$200 million being directed towards the Saturn and Resthaven enhanced liquids extraction facilities. Both facilities are expected to be in-service by late 2013 and are expected to add a combined 330 million cubic feet per day (“mmcf/d”) of enhanced liquids extraction capacity and extract up to 26,500 bpd of liquids which will be trans-

ported to market using new and existing Pembina assets. The majority of the remaining capital is expected to be spent to expand Pembina’s Cutbank Complex processing capacity by 50 mmcf/d which is anticipated to be in-service in mid-2012.

The Midstream & Marketing business intends to invest \$70 million in 2012 with \$35 million being directed towards expanding Pembina’s presence in the full-service truck terminal business. Pembina is developing plans to convert two of its existing truck terminals to full-service terminals and construct a new green-field terminal. The Company also plans to invest approximately \$15 million to develop caverns at its Fort Saskatchewan Ethylene Storage Facility, one of which is expected to be in-service by the end of 2012. The remainder of the capital spend planned by this business unit is expected to be allocated to increasing the connectivity of Pembina’s Midstream & Marketing assets, including the Pembina Nexus Terminal, as well as implementing a connection to the Southern Lights condensate pipeline.

The Oil Sands & Heavy Oil business’ capital spending plan for 2012 is approximately \$30 million which includes \$17 million of capital to finalize the Nipisi and Mitsue Pipelines (this capital is included in the \$400 million estimated total project cost, but has not yet been spent). The remaining capital will be directed to various pipeline improvements and for business development studies.

The remainder of Pembina’s 2012 capital budget will be used to complete a variety of corporate-wide projects, primarily allowing for system and technology upgrades.

NEWS & TRENDS

Williams Enters Into Exclusive Negotiations To Acquire Delphi Midstream

Williams Partners (NYSE:WPZ) and Delphi Midstream Partners LLC signed a memorandum of intent and agreement of exclusive negotiations regarding the Laser Gathering System and other Delphi midstream businesses. The memorandum and agreement covers a potential transaction in which Williams Partners would acquire Delphi subsidiaries that own the Laser and other Delphi midstream businesses, located primarily in the Marcellus Shale.

The memorandum and agreement involves Williams Partners' potential acquisition of Delphi subsidiaries that own Delphi's midstream assets, including the Laser Gathering System, comprised of 33 miles of 16-inch natural gas pipeline and associated gathering facilities in Susquehanna County, Penn., as well as 10 miles of gathering pipeline in southern New York. The proposed deal also includes Delphi's Mansfield Gathering System, which consists of 19 miles of pipeline in the

Barnett Shale near Fort Worth, Texas. In anticipation of a successful transaction, Williams Partners has made relevant regulatory filings, including a Hart-Scott-Rodino notification. Both parties expect to close quickly following receipt of all regulatory approvals and the signing of definitive agreements.

Boardwalk Completes Storage Acquisition From Enterprise

Boardwalk HP Storage Co. LLC, a joint venture between Boardwalk Pipeline Partners LP (NYSE: BWP) and Boardwalk Pipelines Holding Corp. (BPHC), completed its acquisition of Petal Gas Storage LLC, Hattiesburg Gas Storage Co. along with related assets from Enterprise Products Partners LP (NYSE: EPD) for \$550 million.

BPHC, which owns 80% of the joint venture, contributed \$280 million to

the acquisition with Boardwalk operating the assets and owning the remaining 20% and contributing \$70 million to the purchase price. The remaining \$200 million came from a bank loan and equity contributions.

These storage assets include seven high deliverability salt dome natural gas storage caverns in Forrest County, Mississippi with a total capacity of 29 billion cubic feet. An eighth cavern is

expected to be brought online in 2013 from owned land that is suitable for up to six additional storage caverns. Additional assets include a leaching plant, freshwater and brine disposal wells, approximately 69,000 horsepower of compression and approximately 105 miles of pipeline that connects the facilities to major natural gas pipelines.

Dow, Saudi Aramco Form JV To Build Petrochemical Complex

The Dow Chemical Co. formed a joint venture with Saudi Arabian Oil Co. (Saudi Aramco) called Sadara Chemical Co. that will build a petrochemical complex in Jubail, Saudi Arabia that is expected to be the largest such facility ever built in a single phase.

Production of polyurethanes, propylene glycol, elastomers, linear low density polyethylene, low density polyethylene, glycol ethers, and amines are expected

to begin in the second half of 2015 with full operations beginning in 2016. Sadara will sell these products within the Middle East with Dow selling products from the joint venture to the rest of the world.

"Today's announcements mark another exciting and significant step forward for Sadara as it fulfills its commitment to building and operating a world scale, fully integrated chemicals complex in Jubail Industrial City,"

Andrew Liveris, Dow's chairman and chief executive, said in a news release. "I'm truly delighted to see the progress that we've made, and I'm most impressed with this line-up of outstanding leadership for Sadara. I have no doubt they will bring this premier partnership between Dow and Saudi Aramco to life and build a venture that is well positioned to create value on every front."

Constellation Energy To Acquire ONEOK Energy Marketing Co.

ONEOK Inc. (NYSE: OKE) entered into a definitive agreement to sell its subsidiary, ONEOK Energy Marketing

Company, to Constellation Energy Group, Inc. (NYSE: CEG) for \$22.5 million plus working capital.

ONEOK Energy Marketing Company provides physical and financial natural gas products and services to retail

customers primarily located in the Mid-Continent and Texas. The business is accounted for in the ONEOK natural gas distribution segment.

“We determined that retail natural gas marketing is no longer a core business to ONEOK and have made the decision to exit the business,” said Pierce H. Norton, ONEOK chief operating officer. “Constellation is a logical buyer since it is active in most states where ONEOK Energy Marketing Company has custom-

ers. It also has the resources and capabilities to compete and grow the retail natural gas marketing business.”

ONEOK will continue its wholesale natural gas marketing activities through its energy services business segment.

ONEOK Energy Marketing Company currently employs 39, with 14 employees located in Tulsa and the remaining located in various locations in Kansas, Texas, Oklahoma, Nebraska and Wyoming.

All current ONEOK Energy Marketing Company employees will be considered for positions with Constellation. Those not offered positions with Constellation will have the opportunity to apply for other open positions within ONEOK. Employees who do not find a position or choose not to apply for another job within ONEOK will receive severance and other benefits from ONEOK.

The transaction is expected to close in the first quarter of 2012.

Qatar Petroleum, Shell To Build World-Scale Petrochemical Complex

Qatar Petroleum and Royal Dutch Shell signed a Heads of Agreement that sets the scope and commercial principles for the development of a world-scale petrochemicals complex in Ras Laffan Industrial City, Qatar. This agreement follows the conclusion of a joint feasibility study conducted by the partners, Qatar Petroleum and Shell.

The scope under consideration includes a world-scale steam cracker, with feedstock coming from natural gas projects in Qatar; a mono-ethylene glycol plant of up to 1.5 million tonnes per annum using Shell’s proprietary OMEGA (Only MEG Advantaged) technology; 300 kilotonnes per annum of linear alpha olefins using Shell’s proprietary SHOP (Shell Higher Olefin Process); and another olefin derivative. The complex will

produce cost-competitive petrochemicals products to be marketed primarily into Asian growth markets. Qatar Petroleum will have an 80% equity interest in the project and Shell 20%.

Dr. Mohammed bin Saleh Al-Sada, Qatar’s Minister of Energy, said: “This critical petrochemicals project fits well with Qatar’s strategy to strengthen and further diversify its growing chemicals industry and represents an important milestone on our journey to become a significant global petrochemicals producer. In line with directives of His Highness, the Emir, Sheikh Hamad Bin Khalifa Al Thani, this large petrochemicals complex will provide Qatar with another viable option to extract optimal value from its natural gas resources.”

Peter Voser, chief executive of Shell, added: “This agreement marks the beginning of another partnership with Qatar Petroleum for the development of a world-scale petrochemicals project in Qatar. Coming on the heels of the inauguration of Pearl GTL, this new venture demonstrates the commitment of both parties to deepen our relationship even further. Shell values the opportunity to bring to Qatar the expertise and technology necessary to deliver a petrochemicals project of this scale and looks forward to its successful delivery.”

Qatar Petroleum and Shell have delivered Pearl Gas-to-Liquids (GTL) and Qatargas 4 this year; two of the world’s largest projects built in Ras Laffan Industrial City.

Cheniere Selects Bechtel For Sabine Pass Expansion

Bechtel has been selected by Cheniere Energy Partners, L.P. to provide engineering, procurement, and construction services for two new liquefaction trains at the Sabine Pass liquefied natural gas (LNG) terminal in Cameron Parish, Louisiana. The project builds on Bechtel’s previous work at Sabine Pass where the company designed, built, and expanded the LNG receiving facility.

“We are thrilled Cheniere Partners has selected Bechtel for this important project that will transform Sabine Pass into a bi-directional facility capable of liquefying and exporting natural gas as well as importing and regasifying foreign-sourced LNG,” said Jack Futcher, president of Bechtel’s oil, gas, and chemicals business unit. “We look forward to

continuing our successful collaboration with them.”

Bechtel will design, construct, and commission the two liquefaction trains using the ConocoPhillips Optimized Cascade® technology. The liquefaction trains will be built next to the existing facilities at the Sabine Pass LNG terminal, which include five tanks with storage capacity of 16.9 billion cubic feet

equivalent, two docks that can handle vessels up to 265,000 cubic meters, and vaporizers with regasification capacity of 4.0 billion cubic feet per day. Construction is expected to begin in 2012.

“Bechtel was chosen to develop and construct our liquefaction facilities due to their extensive LNG capabilities and experience in building some of the world’s largest LNG production facilities.

Our trains are being designed with the best combination of efficiency, cost, and reliability, and with the turnaround capability needed to provide flexible LNG delivery programs,” said Charif Souki, Chairman and CEO of Cheniere Energy Partners. “We have worked with Bechtel in the past on the construction of our existing Sabine Pass LNG terminal, which was completed on time and on

budget, and look forward to another successful project.”

Bechtel is a global leader in the construction of LNG facilities as evidenced by projects currently underway in Angola, Australia, and Nigeria, and facilities completed in Australia, Egypt, Equatorial Guinea, and Trinidad.

InterOil, ENN Sign Heads Of Agreement For LNG Supply

InterOil Corp. (NYSE: IOC) and Pacific LNG Operations Ltd. signed a Heads of Agreement (HOA) with ENN Energy Trading Co. Ltd., for the supply of one to one and one half, million tonnes per annum (mtpa) of liquefied natural gas (LNG) from the Gulf LNG Project in Papua New Guinea.

The Gulf LNG Project in Papua New Guinea (PNG) comprises the Elk and Antelope gas fields and liquefaction and associated facilities in the Gulf Province of PNG to be developed by Liquid Niugini Gas Ltd., InterOil and Pacific LNG’s joint-venture project company.

The HOA, while not binding, provides exclusivity on the LNG volumes for ENN,

during negotiation of the definitive agreement, and sets out the basis upon which the parties intend to negotiate and document terms for the purchase and sale of between 1.0 and 1.5mtpa of LNG, for a period of 15 years commencing in 2015. InterOil, Pacific LNG, and ENN have a target to complete negotiations and execute a binding Sales and Purchase Agreement (SPA) with ENN by the second quarter of 2012.

InterOil chief executive Phil Mulacek commented, “We are pleased to have executed an additional HOA for long-term LNG off-take from our Gulf LNG Project in Papua New Guinea. InterOil is proud to work with ENN, the largest independent

natural gas distribution company in the Peoples Republic of China. ENN operates piped gas projects in over 100 cities in China with a total connectable urban population of 49 million. With 3.3 to 3.8mtpa now under HOA’s, and SPA discussions underway, InterOil believes it has industry support for its Gulf LNG project.”

Liquid Niugini Gas V.P. LNG, Conrad Kerr, commented, “ENN serves approximately 22 thousand industrial, and commercial customers with 780 million cubic feet per day of installed capacity, and 6 million households, by its 11 thousand mile gas pipeline network. We are excited to begin a long-term relationship with this rapidly growing, end user customer.”

SNAPSHOT

Questar Overthrust Well-Connected In Rockies

The Overthrust Pipeline Co. is a 212-mile pipeline that is one of the most well-connected pipelines in the Rockies as it has the capability to transport production from the Green River, Overthrust, and Wamsutter basins.

In addition, the Questar-owned system has interconnections with the Ruby Pipeline, Rockies Express Pipeline, Questar Pipeline, Kern River Gas Transmission and Wyoming Interstate Co. The pipeline, which runs across the lower portion of Wyoming, has a total capacity of 1.6 billion cubic feet per day as well as

the capability to deliver volumes to the east and west.

According to Hart Energy’s Mapping & Data Services, the largest transportation customer on the system is Wyoming Interstate Co. Ltd. at a total 665,000 dekathems per day (Dth/d). This was followed by Encana Marketing USA Inc. at 300,000 Dth/d; and BP Energy Co. at 20,000 Dth/d.

Given the increased production out of the Rockies, it is not surprising that transportation revenue increased substantially on the system. In 2006, revenue was \$8 million with \$2.6 million in net

income. Revenue grew to \$43 million in 2009 with \$13.8 million in net income. These figures coincided with volumes increasing from 400,000 Dth/d in 2006 to 449,000 Dth/d.

The system’s largest receipt point in 2010 was the Opal Natural Gas Processing Plant followed by the Pioneer Natural Gas Processing Plant. The top delivery points in 2010 were Wamsutter M&R followed by Hams Fork MS.

- Click [here](#) to download map and charts.
– Frank Nieto

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Contact Information:

FRANK NIETO Editor
fnieto@hartenergy.com



HART ENERGY

1616 S. Voss, Suite 1000 • Houston TX 77057-2627 • USA
www.hartenergy.com | www.midstreambusiness.com

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