Formerly GAS PROCESSORS REPORT



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FEATURE

Online System Based on HYSYS Simulation Models Monitors Emissions, Identifies Optimization Opportunities

As various government agencies in the United States and Canada increase their emission reporting requirements, operators must keep pace with their own reporting systems to match these requirements. In an effort to better maximize resources, Process Ecology designed an internet-based system that relies on a process simulation model using AspenTech's HYSYS software to measure emissions, while also offering users guidance on ways to improve operations at their facilities.

The system that Process Ecology created manages benzene emissions at approximately 100 operating dehydration units owned by Encana and other operating companies in Western Canada. The results not only allow operators to report emission lev-



els, but also identify areas to improve energy efficiency and other opportunities.

"HYSYS is used in all kinds of processing facilities from the dehydration facilities in this instance, up through complex crude oil processing facilities," Mike Strathman, director of E&P at AspenTech, told *Midstream Monitor*. "HYSYS can be used in a lot of different ways. The reporting requirements

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INSIDE LOOK AT PROCESSING

Spectra Energy Expects Earnings To Continue To Improve On Expansion Projects

Spectra Energy reported net income of \$350 million in Q1 2011, up from \$342 million in the previous year's quarter. The key drivers for this success are the continued strong performance from its fee-based businesses, a \$45 million increase in earnings from its expansion projects such as TEMAX and its Fort Nelson natural gas processing plant expansion; a stronger Canadian dollar that improved its Canadian businesses; and colder than normal weather in the quarter that benefitted its distribution segment.

"The harsh weather also led to record deliveries on our Northeast U.S. pipelines," Greg Ebel, president and chief executive, said during a conference call to discuss quarterly earnings. "Our system ran safely and reliably and met the customers' needs during critical periods. While cold weather is not an earnings driver for the quarter for our U.S. pipelines, the high utilization of our system bodes well in terms of both ongoing business and future pipeline expansion opportunities.".

While TEMAX and the Fort Nelson expansion helped to grow earnings, Ebel said that other projects completed in the second quarter will continue this growth. Last month, Spectra completed the Bissette Pipeline, which connects production from the Montney to the South Peace Pipeline, the Dawson gas processing plant and ultimately to its McMahon gas processing plant.

The company also brought the Gulf-stream Phase V project online under budget

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Chesapeake Energy Posts Q1 Net Loss Of \$725Million Due To Hedging

Chesapeake Energy Corp. reported \$725 million on hedging contracts losses in Q1 2011, which resulted in the company recording a \$205 million loss for the quarter. Despite the loss the company's production totals and large leaseholds in liquids-rich plays portend well for the company's future.

While Chesapeake Energy posted a net loss for the quarter, it did reduce its debt below its 25% goal for the year that is part of its 25/25 Plan. "Now we just need to maintain where we are from here on, and that is our plan," Aubrey McClendon, chairman and chief executive, said during a conference call to discuss quarterly earnings.

He also noted that the company had secured industry-leading leasehold positions in two potentially significant liquids-rich plays: the Utica shale with 1.2 million net acres and the Mississippian Carbonate play with 1.1 million net acres. McClendon said that the company antici-

pated initiating joint-venture efforts in both plays in the second half of 2011.

The company averaged 67,000 barrels per day (b/d) in liquids production, which is expected to grow to 150,000 b/d by the end of year-end 2012 and 250,000 b/d by year-end 2015. This is due to the company's presence in 12 of the 13 liquids-rich plays that are generally considered to have "significant potential."

Chesapeake Energy is active in the Granite Wash; the Cleveland, Tonkawa and Mississippian plays in the Anadarko basin; the Eagle Ford shale; Niobrara shale; the Avalon, Bone Spring, Wolfcamp and Wolfberry plays in the Permian Basin; the Bakken shale; and the Utica shale.

"We believe it is simply unprecedented that we have assembled leading positions in 12 of the 13 most important liquids-rich plays in the U.S. and very attractive per net acre leasehold cost. This will lead to very substantial net asset

value creation for Chesapeake shareholders for decades to come," he said.

In Q1, the company's liquids production was comprised of 53% oil and 47% natural gas liquids (NGL). The long-term model is for 60% oil and 40% NGL. "It's simply a function right now of the Granite Wash's throwing off so many volumes of NGLs in our black oil plays," he said, while adding that production out of the Eagle Ford, Niobrara, Cleveland, Tonkawa, Mississippian and Permian plays are just starting to ramp up production.

Although hedging contracts didn't prove successful for the company in the quarter, it continues to hedge gas prices and is nearly fully hedged for gas in 2011 and approximately 35% of its first half 2012 gas production. Additionally, McClendon pointed out that the company had earned \$7 billion in cash by hedging prices during the last 10 years.

- Frank Nieto

Enterprise Products Partners To Merge With DEP

Enterprise Products Partners LP, Houston, (NYSE: EPD) and Duncan Energy Partners LP (NYSE: DEP) have executed a definitive agreement that would result in a merger whereby DEP would become a wholly-

KEY NORTH AMERICAN HUB PRICES					
2:07 PM CST / May 5, 2011					
Gas Hub Name	Current Price				
Carthage,TX	4.39				
Katy Hub, TX	4.44				
Waha Hub, TX	4.40				
Henry Hub, LA	4.49				
Perryville, LA	4.43				
Houston Ship Channel	4.44				
Agua Dulce TX	4.57				
Opal Hub, Wyo.	4.20				
Blance Hub, NM	4.29				
Cheyenne Hub, Wyo.	4.26				
Chicago Hub	4.60				
Ellisburg NE Hub	4.47				
New York Hub	4.78				
AECO , ALBERTA	4.21				

Source: Bloomberg

owned subsidiary of EPD's operating partnership through a unit-for-unit exchange.

Under the terms of the definitive agreement, DEP unitholders would receive 1.01 EPD common units in exchange for each DEP common unit they own at closing, representing a premium of approximately 35% based on the closing price of DEP common units on February 22, 2011, the last trading day before EPD announced its initial proposal to acquire all of the common units of DEP owned by the public. Based on the cash distributions to be paid on May 6, 2011 by DEP and EPD, the merger would also result in a 32% increase in per unit cash distributions for the unitholders of DEP.

The merger is expected to provide benefits to current EPD unitholders by:

- being immediately accretive in terms of distributable cash flow per EPD common unit;
- simplifying EPD's commercial and organizational structure resulting from EPD's ownership of 100% of the equity interests in certain affiliates, which are now jointly owned with DEP, such as Acadian Gas LLC, Enterprise Texas, Enterprise GC and Mont Belvieu Caverns LLC;
- streamlining the Enterprise partnership structure, which reduces complexity, enhances transparency for debt and equity investors and reduces the overall cost of financing;
- maintaining EPD's financial flexibility as the unit-for-unit exchange finances approximately 77% of the

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- \$3.3 billion purchase (including DEP's indebtedness which is already consolidated on EPD's balance sheet) with EPD equity; and
- reducing general and administrative costs by approximately \$2 million per year primarily from eliminating public company expenses associated with DEP.

"We fully support the combination of these two successful partnerships," says W. Randall Fowler, president and chief executive officer of DEP's general partner. "We believe DEP unitholders will benefit from the immediate increase in the value of and the distributions on their EPD common units issued as merger consideration as well as EPD's future growth potential."

The merger is expected to provide benefits to DEP unitholders by:

- providing DEP unitholders with a value premium of approximately 35 percent through the exchange of 1.01 EPD common units for each DEP common unit based on the closing price for DEP common units on February 22, 2011;
- providing DEP unitholders with a substantial increase in distributions, approximately 32% based on the 1.01 exchange ratio and the quarterly distribution rates to be paid by DEP and EPD on May 6, 2011;

- providing DEP unitholders more liquidity by exchanging DEP common units for EPD common units, which have approximately 16 times the average daily trading volume of DEP;
- providing DEP unitholders an investment in a partnership with a stronger credit profile. EPD is rated BBB-, Baa3 and BBB- by Fitch Ratings, Moody's Investor Service and Standard & Poor's, respectively, with an average debt maturity of 10 years compared to DEP which is not rated and has an average debt maturity of less than 3 years;
- providing DEP unitholders with an opportunity to benefit from potential unit price appreciation and increased cash distributions through ownership of EPD units; and
- providing DEP unitholders an ownership in a much larger and more diverse partnership as EPD had more than \$31 billion of consolidated total assets at December 31, 2010 compared to \$5.6 billion of consolidated total assets for DEP.

The completion of the merger is subject to approval by a majority of the outstanding DEP common units. A wholly-owned subsidiary of Enterprise owns approximately 58 percent of DEP outstanding common units and has ex-

ecuted a voting agreement to vote in favor of the merger, which is sufficient to satisfy this condition. The completion of the merger is also subject to approval by the affirmative vote of a majority of the votes cast for or against the merger proposal by DEP's unitholders excluding Enterprise and its affiliates. Completion of the merger, assuming the requisite DEP unitholder vote is obtained, is expected to occur during the third quarter of 2011. No vote by EPD unitholders is required.

The members of the Audit, Conflicts and Governance Committee for the general partner of DEP, who evaluated and negotiated the major terms on behalf of DEP, voted unanimously in favor of the merger. The board of the general partner of EPD also voted unanimously in favor of the merger.

Financial advisors for this transaction were Barclays Capital Inc. for EPD and Morgan Stanley & Co. Inc. for the ACG Committee of the general partner of DEP. Legal advisors for this transaction were Andrews Kurth LLP and Morris, Nichols, Arsht, & Tunnell LLP for EPD; Vinson & Elkins LLP for DEP; and Baker & Hostetler LLP and Potter Anderson & Corroon LLP for the ACG Committee of the general partner of DEP.

Online System Based on HYSYS Simulation... (continued from page 1)

and the environmental dimension are just starting to evolve. We see this as a growing part of the business."

HYSYS simulates the way molecules behave in a facility, which allows users to track emissions. In the system that Process Ecology developed the energy requirements for the regeneration of glycol is calculated by the HYSYS model along with the unit's fuel gas consumption by assuming reasonable heater efficiencies. This makes it possible to compare current operations at the facility to industry best practices and uncover energy reduction opportunities.

Alberto Alva-Argaez, project manager at Process Ecology, told *Midstream Monitor* that the model Process Ecology developed was fairly generic, but the results were not.

"What we did was build the plant simulation models in HYSYS and then designed a database around it in a webbased system to allow us to capture the details from each location, centralize them and then connect the simulation to the database. This allows the simulation to take the information from the field in terms of gas conditions, the type of gas and so on, run the calculations for the



emissions and populate the database with these numbers, which can then be used to generate the reports required by the government," he said.

Alva-Argaez noted that while this particular simulation modeled dehydration plants, it would be relatively easy to capture a different facility in the simulation model that Process Ecology developed.

"The way that we tailor for the specifics for each location through this webbased system is that the operator can plug in the pressure and temperatures their plant is seeing and what quality of gas they're handling, which goes into the simulation model for the calculation. These numbers are the specifics of each location and they're going to be different for each location," he said.

Running these simulations allows the system to identify areas that can be optimized by identifying areas where, in this case, too much glycol is being used. This allows Process Ecology to identify ways to reduce their glycol circulation by a certain percentage along with the corresponding benzene emission reductions.

In a report on the system presented at last month's Gas Processors Association Annual Convention, AspenTech and Process Ecology noted that an average of more than \$680,000 per year in savings



(Left) Alberto Alva-Argaez, Project Manager, Process Ecology and (Right) Mike Strathman, Director of E&P, AspenTech

were identified along with a reduction of 10,000 tonnes of CO_2 per year in approximately 100 Encana units. These reductions only consider the fuel gas usage in the reboiler and would be higher if stripping gas and vented emissions were considered.

The Process Ecology / AspenTech solution generates emission reports, identifies ways that operators can improve the performance of their facilities, and saves time on these tasks.

"We've seen reductions of about 75% in the effort required to report emissions by using this system. We use to run these calculations before having this system set up in a conventional way, which could take us in the order of two to three hours to run one of these units and generate reports. With this system we can do it in about 15-20 minutes, with time saved

better spent doing engineering analysis instead of calculations" Alva-Argaez said.

The flexibility of the HYSYS software enables users to measure various emissions from facilities with a relatively quick set-up time to tailor a simulation model for the effort. Strathman added that a system could leverage existing models.

"When you design a new gas processing facility quite often the design is done in HYSYS so you will build a replica of the plant as you design. Then when you go into operations you can update that model and be able to run analyses of different scenarios. A lot of companies already have the models built – it is just a question of using it in a different way," he said.

- Frank Nieto

Petrohawk Sheds KinderHawk, Eagle Ford Midstream Stakes

Petrohawk Energy Corp., Houston, (NYSE: HK) plans to sell its remaining 50% interest in KinderHawk Field Services LLC, along with a 25% minority interest in its Eagle Ford shale midstream assets, to Kinder Morgan Energy Partners LP, Houston, (NYSE: KMP) for \$920 million.

The latest transaction, in addition to the \$75 million of proceeds from the sale of Petrohawk's Fayetteville midstream assets earlier this year to a subsidiary of ExxonMobil Corp., Irving, Texas, (NYSE: XOM), brings total proceeds from 2011 asset sales to approximately \$1 billion, thereby meeting the company's 2011 divestiture target.

KinderHawk Field Services, a 50/50 joint operating company held by Petrohawk and Kinder Morgan, was formed after Petrohawk divested a 50% stake in its Haynesville shale gathering and treating business for \$875 million in cash

asset to Kinder Morgan Energy Partners. The deal closed in May 2010.

KinderHawk was expected to have an enterprise value of up to \$1.75 billion at inception, making it one of the largest gathering and treating systems in the U.S.

The latest transaction is expected to close by July 1. Barclays Capital Markets is advisor to Petrohawk.

- Nancy Miller



Spectra Energy... (continued from page 1)

and ahead of schedule in April. "As we move ahead to the middle of the decade, further expansion on the Gulfstream Pipeline presents an attractive, competitive alternative to meeting Florida's mandate to replace oil- and coal-fired generation with clean-burning natural gas," he said.

Spectra is also developing several projects in the Marcellus, including the Algonquin Incremental Market, or AIM Project, that would move volumes from the Marcellus to markets in the Northeast and New England, and the Marcellus Ethane Pipeline System project (MEPS).

"MEPS offers Spectra Energy and our partner, El Paso Pipeline Partners, the unique opportunity to transport some 60,000 barrels per day of ethane from fractionation plants in the ethane-rich Marcellus region to pipelines and storage facilities in the Gulf Coast. Recent announcements by Dow Chemicals and others concerning expansion of ethane-based facilities in the Gulf Coast region point to the increased need for ethane. We believe MEPS to be the logical choice to provide the needed transportation to serve this growing demand," he said.

Several other expansion projects that are expected to continue to grow earnings are the Fort Nelson North Expansion, which is on track to be completed in 2012, and the New Jersey-New York project, which is expected to receive FERC certification by the end of this year.

Ebel anticipates further growth in the Horn River and Montney shale, where

the company can expand its current assets, as well as in moving volumes to new markets to support utilities converting to gas-fired power generation like it is doing in Florida.

"We're encouraged by the growing support for the important role of natural gas and the role we can play in meeting the connective goals of energy independence, economic growth and environmental integrity. We expect to see a new wave of opportunities across our system as power generators look seriously at converting older coal- and oil-fired plants to natural and to support greater utilization of existing gas-fired plants," he said.

- Frank Nieto

Regency Energy, ETP To Construct New Fractionation Facility

Energy Transfer Partners, LP, (ETP) and Regency Energy Partners, LP, have reported that Lone Star NGL LLC, the joint venture that acquired the midstream assets of Louis Dreyfus Highbridge Energy, will construct a 100,000 barrels per day natural gas liquids (NGL) fractionation facility at Mont Belvieu, Texas. ETP will utilize a substantial amount of this fractionation capacity to handle NGL barrels it will deliver from its Jackson County, Texas processing plant, which is supported by multiple ten-year contracts with producers as a part of ETP's Eagle Ford shale projects. Additionally, Regency expects to provide barrels to this project.

Lone Star expects to have the fractionation facilities completed by the first quarter of 2013 at an estimated cost of between \$350 and \$375 million. As part of the project, Lone Star will develop additional storage facilities for y-grade

liquids and other components. The project will also include interconnectivity infrastructure to provide NGL suppliers and NGL markets with significant access to storage, other fractionators, pipelines and multiple markets along the Texas and Louisiana Gulf Coast.

"There is a growing demand for fractionation capacity, storage capacity and interconnectivity at Mont Belvieu and this is the first major step toward becoming an even larger service provider in the Mont Belvieu area," said Greg Bowles,

Senior Vice President of Lone Star. "This project is strategic for our long-term growth plans and demonstrates the types of opportunities we intend to pursue to provide our customers comprehensive services in the liquids energy markets."

Resin Prices					
Market Update – April 29, 2011					
TOTAL OFFERS: 16,52	22,172 lbs	SP0T		CONTRACT	
Resin	Total lbs	Low	High	Bid	Offer
PP Copolymer - Inj	5,003,244	0.86	1.05	0.98	1.02
LLDPE - Film	3,042,348	0.76	0.84	0.75	0.79
HDPE - Blow Mold	1,894,828	0.89	1.03	0.96	1.00
LDPE - Film	1,835,036	0.73	0.76	0.70	0.74
HDPE - Inj	1,627,220	0.77	1.00	0.88	0.92
HMWPE - Film	1,488,392	0.67	0.80	0.70	0.74
PP Homopolymer - Inj	440,920	0.76	0.77	0.74	0.78
LDPE - Inj	380,000	0.90	0.90	0.85	0.90
GPPS	380,000	0.98	0.98	0.93	0.98
HIPS	262,184	0.76	0.79	0.77	0.81
LLDPE - Inj	168,000	0.78	0.93	0.84	0.88

Source: Plastics Exchange – www.theplasticsexchange.com

In addition to the Lone Star fractionation project, ETP has advised Lone Star that it is in negotiations with other pipeline operators to secure pipeline capacity that will provide NGL transportation from Jackson County to Mont Belvieu. In

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the event ETP determines it is more prudent to build a new pipeline rather than secure pipeline capacity through another pipeline operator, ETP has advised Lone Star that it will construct a 130-mile, 20-inch pipeline from its Jackson County

NGL processing facility to Mont Belvieu. ETP has also advised Lone Star that the NGL pipeline from its Jackson County facility would provide capacity for barrels currently contracted by ETP and would be able to accommodate significantly

more barrels from the Eagle Ford Shale or from a potential NGL pipeline from west Texas. The capacity of the 20-inch pipeline would be approximately 340,000 barrels per day.

NEWS & TRENDS

Encana Forms JV With Oregon Utility

Encana Oil & Gas (USA) Inc., a subsidiary of Encana Corp., has completed a benchmark upstream joint-venture development agreement with Northwest Natural Gas Company, a Portland, Oregon-based natural gas distributor. The Public Utility Commission of Oregon recently approved the agreement that will see Northwest Natural invest about \$250 million during the next five years to earn a working interest in certain sections of Encana's Jonah field in Wyoming. The arrangement provides NW Natural with secure, reliable and economic supplies of natural gas for a portion of the needs of its 674,000 customers.

"This is a landmark agreement and regulatory step that we believe will open the door for future upstream investment by utilities seeking price stability for their customers – transactions that are backed by utility ratepayers and supported by regulators as prudent investments. As a leading producer, Encana has heard end-users' requests for structures that provide long-term price security, and under this agreement, we are able to achieve both our customer's goal and efficiently advance the development of a portion of the Jonah field," says Renee Zemljak, Encana's Executive

Vice-President, Midstream, Marketing & Fundamentals.

Traditionally, utilities have purchased natural gas on short-term contracts from wholesale markets, with customers subject to fluctuating prices. Under this transaction, in order to reduce price uncertainty for consumers, NW Natural will invest approximately \$45 million to \$55 million per year for the next five years earning a working interest in certain sections of Jonah natural gas field. This direct producer-utility deal helps secure long-term natural gas supply for NW Natural at the cost of production rather than at future market prices.

"This agreement and the commission's order represent a lot of hard work by a lot of parties over a short period of time, and we are pleased the commission approved the transaction," says NW Natural president and chief executive Gregg Kantor. "This is a terrific outcome for both customers and shareholders."

"This transaction is another of Encana's many joint-venture arrangements that provide attractive investment opportunities and reliable, economic supplies of natural gas to a variety of counterparties. These transactions help serve our customers' needs and accelerate the

value recognition of Encana's enormous resource potential," Zemljak says.

In the past few years, Encana has established numerous joint ventures in Canada and the U.S., many that involve other natural gas producers, as well as industrial firms and national oil companies. In 2011, joint ventures are expected to result in about \$840 million of additional capital investment on Encana lands. Encana recently announced plans to attract new joint venture partners on selected assets in the Horn River basin and its Greater Sierra lands. Encana is also offering an acquisition opportunity for a portion of its producing Greater Sierra resource play. This new joint venture initiative builds on previous announcements of a farm-out agreement with Kogas Canada Ltd., a subsidiary of Korea Gas Corp., in the Horn River and Montney formations and a planned joint venture and acquisition by Petro-China International Investment Co. Ltd. of a 50% interest in Encana's Cutbank Ridge business assets. RBC Capital Markets and Jefferies & Company, Inc. have been retained by Encana to conduct the potential joint venture and divestiture processes on the Horn River and Greater Sierra assets.

Enbridge To Expand Haynesville Shale Infrastructure

Enbridge Energy Partners LP, Houston, (NYSE: EEP) plans to invest an additional \$175 million to expand its East Texas system. The partnership

has signed long-term agreements with several major natural gas producers on the Texas side of the Haynesville shale to provide gathering, treating and

transmission services in Shelby, Sabine, San Augustine and Nacogdoches counties. The projects involve construction of gathering and related market outlet

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pipelines and related treating facilities in the Texas Haynesville shale.

"We are pleased to announce these new projects for our customers in the Texas Haynesville shale region. Our East Texas system is well positioned with substantial infrastructure and unmatched access to numerous intrastate and interstate connecting pipelines. We envision additional infrastructure development for our customers beyond what we've already committed in this region," says Mark Maki, president of the partnership's management company. "We consider the Texas Haynesville to be one of the best natural gas plays in North America and expect long-term fundamentals to support development of this resource well into the future. These projects will support continued growth in cash flow and distributions for our unit holders."

Range Signs MOU With NOVA Chemicals For Marcellus Ethane

NOVA Chemicals Corp. has reported it signed a memorandum of understanding with a wholly-owned subsidiary of Range Resources Corp. for a long-term supply of ethane from the Marcellus shale.

"We are very pleased to be working with Range Resources as one of the key feedstock suppliers for our Corunna cracker," says Randy Woelfel, chief executive. "With the execution of this memorandum of understanding, we have made significant progress towards realizing our goal of assuring our Corunna cracker is the destination of choice for Marcellus-based natural gas liquids."

In addition to finalizing a definitive purchase and sale agreement with Range Resources, and customary reviews and approvals, the arrangement is subject to NOVA Chemicals finalizing a pipeline transportation agreement to transport ethane from the Marcellus shale into the Sarnia, Ontario petrochemical market.

ETP-Regency JV Acquires Midstream Assets From Louis Dreyfus Highbridge Energy

Energy Transfer Partners LP and Regency Energy Partners LP announced that they, through their joint venture, ETP-Regency Midstream Holdings LLC, have completed the previously announced acquisition of LDH Energy Asset Holdings LLC from Louis Dreyfus Highbridge Energy LLC for approximately \$1.925 billion in cash, before purchase price adjustments.

ETP contributed approximately \$1.348 billion in exchange for a 70% ownership interest in ETP-Regency LLC, while Regency contributed approximately \$577.5 million in exchange for a 30% ownership interest in ETP-Regency LLC. ETP-Regency LLC will be managed by a two-person board of directors, with ETP and Regency each having the right to appoint one director. ETP will operate the assets on behalf of the joint venture with the assistance of certain existing LDH employees.

LDH owns and operates a natural gas liquids, or NGL, storage, fractionation

and transportation business, primarily in Texas and Louisiana. The acquisition of LDH is expected to significantly expand ETP's and Regency's asset portfolios, adding an NGL platform with storage, transportation and fractionation capabilities. Additionally, this acquisition will provide both ETP and Regency with additional consistent feebased revenues.

ABB Wins \$151 Million Oil, Gas Order In Congo-Brazzaville

ABB, Zurich, Switzerland, has reported it has won a \$151 million order from the energy company Eni Congo SA to engineer, build and commission a new natural gas compression station and treatment plant in the Republic of Congo (Congo-Brazzaville). The order was booked in the first quarter.

The new plant will be located at the onshore M'Boundi oil field near the Atlantic coast, and will provide compressed natural gas to power the turbines at two nearby power plants in Djeno. These plants currently supply most of the country's electricity.

The project is part of Congo's "zero flaring" program, set up to reduce emissions from the burning of excess fuel and use locally extracted energy more efficiently. Natural gas that was previously flared off and wasted at existing oil processing operations will instead be used to substantially increase Congo's power generating capacity, and provide

the country with a reliable source of electricity. Excess gas will be re-injected into the reservoir.

ABB will provide overall project management, engineering, procurement, construction supervision, commissioning and start-up services, as well as performance testing of the gas compression and gas treatment processes. The plant is scheduled for completion in under two years.

"This contract underscores ABB's ability to execute all aspects of complex

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projects for the oil and gas industry," said Veli-Matti Reinikkala, head of ABB's Process Automation division. "Our commitment to help our customers reach their sustainability goals while achiev-

ing their production targets, together with our successful long-term relationship with this customer, helped us win this important order." In 2008, ABB won the contract to build a 320 megawatt (MW) power plant in Djeno. The plant started operations in 2010.

PIPELINES & TECHNOLOGY

ONEOK Partners To Build Gulf Coast NGL Pipeline, Fractionator

ONEOK Partners, LP announced plans to invest approximately \$910 million to \$1.2 billion between now and late 2013 in order to:

- Construct a new 570-plus-mile, 16-inch diameter natural gas liquids (NGL) pipeline, the Sterling III Pipeline, to transport either unfractionated NGLs or NGL purity products from the Mid-Continent region to the Texas Gulf Coast;
- Reconfigure its existing Sterling I and II NGL distribution pipelines to transport either unfractionated NGLs or NGL purity products; and
- Build a new 75,000 barrel-per-day (bpd) NGL fractionator, MB-2, at Mont Belvieu, Texas.

"These projects will accommodate the growing NGL supplies in the Mid-Continent and elsewhere and help alleviate the infrastructure constraints between the Mid-Continent and Gulf Coast markets, while meeting the requirements of natural gas processors and NGL customers," says Terry K. Spencer, ONEOK Partners chief operating officer.

Supply commitments, which are in various stages of negotiation for both the new pipeline and fractionator, will be anchored by NGL production from third-party processors.

In aggregate, these projects are expected to generate EBITDA (earnings before interest, taxes, depreciation and amortization) multiples of five to seven times. The incremental fee-based earn-

ings from these projects are expected to increase distributable cash flow and value to unitholders.

Constructing Sterling III Pipeline and Reconfiguring Sterling I and II Pipelines:

The new Sterling III Pipeline will cost approximately \$610 million to \$810 million and will have an initial capacity to transport 193,000 bpd of either unfractionated NGLs or NGL purity products from the partnership's NGL infrastructure at Medford, Okla., to its storage and fractionation facilities at Mont Belvieu. Once complete, it will double the partnership's current pipeline capacity between Medford and Mont Belvieu.

The investment also includes reconfiguring the existing Sterling I and II pipelines - which currently distribute NGL purity products between the Mid-Continent and Gulf Coast NGL market centers - to transport either unfractionated NGLs or NGL purity products.

"Building this new pipeline and reconfiguring our existing Sterling I and II pipelines give us the flexibility to transport and optimize the flow of unfractionated or purity NGLs through all three pipelines," Spencer says. "These pipeline projects, along with our previously announced Arbuckle Pipeline and Sterling I Pipeline expansions, further enhance our ability to transport NGLs – either unfractionated or purity products – to Gulf Coast markets."

The Sterling III Pipeline will complement the partnership's existing Sterling I and II pipelines, and when operational

all three Sterling pipelines will be capable of transporting either unfractionated NGLs or purity NGL products. Construction is expected to begin in early 2013, following receipt of necessary permits and the acquisition of right of way; it is anticipated that a portion of the existing right of way on the Sterling I and II pipelines can be used. Completion is scheduled in late 2013. With additional pump stations, the Sterling III Pipeline's capacity can be expanded to 250,000 bpd.

The Sterling III Pipeline will traverse the NGL-rich Woodford Shale that is currently under development, as well as provide transportation capacity for NGL production from the growing Cana-Woodford Shale and Granite Wash, where it can gather unfractionated NGLs from the new natural gas processing plants that are being built as a result of increased drilling activity in these areas.

Constructing a New Mont Belvieu, Texas, NGL Fractionator:

The new MB-2 fractionator will cost approximately \$300 million to \$390 million to construct and will supplement the partnership's 80-percent owned, 160,000-bpd MB-1 fractionator in Mont Belvieu. Its initial 75,000 bpd capacity can be expanded to 125,000 bpd to accommodate additional NGL volumes as they are added to the currently expanding Arbuckle Pipeline and the new Sterling III Pipeline and the Sterling I and II reconfiguration.

"The additional capacity from the new and reconfigured pipelines and the new

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fractionator at Mont Belvieu will enable us to better serve our petrochemical customers who are expanding their facilities or converting existing facilities to utilize price-advantaged NGL feedstocks," Spencer adds. The partnership recently submitted a permit application to build the 75,000 bpd fractionator to the Texas Commission on Environmental Quality. Following receipt of all necessary permits, construction of the fraction-

ator is scheduled to begin in 2011 and is currently expected to be completed in mid-2013.

Enterprise, In Agreement With Chesapeake, Will Extend Eagle Ford Pipeline

Enterprise Products Partners LP, Houston, has reported plans to build an 80mile extension of its 350,000 barrel per day (BPD) Eagle Ford Shale crude oil pipeline that would allow the partnership to serve growing production areas in the southwestern portion of the play. The Phase 2 project would originate in Wilson County, Texas, at the terminus of the partnership's previously announced 140-mile Phase 1 segment, and extend to a site near Gardendale, Texas, in La Salle County, where a new central delivery point (CDP) is planned for construction that will feature 500,000 barrels of storage. Phase I is on schedule to begin service by the second quarter of 2012, with Phase 2 set to commence operations in the first guarter of 2013. When completed, the approximately 220-mile crude oil pipeline system will provide Eagle Ford Shale producers with access to the Texas Gulf Coast refining complex through Enterprise's integrated midstream network.

The Phase 2 extension, which is being designed with a capacity of 200,000 BPD, is anchored by a 10-year agreement with Chesapeake Energy Marketing Inc., a subsidiary of Chesapeake Energy Corp., that Enterprise also announced today.

As part of the long-term contract, Chesapeake has committed to 100,000 BPD of firm crude oil transportation capacity.

"We are very pleased to expand our relationship with Chesapeake in the Eagle Ford Shale by adding crude oil transportation to the various natural gas services Enterprise is already providing under long-term contracts," says A.J. "Jim" Teague, executive vice president and chief operating officer of Enterprise's general partner. "Including the Chesapeake agreement, we now have producer commitments for nearly all of the available capacity on Enterprise's Eagle Ford crude oil pipeline, with 320,000 BPD under 10-year contracts."

With more than 2.5 million acres under lease and potentially 15,000 wells to be drilled over the production life of the Phase 2 service area-based on the partnership's own research and information from producers-development activity in this region of the Eagle Ford Shale is expected to remain brisk for the foreseeable future. Estimates provided by producers also suggest that up to 3 billion barrels of crude oil are recoverable in the southwestern region of the play.

The Phase 2 project would address the lack of pipeline infrastructure in the

southwestern crude oil production region of the Eagle Ford Shale and provide shippers with access to Enterprise's Sealy, Texas, delivery point. The Sealy facility interconnects with the partnership's Rancho Pipeline and feeds into Enterprise's new ECHO crude oil storage terminal being constructed at a location along the Houston Ship Channel in southeast Harris County, Texas. The pipeline options available to shippers via the terminal would provide access to more than two million BPD of refining capacity in the Houston area.

Teague further stated, "Typical of the strategy that has positioned Enterprise as a key provider of midstream services in the Eagle Ford Shale, this latest agreement leverages our existing integrated network of assets to create a cost-effective and timely solution that will allow Chesapeake to maximize the value of their production by providing access to the largest refining market in the world."

Approximately 165 rigs are presently working in the Eagle Ford Shale, which have drilled more than 1,200 wells. Current production from the play is approximately 100,000 BPD of crude oil and condensate.

Williams Partners Completes Two Pipeline Expansions

Williams Partners LP, Tulsa, Okla., has placed into service two expansions on its Transco natural gas pipeline, adding a combined 598,500 dekatherms per day of

firm transportation capacity to serve markets in the southeastern United States.

Placed into service May 1, 2011, new service from the Mobile Bay South II expansion project created an additional 380,000 dekatherms per day of south-bound firm transportation capacity on the Mobile Bay Lateral from Transco's

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mainline at Station 85 near Butler, Ala., to its interconnect with Gulfstream Natural Gas System in Coden, Ala. The project cost was approximately \$35 million.

Also placed into service May 1 was the second phase of the company's 85 North expansion project, increasing the Transco pipeline's capacity by an additional 218,500 dekatherms per day to serve electric power generating facilities in North Carolina. Phase I of the 85 North expansion was placed into service in July

2010, adding capacity to transport an additional 90,000 dekatherms of natural gas per day to markets in Alabama. The total cost of the two phases of the project was approximately \$227 million.

"Within the past year, we have announced or placed into service projects that will provide more than 1 million dekatherms of firm transportation capacity from Transco's Station 85 to customers throughout the Southeast," says Randy Barnard, president of Williams'

natural gas pipeline business. "It is a great example of how Williams is working closely with its customers to fuel the increasing demand for electric power generation throughout the Southeast with clean-burning natural gas."

The Transco pipeline is a 10,000-mile pipeline system which transports natural gas to markets throughout the northeastern and southeastern United States. The current system capacity is approximately 9 billion cubic feet per day.

NGL PRICES

Despite Increased Pricing, Ethane Faces Near-Team Oversupply Issues

Natural gas liquid (NGL) prices continued to gain strength the week of April 27 due to the ramp up in crude prices. Indeed, the last time that most of these NGL prices were this high was in 2008, which was the last time that oil had consistently traded at more than \$100 per barrel.

The biggest gain posted at both Mont Belvieu and Conway was for propane, which is undersupplied at both hubs. Wells Fargo Securities LLC reported in its *NGL Snapshot* that the market was undersupplied by 470,000 barrels per day (b/d) in the January heating season. Despite increased production of propane thus far this year, demand for the year has increased 1% from last year from both the heating and petrochemical markets and the market hasn't quite caught up to supplies.

The Mont Belvieu price rose 6% to \$1.58, the highest price at the hub since it was \$1.60 the week of September 3, 2008. The Conway price was up 5% to \$1.46, its highest price since it was \$1.48 the week of September 17, 2008.

While ethane prices moved at a slower rate this week than during the past several weeks, they maintain the largest gains thus far this year. Although the U.S. petrochemical industry has been proving its ability to effectively utilize as much ethane as producers can send their way, Wells Fargo stated that there is a possibility of a temporary oversupply of ethane in 2013-14 due to the pace of fractionation capacity build-out at Mont Belvieu. However, the firm added that, long-term, ethane may be short in 2016-17 by 40,000 to 110,000 b/d due to the construction of two world-scale ethylene crackers in the region.

A recent research report from Morgan Stanley also backs up this claim by noting that the 2012 and beyond ethane balance was tipping towards oversupply. "While these [two ethylene crackers] should boost demand for NGLs (primarily ethane) we

NGL PRICES						
Mont Belvieu	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
April 27 - May 3, '11	83.46	158.38	199.94	210.30	268.58	\$66.04
April 20 - 26, '11	81.55	148.10	193.73	205.30	259.75	\$63.46
April 13 - 19, '11	73.13	142.06	185.18	201.58	251.30	\$60.33
April 6 - 12, '11	70.88	140.76	187.50	202.40	249.50	\$59.84
April '11	75.74	144.44	189.72	203.15	256.33	\$61.63
March '11	68.59	139.76	181.80	192.01	243.97	\$58.42
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
2nd Qtr '10	50.97	108.43	145.01	157.23	178.04	\$44.64
April 28 - May 4, '10	55.21	114.40	153.80	167.68	202.30	\$48.40
Conway, Group 140	Eth	Pro	Norm	Iso	Pen+	NGL Bbl
April 27 - May 3, '11	56.23	146.30	183.33	199.00	258.13	\$59.09
April 20 - 26, '11	55.50	137.48	177.90	199.98	251.53	\$57.21
April 13 - 19, '11	50.36	131.40	170.28	195.50	241.18	\$54.43
April 6 - 12, '11	55.88	131.12	175.00	200.55	243.60	\$55.84
April '11	54.31	134.59	175.54	199.58	246.21	\$56.18
March '11	50.44	129.33	169.43	190.30	244.91	\$54.26
1st Qtr '11	46.30	128.26	164.69	186.06	225.91	\$51.80
4th Qtr '10	47.01	120.80	157.16	161.69	193.86	\$47.80
3rd Qtr '10	31.16	101.46	132.39	141.93	163.91	\$39.04
2nd Qtr '10	31.56	103.03	130.96	145.20	172.55	\$39.90
April 28 - May 4, '10	35.95	110.85	144.23	155.00	190.83	\$43.75

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

still see steady growth from natural gas producers leading to a moderately oversupplied scenario in 2012+," the report said.

"The key risk to our positive long-term outlook for ethane is a meaningful drop in operating rates (i.e., below the 90% level assumed in our analysis), which could occur if U.S. export activity softens in response to reduced global demand for plastics

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and/or the ramp-up of cost-advantaged ethylene derivative exports out of the Middle East and Mexico," according to Wells Fargo.

Mont Belvieu ethane increased 2% to 84¢, its highest price since it was 95¢ the week of September 3, 2008. Ethane at Conway improved by 1% to 56¢, its highest price in a month.

Although not increasing in value as quickly as their light counterparts, heavy NGLs maintained the highest prices at

both hubs. Butane had the largest growth at each location as it rose 3% in value at both Mont Belvieu and Conway. The NGL surpassed the \$2.00 threshold at Mont Belvieu, which was its highest price since the week of July 30, 2008, when it was \$2.04. The Conway price of \$1.83 was the highest at the hub since the week of August 20, 2008, when it was \$1.84.

Pentanes-plus (C_{5+}) prices were by far the highest at both hubs as they rose 3% to \$2.69 at Mont Belvieu and 2% to \$2.58 at Conway. The Mont Belvieu price was the highest since it was \$2.92 the week of July 16, 2008, while the Conway price was the highest since it was \$2.67 the week of July 30, 2008.

The lone NGL to drop in value at either hub the week of April 27 was Conway isobutane, which fell 1¢ to \$1.99. Meanwhile, Mont Belvieu isobutane improved by 2% to \$2.10, its highest price since it was \$2.34 the week of July 16, 2008.

Current Frac Spread (Cents/Gal)

- Frank Nieto

FRAC SPREAD

Frac Spread Margins Tempered By Higher Dry Gas Prices

Several natural gas liquid (NGL) frac spread margins experienced drops the week of April 27 despite largely increased NGL prices. In the cases of both Conway and Mont Belvieu ethane, increased natural gas feedstock prices resulted in lower margins from the prior week. Conway isobutane also suffered from a slight drop in price at the hub.

Natural gas feedstock prices increased 7% to \$4.51 per million Btu (/MMBtu) at Conway and 8% to \$4.58/MMBtu at Mont Belvieu. Despite these increases frac spread margins were up in all but the aforementioned cases.

The largest increase in margin at both hubs was for propane, which improved by 6% from the previous week at Conway and by 7% from the prior week at Mont Belvieu. The second largest gain in margin at Con-

way was for butane at 2% while C_{5+} had the second largest improvement in margin at Mont Belvieu at 2%.

The theoretical NGL barrel price improved by 4% at Mont Belvieu to \$66.04 per barrel (/bbl) with a margin improvement of 3% to \$49.31/bbl. The Conway theoretical barrel price rose by 3% to \$59.09/bbl with a margin improvement of 2% to \$42.61/bbl.

The most profitable NGL to make at both hubs was C_{5+} at \$2.08 per gallon (/gal) at Conway and \$2.18/gal at Mont Belvieu. This was followed, in order, by isobutane at \$1.54/gal at Conway and \$1.65/gal at Mont Belvieu; butane at \$1.37/gal at Conway and \$1.53/gal at Mont Belvieu; propane at \$1.05/gal at Conway and \$1.16/gal at Mont Belvieu; and ethane at 26¢/gal at Conway and 53¢/gal at Mont Belvieu. (continued)

Gurre	iii riac op	read (Cents	/uai)	
May 5, 2011	Conway	Change from Start of Month	Mont Belvieu	Start of Month
Ethane	56.23		83.46	
Shrink	29.90		30.37	
Margin	26.33	-4.79%	53.09	-0.52%
Propane	146.30		158.38	
Shrink	41.31		41.95	
Margin	104.99	6.04%	116.43	6.65%
Normal Butane	183.33		199.94	
Shrink	46.77		47.49	
Margin	136.56	1.65%	152.45	1.86%
Iso-Butane	199.00		210.30	
Shrink	44.92		45.62	
Margin	154.08	-2.57%	164.68	1.05%
Pentane+	258.13		268.58	
Shrink	50.02		50.79	
Margin	208.11	1.54%	217.79	2.43%
NGL \$/Bbl	59.09	3.28%	66.04	4.06%
Shrink	16.48		16.73	
Margin	42.61	1.77%	49.31	2.86%
Gas (\$/mmBtu)	4.51	7.38%	4.58	7.76%
Gross Bbl Margin (in cents/gal)	97.60	1.95%	114.83	3.02%
	NGL Value	in \$/mmBtu		
Ethane	3.10	1.32%	4.59	2.34%
Propane	5.08	6.42%	5.50	6.94%
Normal Butane	1.98	3.05%	2.16	3.21%
Iso-Butane	1.24	-0.49%	1.31	2.44%
Pentane+	3.33	2.62%	3.46	3.40%
Total Barrel Value in \$/mmbtu	14.72	3.40%	17.02	4.12%
Margin	10.21	1.73%	12.44	2.84%

Source: 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.

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Natural gas in storage for the week of April 29, the most recent data available from the Energy Information Administration, increased by 72 billion cubic feet to 1.757 trillion cubic feet (Tcf) from 1.685 Tcf the previous week. This was 11% below the figure of 1.983 Tcf reported last year at the same time

and 1% below the five-year average of 1.774 Tcf.

The storage levels should be tempered this coming week, judging by the forecast from the U.S. National Weather Service. The forecast is calling for normal spring temperatures in most of the Northeast and Atlantic Coast, which

should increase cooling days. The forecast for the Southeast and Southwest is calling for warmer than normal spring weather while the forecast for the Midwest and parts of the Pacific Northwest is calling for cooler than normal weather.

- Frank Nieto

SNAPSHOT

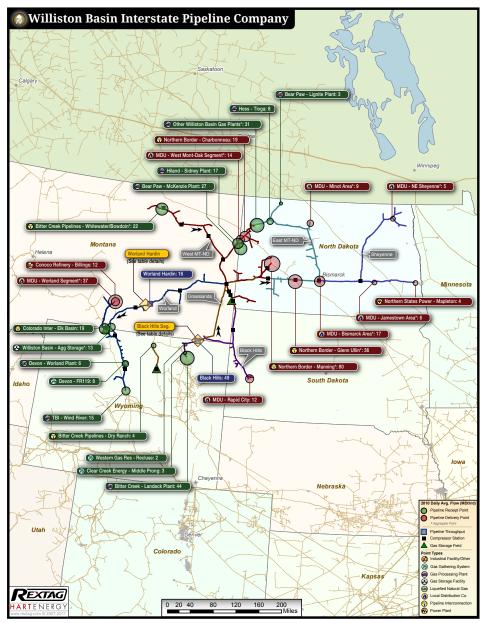
Williston Basin Pipeline To Benefit From Liquids Production

The Williston Basin Pipeline, owned by MDU Resources Group, provides natural gas transportation, storage and gathering services through an interstate pipeline system located in Montana, North Dakota, South Dakota and Wyoming.

Operated by Williston Basin Interstate Pipeline Company, it has 30 compressor stations and is approximately 3,700 miles, according to Hart Energy Mapping and Data Services. Williston Basin, which is regulated by the Federal Energy Regulatory Commission, maintains two headquarters locations, one for administrative functions in Bismarck, N.D., and an operations headquarters in Glendive, Mont. In addition, Williston Basin maintains field offices in Baker, Mont., and in Worland, Wyo.

According to the company website, the system is strategically located near five natural gas-producing basins and contains three underground storage fields in Montana and Wyoming. Eleven interconnecting points in other pipelines allow for the receipt and delivery of natural gas throughout the country and to Canada.

Pipeline operators are gearing up to increase take-away capacity from the Williston Basin to nearly 1 million barrels per day (b/d) by year-end 2013, according to Jim Volker, Whiting chairman and chief executive. According to data



Source: Hart Energy Mapping and Data Services

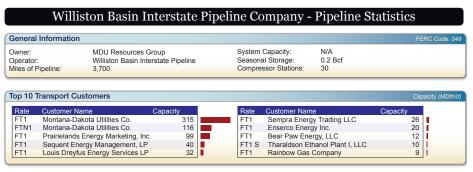


from Bakken operator Whiting Petroleum Corp., production there has gone from virtually zero several years ago to some 400,000 b/d.

Montana-Dakota Utilities Co. (FT1) is its highest transport customer with 315,000 dekatherms per day (Dth/d) of capacity; followed by Montana-Dakota Utilities Co. (FTN1) with 116,000 Dth/d. The rest of the top 10 are Prairielands Energy Marketing Inc. with 99,000 Dth/d; Sequent Energy Management, LP, with 40,000 Dth/d; Louis Dreyfus Energy Services, LP, with 32,000 Dth/d; Sempra Energy Trading LLC with 26,000 Dth/d; Enserco Energy Inc. with 20,000 Dth/d; Bear Paw Energy LLC with 12,000 Dth/d; Tharaldson Ethanol Plant I, LLC 10,000 Dth/d; and Rainbow Gas Co. with 9,000 Dth/d.

WBI-Aggregate Storage (Withdrw) was the top receipt point for 2010, and WBI-Aggregate Storage (Inject) was the top delivery point for 2010.

- Rebecca Torrellas



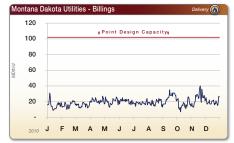
Source: Hart Energy Mapping and Data Services

Williston Basin Interstate Pipeline Company - Major Receipt & Delivery Points

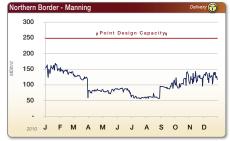
















Source: Hart Energy Mapping and Data Services



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Contact Information:

FRANK NIETO Editor fnieto@hartenergy.com

REBECCA TORRELLAS

Online News Editor rtorrellas@hartenergy.com

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SHARON COCHRAN Circulation Coordinator

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

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