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Look Out, OPEC. Here Comes U.S. Shale ... Again!

Energy M&A Surges in North America

Oil's Balance Hinges on OPEC's Pull and the U.S.'s Push

Natural Gas: U.S. Supply Goes Global

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Look Out, OPEC. Here Comes U.S. Shale ... Again!

By WILLIAM FOILES

Oil Production

OPEC AND U.S. exploration and production companies (E&Ps) may be set for a second spell of turbulence after weathering a 75 percent fall in oil prices from June 2014 to February 2016.

This time, however, U.S. E&Ps are better prepared, armed with healthier balance sheets and significant productivity gains.

With U.S. oil production growth picking up momentum, and the possibility of the Organization of the Petroleum Exporting Countries abandoning supply cuts in June, oil prices may be effectively capped this year barring unforeseen supply disruptions or further OPEC reductions.

Bloomberg Intelligence (BI) analysis and data, as well as Bloomberg's Commodities Studies function **{COSY <GO>}**, allow U.S. shale production trends to be analyzed.

U.S. E&P operations have become more efficient since OPEC declared its first market share war in November 2014. The companies are now creating bigger wells faster than ever but are doing so using less capital.

A horizontal rig today is capable of drilling 18.8 wells in a year, a 37 percent increase from the



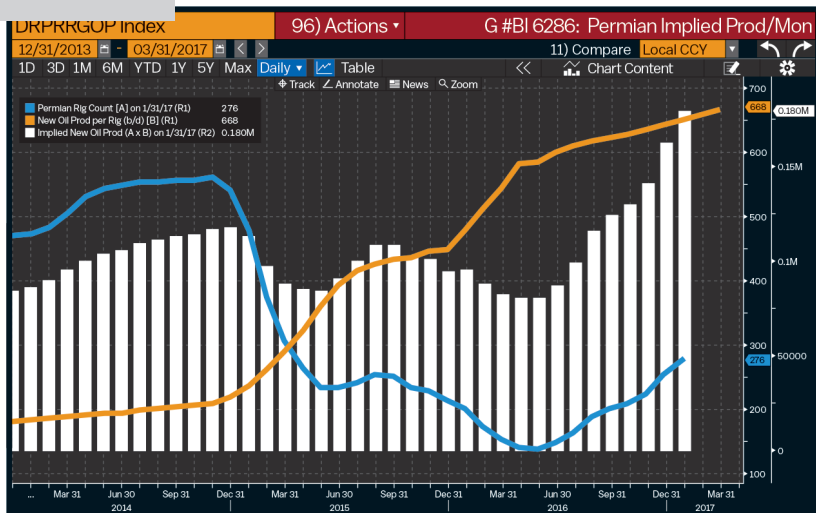
fourth quarter of 2014, even as the average lateral length of those wells grew 583 feet, or 9.8 percent.

As a result, one drilling rig today packs much more punch than just two years ago, as witnessed by the amount of new oil produced per drilling rig, a metric tracked by the U.S. Energy Information Administration, which has risen 215 percent in the Permian Basin—the biggest U.S. shale region—since November 2014. This can be seen in the BI chart below. On the Bloomberg terminal, it can be accessed by typing **{G #BI 6286 <GO>}**.

Oil production from the Big Four U.S. shale oil regions (Permian, Eagle Ford, Bakken, and Niobrara) is likely to have topped 4.75 million barrels per day in March, an increase of 161,000 bbl/d since bottoming in August 2016, driven almost entirely by the Permian, as seen in the chart on page 3. On the Bloomberg terminal, this can be found at **{G #BI 6284 <GO>}**.

If oil were to trade at \$50 to \$60 per barrel, U.S. production would average 9.22 million bbl/d in 2017, BI projects, a 336,000 bbl/d increase from 2016. U.S. output will average a record 9.73 million bbl/d in 2018,

The number of rigs operating in the U.S.'s Permian Basin shale oil region is rising, as is the amount of oil produced per well. **{G #BI 6286 <GO>}**



the EIA projected in March. The Permian will likely be the chief catalyst behind 2017 gains, according to BI, ending the year producing more than 2.6 million bbl/d, 27 percent more than in 2016.

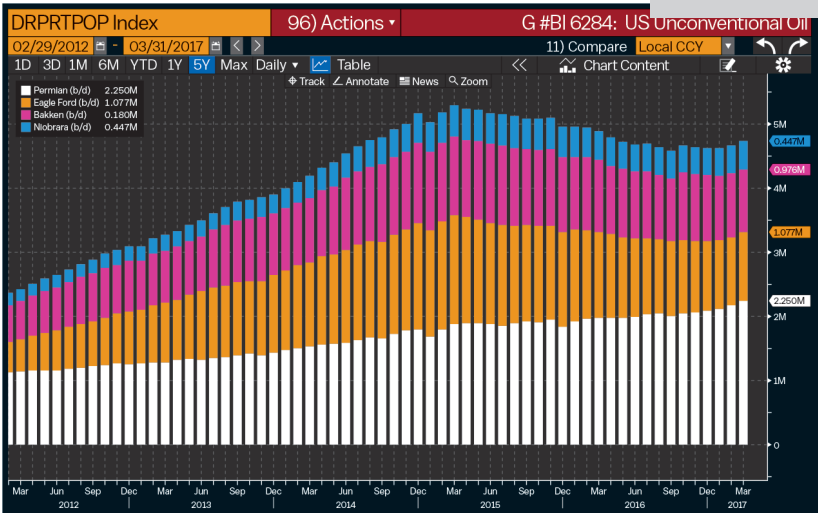
Despite global oil demand growing 1.6 million bbl/d in 2016 and a projected 1.4 million bbl/d in 2017, according to the International Energy Agency, the market may find it difficult to accommodate higher output from both OPEC and the U.S. if the producer group ends cutbacks in June.

There's also the possibility that Nigeria and Libya, two OPEC members exempt from the cartel's cuts, may be able to increase their output in the coming quarters, adding yet more barrels to the equation.

This potential supply increase may mean oil will struggle to rise above \$65 per barrel this year without further OPEC output reductions or unforeseen supply disruptions. ●

Foiles is an energy analyst at Bloomberg Intelligence in New York. This article was edited by the News department. wfoiles1@bloomberg.net

Permian Basin output will climb 27 percent in 2017, to 2.6 million bbl/d, Bloomberg Intelligence projects. Shale will account for about 80 percent of U.S. production growth. {G #BI 6284 <GO>}



Energy M&A Surges In North America

By TODD SIBILLA

Deals

NORTH AMERICAN ENERGY-SECTOR mergers and acquisitions have jumped about 300 percent in the first months of 2017, paced by pipeline operator consolidation. Gas utility M&A also is increasing, led by Canada-based AltaGas Ltd.'s announced \$6.3 billion takeover of the U.S.'s WGL Holdings Inc.

With President Donald Trump pledging to cut regulations and encourage U.S. energy production, the dealmaking is likely to continue.

Enter **{MA <GO>}** for Bloomberg's main Mergers

& Acquisitions dashboard. It lets terminal users track deals and trends and helps identify possible targets.

Untick the small boxes next to Investment and Other in the upper left of the screen, and then click North

Filter mergers and acquisitions by geography or industry, and view league tables, using the Mergers & Acquisitions dashboard **{MA <GO>}**.

Search On		92) Actions		93) Settings		Mergers & Acquisitions	
M&A		Investment		Other		Date Range	
Energy		North America		Year-to-Date		Currency USD	
1) Overview		2) Deal Breakdown		3) Capital Flow		4) League Table	
Deal Status Breakdown		Geographic Breakdown		Industry Breakdown		# of Deals	
Current Status		Value		Count		Target Region	
All		61.3B		136		North America	
11) Pending		52.1B		52		United States	
12) Completed		5.9B		73		Canada	
13) Proposed		3.3B		11		YoY(%)	
						61.3B	
						387.1%	
						60.2B	
						619.5%	
						1.1B	
						74.3%	
						Energy	
						61.3B	
						387.1%	
						33.5B	
						1.5A	
						15.5B	
						157.3%	
						9.0B	
						462.6%	
						3.8B	
						45.6%	

						-100.0%	
Deal List		Sort by		Recent		Largest	
M Type		Ann Date		Target		Acquirer	
101)		02/01/17		ONEOK Partners LP		ONEOK Inc	
102)		01/09/17		Williams Partners LP		Williams Cos Inc/The	
103)		01/17/17		Unnamed Target		Exxon Mobil Corp	
104)		01/16/17		Clayton Williams Energy...		Noble Energy Inc	
105)		02/07/17		Permian Midlan oil & gas...		Parsley Energy Inc	
106)		01/04/17		DCP Midstream assets		DCP Midstream LP	
107)		01/12/17		Eagleford Shale assets...		Multiple acquirers	
108)		02/02/17		US onshore fracking as...		Potential Buyer	
109)		01/09/17		Williams Partners LP		Williams Cos Inc/The	
110)		02/24/17		FTP Power LLC		Multiple acquirers	
111)		01/24/17		Alpha Holding Co LLC		Plains All American Pipeline LP	

91) Send		92) Export		93) Definitions		Mergers & Acquisitions: M&A Transaction Details				
Target	1) WGL Holdings Inc WGL US Px USD 82.74 Gas-Distribution			Acquirer	2) AltaGas Ltd ALA CN Px CAD 31.07 Pipelines		Currency	USD ▾		
							Announcement	01/25/17		
							Transaction Value	6,289.42M		
Details		Trading Comps								
11) Summary		Compare trading multiples against comparable companies (Bloomberg Comps from RV). Both								
12) Timeline		Bloomberg Comps and multiples are as of deal announcement date.								
13) Parties		<input checked="" type="checkbox"/> Median <input type="checkbox"/> Average <input type="checkbox"/> Min <input type="checkbox"/> Max Zoom — + 100% ▾								
14) Structure										
15) Financing										
16) Advisers										
17) Approvals										
18) Sources/News										
19) Financials										
20) Product Line										
21) Deal Comps										
22) Trading Comps										
23) Arbitrage										
Quick Links										
24) Model MRGC »										
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Oil's Balance Hinges on OPEC's Pull and the U.S.'s Push

By ZEF LOKHANDWALLA

Supply & Demand

Run **{CL1 Comdty CCRV <GO>}** to generate the WTI oil futures curve. Click the 6M button to add the shape of the curve from six months earlier and see how the economics of crude have changed.

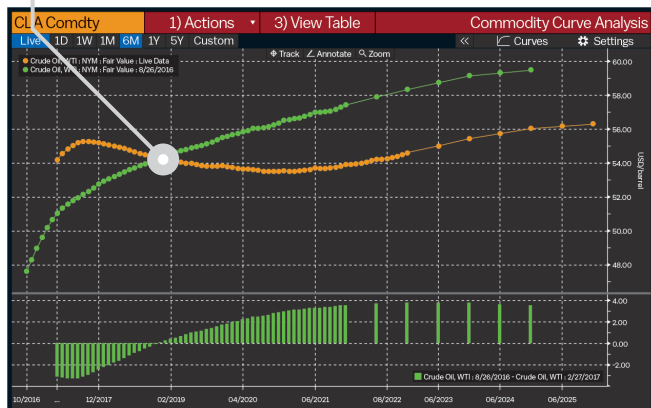
OPEC'S DECISION to cut output in late 2016 altered the economics of the crude market. Rising prices led U.S. exploration and production companies (E&Ps) to boost capital expenditure, increasing oil output—and undercutting OPEC's impact.

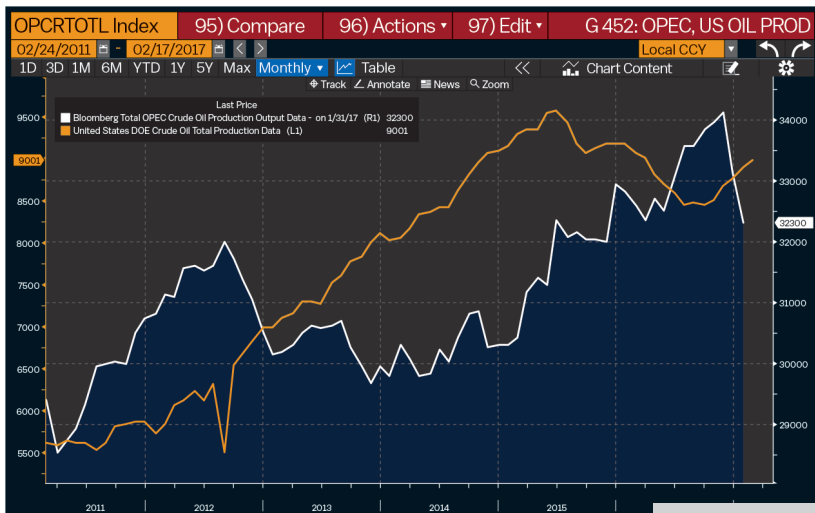
How OPEC and its allies abide with higher U.S. output will likely decide whether the equilibrium oil had found in the mid-\$50s a barrel as of early March lasts.

The oil curve's movement from September to

March shows how the incentives to produce have changed.

Bloomberg's Commodity Curve Analysis tool is among the functions and data available to terminal users to help assess oil's supply and demand trends.





OPEC output (the white line) fell after November 2016, just as U.S. production (amber) was beginning to climb. The {OPEC <GO>} function shows OPEC production and prices.

{CL1 Comdty CCRV <GO>} generates the current WTI futures curve. Click the 6M button to add the curve from six months earlier. In the last few months of 2016 it was in contango, with near-term prices well below outer years, an indicator of oversupply in the market. As of mid-March the curve had markedly flattened.

This “twist” resulted from expectations of less supply in the short term and more production in the longer term.

{FDM <GO>} is Bloomberg’s Commodities Fundamental Data Explorer function, with more than 673,000 sets of data on topics from agriculture to weather. {FDM OPEC OIL PRODUCTION <GO>} brings up about 220 data sets. The first is Bloomberg’s estimate of OPEC’s monthly output. Clicking the Chart Content button allows a user to add U.S. Department of Energy crude oil production data.

OPEC output had dropped about 2 million barrels per day by the end of February, to 32.1 million bbl/d from about 34.1 million bbl/d in late November. U.S. output, though, rose roughly 500,000 bbl/d by the end of February, to about 9 million bbl/d from around 8.5 million bbl/d in September.

U.S. shale oil producers have aggressively lowered costs and improved efficiencies in recent years, allowing them to respond rapidly when crude prices jumped in late 2016.

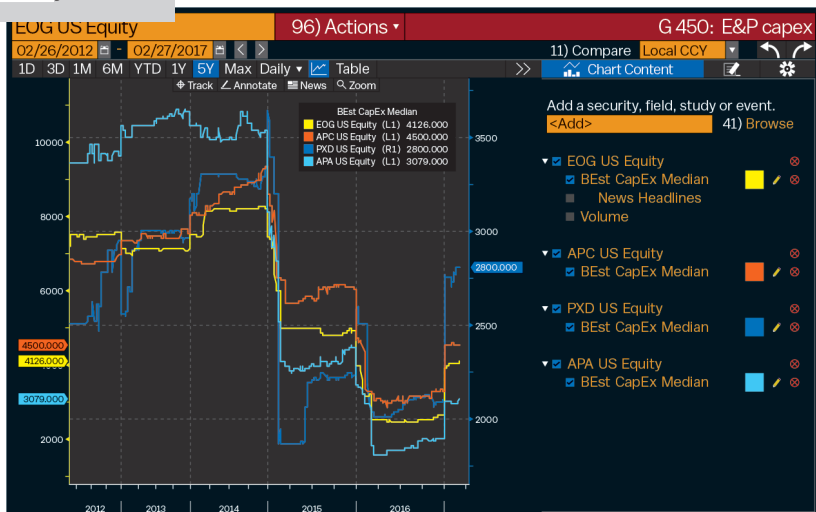
And U.S. output looks set to grow even more.

Several of the biggest domestic exploration and production companies expanded their capital expenditure in early 2017 for the first time since 2015. EOG Resources Inc., Anadarko Petroleum Corp., Pioneer Natural Resources Co., and Apache Corp. will be spending more on capex, according to median estimates compiled by Bloomberg.

OPEC ministers are scheduled to meet in late May in Vienna to decide whether to extend their cutbacks. In their pursuit of higher crude prices, will they be willing to enrich U.S. producers along the way? ●

Lokhandwalla is an energy markets specialist in New York involved in selling the Bloomberg Professional service. This article was edited by the News department. zlokhandwall@bloomberg.net

Several of the biggest U.S. exploration and production companies boosted capital expenditure early in 2017. Use capex data compiled by Bloomberg to chart this: **{G NEWS4 11882 <GO>}**.



Natural Gas: U.S. Supply Goes Global

By MICHAEL LAWN

Nat Gas

LED BY OVERSEAS demand for liquefied natural gas and domestic demand for gas-fired power plants, total consumption of U.S. natural gas may increase as much as 20 percent by 2020, but without any price rise.

U.S. total gas demand will climb to about 90 billion cubic feet per day by 2020, according to estimates compiled by Bloomberg New Energy Finance (BNEF). That compares with demand of about 75 bcf/d in the first quarter of 2017. Of that extra 15 bcf/d in consumption, about 9 is likely to come from export demand for U.S. LNG, according to BNEF.

Bloomberg offers many functions for analyzing natural gas market supply and demand trends.

The Commodities Studies function **{COSY <GO>}** has a library of charts related to natural gas (as well as oil, metals, agriculture, and other topics).

More than 60 gigawatts of new gas-fired U.S. power plants (equivalent to about 6 bcf/d of new gas demand) are planned by 2020, according to the U.S. Energy Information Administration. By comparison, about 76GW of renewables are planned in that period, according to BNEF estimates.

This 6 bcf/d is exceeded by under-construction LNG export capacity. The Sabine Pass plant alone is ►

capable of taking some 2.25 bcf/d of natural gas—with only three of the five trains online.

When the Cove Point, Freeport, Cameron, and Corpus Christi export facilities are complete by 2020, there will be 67 million metric tons per annum of additional capacity in the U.S., equivalent to about 9 bcf/d. And that will be increased by Elba Island in Georgia and Woodfibre in Canada shortly thereafter.

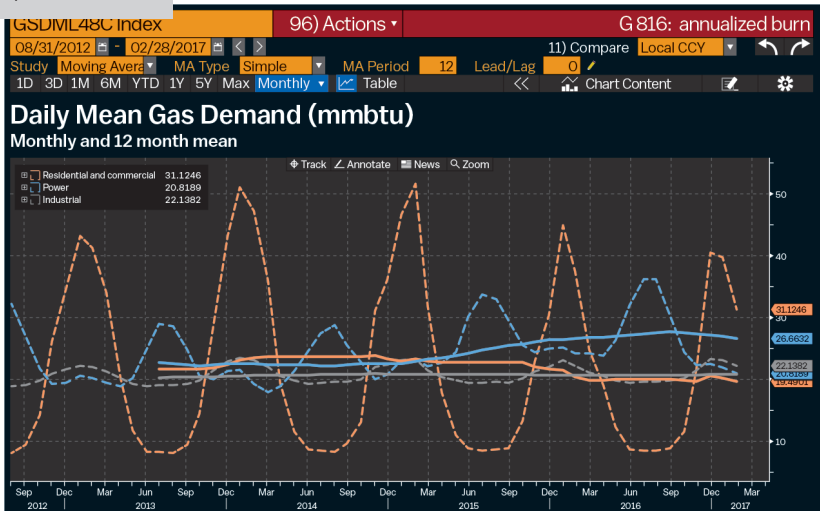
In addition, exports of U.S. gas to Mexico have already doubled to 4 bcf/d since 2014. By 2020, BNEF expects pipeline exports to Mexico to reach 5.5 bcf/d.

Demand for U.S. LNG is likely to come largely from Asia including China, India, and Pakistan, as well as from Mideast nations including Egypt, the U.A.E., and Kuwait, where it's used to generate power.

Still, increased demand isn't likely to lead to higher prices for U.S. natural gas, which has been trending downward since 2008. **NGA Comdty CT <GO>** generates the natural gas Futures Contract Table. The May 2017 contract traded at about \$2.95 per million Btu as of early March. The May 2020 contract traded around \$2.68 then, about 9 percent lower.

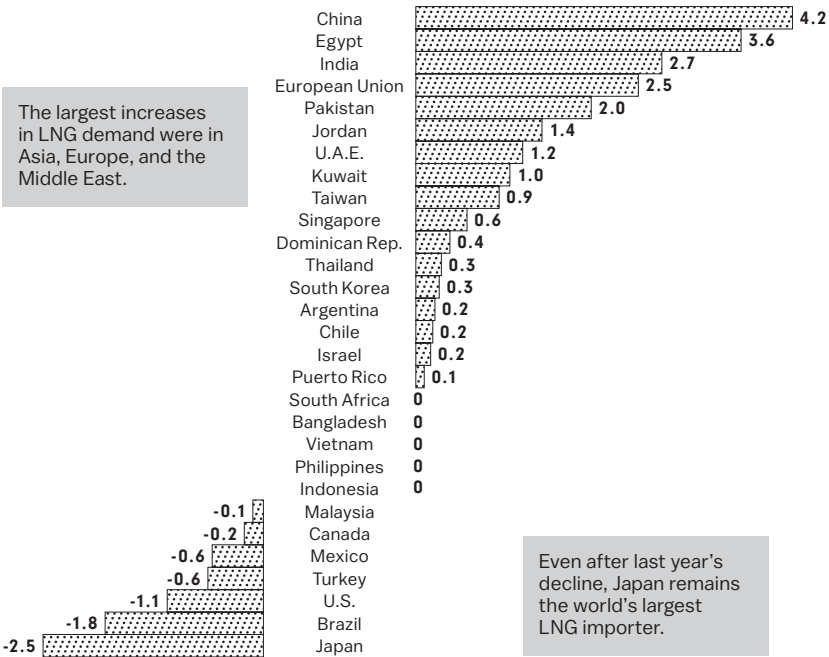
Clicking the Curve/CCRV button in the upper right of that screen generates a nat gas Commodity

{NRGZ GAS <GO>}
opens the Energy Industry Reports function for natural gas, including data on the composition and seasonality of U.S. gas consumption.



CHANGE IN LNG DEMAND FROM 2015 TO 2016

Million metric tons per annum



Sources: Bloomberg; Poten & Partners; Government import data

Curve Analysis. It opens to the current curve, which shows the market expecting gas prices to be essentially unchanged for the foreseeable future.

BNEF also has outlooks, models, and commentary on its terminal home page [{BNEF <GO>}](#).

The key question for U.S. markets is whether global demand will emerge to consume all the liquefied natural gas projected to become available, not only domestically but also from Australia. If not, then global LNG prices will drop and flexible U.S. facilities will likely be the first to cut back—pushing down U.S. gas demand and prices. ●

Lawn is a power and gas market specialist in New York involved in selling the Bloomberg Professional service. This article was edited by the News department. mlawn5@bloomberg.net

It's in the Way That You Move It

By BERT GILBERT

Canada Crude

SOMETIMES more can mean less.

Output from Canadian oil sands has increased by about 1.5 million barrels a day since 2008, yet the discount of this heavy sour crude to West Texas Intermediate (WTI) has tightened and stabilized over that period as the network of pipelines carrying the crude has expanded, too. The discount may narrow further if the Organization of the Petroleum Exporting Countries maintains its early-2017 output cuts and disproportionately trims heavy barrels.

The Bloomberg terminal can be used to track both prices for Canadian (and other) crude grades and the fundamental drivers behind price movements.

To find spot oil and product prices, as well as swap benchmarks, launch the Bloomberg Spot Oil monitor **{BOIL <GO>}**. In the upper right of the screen are prices for Canadian grades, including the heavy benchmark: West Canada Select (WCS).

To see how the price of WCS at Edmonton has traded relative to WTI at Cushing, right-click on the value in the Diff column and choose GP - Historical Graph. Then click 5Y on the chart to set the time frame.

The WCS discount to WTI has been as narrow as \$7 and as much as \$40, with the widest spread

when U.S. midcontinent refiners were the biggest customers. Over the past two years, though, the discount has stabilized around \$14-\$15 per barrel as new pipeline capacity has given WCS producers access to more refineries across more regions.

The Seaway Twin and MarketLink pipelines have allowed crude (much of which is Canadian) to flow from Cushing to the Gulf Coast. The Trans Mountain pipeline takes crude from Edmonton to Vancouver, providing access to the Pacific Northwest and California markets, and its capacity will more than double by 2019. The proposed Keystone XL and Energy East pipelines would add to this trend.

The increased quantities of heavy Canadian crude delivered to the Gulf Coast are displacing heavy crudes from Venezuela and Mexico.

For more analysis of how increased pipeline capacity for Alberta crude is affecting prices, see Bloomberg Intelligence's Midstream Oil & Gas Dashboard **{BI PIPEN <GO>}**. ●

Gilbert is an oil and oil-products application specialist in New York involved in selling the Bloomberg Professional service. This article was edited by the News department. bgilbert5@bloomberg.net

The Bloomberg Spot Oil monitor **{BOIL <GO>}** shows the differential of West Canada Select (WCS) crude to U.S. benchmark West Texas Intermediate (WTI).

1) Crude	2) OSPs	3) Products	4) Swap Benchmarks	5) Retail	99) Feedback	Wholesale Crude					
11) Americas	12) Europe	13) NAF	14) WAF	15) Asia Pacific	16) Saudi Arabia	17) Iran	18) Other Mid East				
	Time	Price	Chg	Diff	Chg	Time	Price	Chg	Diff	Chg	
United States						Canada					
Alaska North Slope	12:18	54.03	-1.05	1.30	+0.05	Edmonton Syncrude ...	12:18	53.23	-1.00	.50	+1.5
Bakken UHC	12:18	51.63	-1.05	-1.10	+0.05	Edmonton Mixed Sweet	12:18	49.43	-1.05	-3.30	+0.5
Bakken Guernsey	12:18	51.43	-1.10	-1.30	+0.03	Edmonton C5 Conden...	12:18	53.23	-1.10	.50	+0.0
Bloomberg USGC Sour ...	12:18	50.60	-1.10	-2.13	+0.03	West Canada Select (...)	12:18	38.68	-1.25	-14.05	-1.5
Bonito Sour	12:18	51.33	-1.25	-1.40	-0.15	Implied Bitumen	12:18	32.44	-1.32	-20.29	-2.2
Cal Merc Avg (CMA) Diff	12:18	--	--	-0.60	-0.04	Mexico					
Magellan East Houston	12:18	54.28	-1.10	1.55	+0.03	Mexican Mix	3/1	46.33	+.31	--	--
Heavy Louisiana Sweet ...	12:18	53.73	-1.15	1.00	-0.05	Isthmus					
Light Louisiana Sweet (...)	12:18	54.53	-1.10	1.80	+0.03	to Europe	3/31	--	--	-3.35	N.A.
Mars Blend	12:18	50.73	-1.10	-2.00	+0.03	to Asia	3/31	--	--	-2.75	N.A.
Poseidon	12:18	50.53	-1.10	-2.20	+0.03	to USA	3/31	--	--	2.15	N.A.
Southern Green	12:18	50.53	-1.10	-2.20	+0.03	to USA (Bloomberg)	12:18	55.48	-1.09	--	--
Thunder Horse	12:18	51.73	-1.45	-1.00	-0.35	Maya					
WTI Cushing	12:18	52.73	-1.10	.00	+0.03	to Europe	3/31	--	--	-5.40	N.A.
WTI Midland	12:18	52.33	-1.10	-0.40	+0.03	to Asia	3/31	--	--	-9.40	N.A.
WTI Posting Plus Diff	12:18	--	--	-2.78	-0.04	to USA	3/31	--	--	-4.20	N.A.
West Texas Sour (WTS)	12:18	51.48	-1.10	-1.25	+0.03	to USA (Bloomberg)	12:18	46.06	-.96	--	--
NYMCL Full Month	12:48	53.06	-.93	53.06	-.93	Olmecca					
ICECO Full Month	12:48	55.43	-.95	55.43	-.95	to USA	3/31	--	--	2.65	N.A.
Columbia						to USA (Bloomberg)	12:18	56.20	-1.09	--	--
Vasconia	12:18	50.04	-1.09	-5.50	+0.03	to Europe	3/31	--	--	-2.40	N.A.
Ecuador						Venezuela					
Oriente	12:18	48.54	-1.09	-7.00	+0.03	Venezuela Basket	2/24	46.93	N.A.	--	--



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