



UTILITY REVENUE SERVICES

# Weekly Energy Report



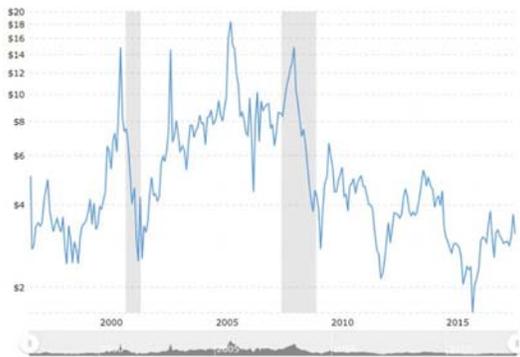
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## Natural Gas in Underground Storage

The weekly EIA Natural Gas Storage Report advised that there was a withdrawal of 78Bcf (billion cubic feet) from Underground Storage for the week ending February 23d, 2018.

This is 13Bcf above the median forecast of a 65Bcf withdrawal, the average prediction of sector analysts and traders in the Dow Jones Newswires weekly survey. The withdrawal one year ago was 7Bcf and the 5-year average withdrawal is 118Bcf. Storage is 680Bcf below last year for the same week and 372Bcf below the 5-year average. Working gas in storage stands at 1,682Bcf.

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## Natural Gas Pricing

As of 9:38AM CST, April 2018, (the *new* prompt month) Natural Gas was trading at \$2.68, + **\$0.03** from one week ago and the 1-Year Spread average was \$2.85, +\$0.04 from one week ago. The March Natural Gas contract closed at \$2.68.

## Crude Oil Pricing

As of 9:36AM CST, April, 2018, (the *new* prompt month) Light, Sweet Crude on the NYMEX was at **\$60.78**, -\$1.52 from one week ago.

### Crude Oil & Natural Gas

INDEX	UNITS	PRICE	CHANGE	%CHANGE	CONTRACT	TIME (EST)	2 DAY
CL1.COM WTI Crude Oil (Nymex)	USD/bbl	60.78	-0.86	-1.40%	Apr 2018	10:36 AM	
CO1.COM Brent Crude (ICE)	USD/bbl	63.71	-1.02	-1.58%	May 2018	10:36 AM	
CP1.COM Crude Oil (Tokyo)	JPY/bi	39,740.00	-410.00	-1.02%	Jul 2018	10:39 AM	
N53.COM Natural Gas (Nymex)	USD/MMBtu	2.68	+0.01	+0.37%	Apr 2018	10:36 AM	

Petroleum Stocks (Million Barrels)	Current Week	2/16/18
	2/23/18	
Crude Oil .....	1,088.8	1,085.4
Commercial (Excluding SPR) <sup>1</sup> .....	423.5	420.5
Strategic Petroleum Reserve (SPR) <sup>2</sup> .....	665.3	664.9
Total Motor Gasoline <sup>3</sup> .....	251.8	249.3
Reformulated .....	0.1	0.1
Conventional .....	25.9	25.8
Blending Components .....	225.9	223.4
Fuel Ethanol .....	23.0	22.8
Kerosene-Type Jet Fuel .....	43.1	43.0
Distillate Fuel Oil <sup>3</sup> .....	138.0	138.9
15 ppm sulfur and Under <sup>3</sup> .....	119.7	119.7
> 15 ppm to 500 ppm sulfur .....	6.2	6.6
> 500 ppm sulfur .....	12.1	12.6
Residual Fuel Oil .....	32.1	31.3
Propane/Propylene .....	42.7	43.1
Other Oils <sup>4</sup> .....	248.5	250.0
Unfinished Oils .....	89.0	89.4
Total Stocks (Including SPR) <sup>2,3</sup> .....	1,867.9	1,863.7
Total Stocks (Excluding SPR) <sup>3</sup> .....	1,202.6	1,198.9

## Crude Oil Inventory

US crude inventories rose by 3 million barrels to 422.8 million barrels for the week ended Feb 23d, according to data released yesterday morning by the US Department of Energy. Traders in the Reuters poll projected an increase of 1.2 million barrels.

# U.S. Rotary Rigs

U.S. Rotary Rigs drilling for natural gas were +2 at 179 for the week of February 23d. The number of rigs currently drilling for Natural Gas was 28 higher than last year's level of 151. US Rigs drilling for oil were +1 at 798. There are 197 more rigs targeting oil than last year. Canadian rigs were -12 at 306 for the week. Rigs targeting oil remain at 82% of all US drilling activity.

North American Rig Count	02/16/2018		02/09/2018		02/17/2017		Change		Percent Change	
	Weekly	Annual	Weekly	Annual	Weekly	Annual	Weekly	Annual	Weekly	Annual
<b>Total U.S.</b>	975	975	751	0	224	0.0%	29.8%			
Offshore	18	16	18	2	0	12.5%	0.0%			
Land	957	959	733	(2)	224	-0.2%	30.6%			
Inland Waters	1	2	3	(1)	(2)	-50.0%	-66.7%			
Oil	798	791	597	7	201	0.9%	33.7%			
Percent	81.8%	81.1%	79.5%	0.7%	2.4%					
Gas	177	184	153	(7)	24	-3.8%	15.7%			
Percent	18.2%	18.9%	20.4%	-0.7%	-2.2%					
Directional	71	73	72	-2	-1	-2.7%	-1.4%			
Horizontal	839	832	614	7	225	0.8%	36.6%			
Vertical	65	70	65	-5	0	-7.1%	0.0%			
Gulf of Mexico	18	16	17	2	1	12.5%	5.9%			
Gulf Oil	16	14	17	2	-1	14.3%	-5.9%			
Percent	88.9%	87.5%	100.0%	1.4%	-11.1%					
Gulf Gas	2	2	0	0	2	0.0%	n.a.			
Percent	11.1%	12.5%	0.0%	-1.4%	11.1%					
Canada	318	325	331	(7)	(13)	-2.2%	-3.9%			
Oil	218	221	194	(3)	24	-1.4%	12.4%			
Percent	68.6%	68.0%	58.6%	0.6%	9.9%					
Gas	100	104	137	(4)	(37)	-3.8%	-27.0%			
Percent	31.4%	32.0%	41.4%	-0.6%	-9.9%					
North America	1,293	1,300	1,082	(7)	211	-0.5%	19.5%			
<b>Prices</b>										
Oil \$/bbl	\$60.11	\$61.89	\$53.22	(\$1.78)	\$6.89	-2.9%	13.0%			
Oil \$/mmbtu	\$10.36	\$10.67	\$9.18	(\$0.31)	\$1.19	-2.9%	13.0%			
Gas \$/mmbtu	\$2.53	\$2.72	\$2.85	(\$0.19)	(\$0.32)	-6.8%	-11.2%			



## Geopolitical

**U.S. energy drilling boom could mean \$6 billion in federal well cleanups:** WASHINGTON (Reuters) - Cleaning up the tens of thousands of oil and gas wells on U.S. federal land after they stop producing could cost over \$6 billion, and taxpayers may need to pitch in, according to an analysis of state and federal data commissioned by a conservation watchdog group.



## Weather

The AccuWeather 1-5 day Outlook forecasts above-normal temperatures for the Eastern 2/3 of the US. The Western third is projected to be at below-normal temps.

The 6-10 Day Outlook forecasts the Northeast and Southwest at above-normal temps with the Northwest and the Central US at below-normal

The study released on Monday reflects one of the downsides to a years-long drilling boom that has made the United States a top world oil and gas producer. The analysis by consultancy ECONorthwest on behalf of the Center for Western Priorities, estimates the potential reclamation costs for the 94,096 oil and gas wells now producing on federal lands at \$6.1 billion...

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temps. The 11-15 Day Outlook forecasts most of the Northern half of the US at below-normal temps with the Southwest projected to be at above-normal temps. The 30 and 90-day Outlook shows the Southern states above-normal temps and normal temps the balance of the country at normal temps. While weather is not factoring into Natural Gas pricing, low inventory has been driving heat rates up dramatically.

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## Sustainability and Renewables

**A breakthrough invention creates electricity from daily temperature swings: When it comes to passive electricity-producing technology, a new invention could be the breakthrough we've been looking for.** When thinking of new renewable energy technologies, a concept such



## This Week's Key Takeaway

Remember in 2003 when the movie, "Who Killed the Electric Car?" cited the death of GM's experiment in California? At the time, no one seemed to notice that over 50% of electricity in CA was generated by coal. So what were they actually driving?

as thermoelectric generation – which generates power when one side of the device is a different temperature from the other – could be hugely beneficial.

On that note, a team from MIT has unveiled a new device that expands on this idea by converting daily temperature fluctuations during the day-night cycle into electrical power, without needing two different temperature inputs at the same time...

Fast forward to 2018, when less than 1% of electricity is generated from coal in CA and more than 50% is generated by renewable sources. Well, hang on... thanks to what researchers are calling a "breakthrough" in energy storage technology, teams from Bristol and Surrey Universities have created a new material for supercapacitors, which store electric charge that could see EVs recharge in as little as 10 minutes compared to the 8 hours it can take for EVs with lithium-ion batteries. In addition, the range of autos would surpass the top range of today's cars. Game changer?

Next Day On-Peak Power (traded for 3/1/2018)		
<b>ISO-NE Mass Hub</b> <b>\$25.30</b>	<b>MISO Indiana Hub</b> <b>\$36.00</b>	<b>NYISO Zone G</b> <b>\$24.38</b>
<b>PJM West Hub</b> <b>\$27.38</b>	<b>ERCOT North</b> <b>\$23.00</b>	<b>CAISO SP15</b> <b>\$34.38</b>



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