



UTILITY REVENUE SERVICES

# Weekly Energy Report



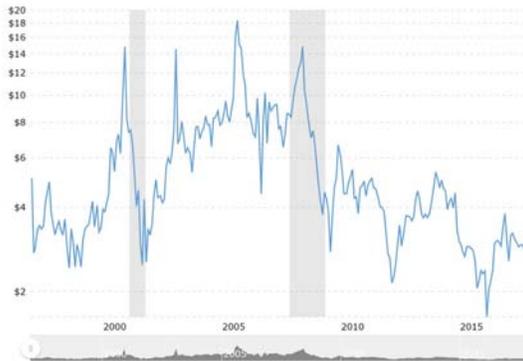
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## Natural Gas in Underground Storage

The weekly EIA Natural Gas Storage Report advised that there was an injection of 15Bcf (billion cubic feet) into Underground Storage for the week ending November 2nd, 2017.

This is 1Bcf above the median forecast of a 14Bcf injection, the average prediction of sector analysts and traders in the Dow Jones Newswires weekly survey. The injection one year ago was 54Bcf and the 5-year average injection is 45Bcf. Storage is 219Bcf below last year for the same week and 71Bcf below the 5-year average.

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## Natural Gas Pricing

As of 2:10PM CST, December 2017, (the prompt month) Natural Gas was trading at \$3.21, +\$0.25 from one week ago and the 1-Year Spread average was \$3.09, +\$0.15 from one week ago...

## Crude Oil Pricing

As of 12:05PM CST, December, 2017, (the *new* prompt month) Light, Sweet Crude on the NYMEX was at \$57.09, +\$2.69 from one week ago.

### Crude Oil & Natural Gas

INDEX	UNITS	PRICE	CHANGE	%CHANGE	CONTRACT	TIME ESTD	2 DAY
GLC/COM WTI Crude Oil (Nymex)	USD/BBL	57.09	+0.28	+0.49%	Dec 2017	3:24 PM	
CO/COM Brent Crude (ICE)	USD/BBL	63.84	+0.36	+0.56%	Jan 2018	3:24 PM	
CP/COM Crude Oil (Tokyo)	JPY/TL	42,950.00	+100.00	+0.20%	Mar 2018	3:24 PM	
IND/COM Natural Gas (Nymex)	USD/MMBtu	3.21	+0.04	+1.27%	Dec 2017	3:24 PM	

Petroleum Stocks (Million Barrels)	Current Week	10/27/17
	11/3/17	
Crude Oil .....	1,127.0	1,125.5
Commercial (Excluding SPR) <sup>2</sup> .....	457.1	454.9
Strategic Petroleum Reserve (SPR) <sup>3</sup> .....	669.9	670.6
Total Motor Gasoline <sup>4</sup> .....	209.5	212.8
Reformulated .....	0.1	0.0
Conventional .....	22.1	21.8
Blending Components .....	187.3	191.0
Fuel Ethanol .....	21.3	21.5
Kerosene-Type Jet Fuel .....	40.1	41.2
Distillate Fuel Oil <sup>4</sup> .....	125.6	128.9
15 ppm sulfur and Under <sup>4</sup> .....	108.1	110.6
> 15 ppm to 500 ppm sulfur .....	7.2	7.5
> 500 ppm sulfur .....	10.3	10.8
Residual Fuel Oil .....	32.7	32.9
Propane/Propylene .....	77.2	78.3
Other Oils <sup>5</sup> .....	293.5	295.5
Unfinished Oils .....	88.7	89.7
Total Stocks (Including SPR) <sup>3,4</sup> .....	1,926.9	1,936.6
Total Stocks (Excluding SPR) <sup>4</sup> .....	1,257.0	1,266.1

## Crude Oil Inventory

US crude inventories increased by 2.2 million barrels to 457.1 million barrels for the week ended November 2nd, according to data released yesterday morning by the US Department of Energy. Traders in the Reuters poll projected a draw of 2.2 million barrels.

# U.S. Rotary Rigs

U.S. Rotary Rigs drilling for natural gas were -3 at 169 for the week of November 3d. The number of rigs currently drilling for Natural Gas is 52 higher than last year's level of 117. US Rigs drilling for oil were -8 at 729 There are 279 more rigs targeting oil than last year. Canadian rigs were +1 at 192 for the week. Rigs targeting oil remain at 81% of all drilling activity.

North American Rig Count	11/03/2017	10/27/2017	11/04/2016	Change		Percent Change	
	Weekly	Annual	Weekly	Annual	Weekly	Annual	
<b>Total U.S.</b>	898	909	569	(11)	329	-1.2%	57.8%
Offshore	18	20	21	(2)	(3)	-10.0%	-14.3%
Land	880	889	548	(9)	332	-1.0%	60.6%
Inland Waters	1	1	2	0	(1)	0.0%	-50.0%
Oil	729	737	450	(8)	279	-1.1%	62.0%
Percent	81.2%	81.1%	79.1%	0.1%	2.1%		
Gas	169	172	117	(3)	52	-1.7%	44.4%
Percent	18.8%	18.9%	20.6%	-0.1%	-1.7%		
Directional	73	74	52	-1	21	-1.4%	40.4%
Horizontal	764	769	459	-5	305	-0.7%	66.4%
Vertical	61	66	58	-5	3	-7.6%	5.2%
Gulf of Mexico	18	20	21	-2	-3	-10.0%	-14.3%
Gulf Oil	16	18	21	-2	-5	-11.1%	-23.8%
Percent	88.9%	90.0%	100.0%	-1.1%	-11.1%		
Gulf Gas	2	2	0	0	2	0.0%	n.a.
Percent	11.1%	10.0%	0.0%	1.1%	11.1%		
<b>Canada</b>	192	191	154	1	38	0.5%	24.7%
Oil	100	96	76	4	24	4.2%	31.6%
Percent	52.1%	50.3%	49.4%	1.8%	2.7%		
Gas	91	94	77	(3)	14	-3.2%	18.2%
Percent	47.4%	49.2%	50.0%	-1.8%	-2.6%		
<b>North America</b>	1,090	1,100	723	(10)	367	-0.9%	50.8%
<b>Prices</b>							
Oil \$/bbl.	\$54.11	\$52.63	\$45.51	\$1.48	\$8.60	2.8%	18.9%
Oil \$/mmbtu	\$9.33	\$9.07	\$7.85	\$0.26	\$1.48	2.8%	18.9%
Gas \$/mmbtu	\$2.87	\$2.89	\$2.43	(\$0.02)	\$0.44	-0.8%	18.1%



## Geopolitical

Scientists can't explain a 'worrying' rise in methane levels; New figures show atmospheric pollution levels are surging. The amount of CO2 in the atmosphere reached a record high in 2016, according to the World Meteorological Organization (WMO). Thanks to a combination of human activities and the El Nino weather event, last year's increase was 50%



## Weather

The AccuWeather 1-5 day Outlook forecasts above-normal temperatures the Eastern 1/3 of the US while the Northeast and Central US are projected to be below-normal. The 6-10 Day Outlook forecasts the East and Northwest at normal temps with the center of the country at above-normal temps. The 11-15 Day Outlook forecasts the

higher than the yearly average from the past decade, driving CO2 to a level that's not been seen for 800,000 years. Average levels in 2016 reached 403.3 parts per million, up from 400 parts per million in 2015.

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## Sustainability and Renewables

Humanity has sought to make the Earth's oceans potable for thousands of years. The Norse tale of Utgarda-Loki tells of Odin being tricked into drinking from a horn connected to the sea, while Exodus 15:22–26 of the Bible likely describes Moses desalinating the water of Marah:

When they came to Marah, they could not drink the water of Marah because it was bitter; therefore it was named Marah. And the people grumbled against Moses, saying, "What shall we drink?" And he cried to the Lord, and the Lord showed

Northeast at below-normal temps and the Southwest at above-normal temperatures. The 30-day Outlook shows the East Coast and part of the Southwest at above-normal temps with the balance of the country at normal temps. The 90-Day Outlook projects normal temps..

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## This Week's Key Takeaway

The change in the weather forecast has caused Natural Gas prices to rise this past week. Colder-than normal temps are now expected over the next 30 days for much of the nation, triggering the rise in prices.

Crude prices have risen dramatically as well this past week, so that the bulls for both natural gas and crude have been feeding off each other.

Signs are pointing toward a displacement of the polar vortex that may be accompanied by a significant storm with snow and wind

him a log, and he threw it into the water, and the water became sweet...

in the northeastern US during the days prior to Thanksgiving...

<b>Next Day On-Peak Power (traded for 11/9/2017)</b>		
<b>ISO-NE Mass Hub</b> \$38.25	<b>MISO Indiana Hub</b> \$37.13	<b>NYISO Zone G</b> \$39.20
<b>PJM West Hub</b> \$48.41	<b>ERCOT North</b> \$27.33	<b>CAISO SP15</b> \$48.79



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