



UTILITY REVENUE SERVICES

Weekly Energy Report

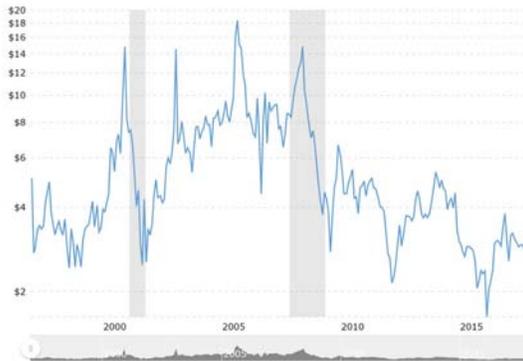


Natural Gas in Underground Storage

The weekly EIA Natural Gas Storage Report advised that there was a **withdrawal of 18Bcf** (billion cubic feet) into Underground Storage for the week ending November 9th, 2017, *the first of this winter*.

This is 5Bcf above the median forecast of a 13Bcf withdrawal, the average prediction of sector analysts and traders in the Dow Jones Newswires weekly survey. The injection one year ago was 34Bcf and the 5-year average injection is 12Bcf. Storage is 271Bcf below last year for the same week and 101Bcf below the 5-year average.

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Natural Gas Pricing

As of 11:41AM CST, December 2017, (the prompt month) Natural Gas was trading at \$3.06, - \$0.15 from one week ago and the 1-Year Spread average was \$3.02, - \$0.07 from one week ago...

Crude Oil Pricing

As of 11:32AM CST, December, 2017, (the prompt month) Light, Sweet Crude on the NYMEX was at \$55.19, -\$1.90 from one week ago.

Crude Oil & Natural Gas

INDEX	UNITS	PRICE	CHANGE	%CHANGE	CONTRACT	TIME ESTD	2 DAY
GLSICOM WTI Crude Oil (Nymex)	USD/bbl	55.19	-0.14	-0.25%	Dec 2017	12:26 PM	
EDICOM Brent Crude (ICE)	USD/bbl	61.91	-0.36	-0.58%	Jan 2018	12:26 PM	
OPICOM Crude Oil (Tokyo)	JPY/b	45660.00	-370.00	-0.82%	Mar 2018	12:21 PM	
NDICOM Natural Gas (Nymex)	USD/MMBtu	3.06	-0.02	-0.66%	Dec 2017	12:26 PM	

Petroleum Stocks (Million Barrels)	Current Week	
	11/10/17	11/3/17
Crude Oil	1,128.2	1,127.0
Commercial (Excluding SPR) ¹	459.0	457.1
Strategic Petroleum Reserve (SPR) ²	669.2	669.9
Total Motor Gasoline ³	210.4	209.5
Reformulated	0.0	0.1
Conventional	21.1	22.1
Blending Components	189.3	187.3
Fuel Ethanol	21.5	21.3
Kerosene-Type Jet Fuel	40.4	40.1
Distillate Fuel Oil ³	124.8	125.6
15 ppm sulfur and Under ³	107.5	108.1
> 15 ppm to 500 ppm sulfur	7.4	7.2
> 500 ppm sulfur	9.8	10.3
Residual Fuel Oil	34.5	32.7
Propane/Propylene	74.7	77.2
Other Oils ⁴	294.6	293.5
Unfinished Oils	89.6	88.7
Total Stocks (Including SPR) ^{2,3}	1,929.0	1,926.9
Total Stocks (Excluding SPR) ³	1,259.8	1,257.0

Crude Oil Inventory

US crude inventories increased by 1.9 million barrels to 459.0 million barrels for the week ended November 9th, 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 unchanged at 169 for the week of November 10th. The number of rigs currently drilling for Natural Gas is 54 higher than last year's level of 115. US Rigs drilling for oil were +9 at 738 There are 286 more rigs targeting oil than last year. Canadian rigs were +11 at 203 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		
Total U.S.	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%			
Canada	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%			
North America	1,090	1,100	723	(10)	367	-0.9%	50.8%	
Prices								
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 warn of climate change global catastrophe: More than 15,000 of the world's leading climate scientists have issued a stark warning — time is running out to prevent a global environmental collapse. It's believed to be the largest number of scientists to ever



Weather

The AccuWeather 1-5 day Outlook forecasts above-normal temperatures the Northeast while the the balance of the country is projected to be above-normal or normal. The 6-10 Day Outlook forecasts the Eastern third of the US at below-normal temps with the center of the country at normal

put their names to a study which predicts catastrophic problems that could come from climate change. It predicts temperature rises and unpredictable weather patterns will cause widespread misery. But it says it's not too late for governments to do something about the problem.



Sustainability and Renewables

Auto maker Fisker claims solid-state battery 'breakthrough' for electric cars with 500 miles range and 1 min charging: When Henrik Fisker relaunched its electric car startup last year, he announced that their first car will be powered by a new graphene-based hybrid supercapacitor technology, but he later announced that they put those plans on the backburner and instead will use more traditional li-ion batteries.

Now the company is announcing a "breakthrough" in solid-state batteries to power their next-

temps and the West at above-normal temps. The 11-15 day Outlook forecasts a similar view to the 6-10 Day Outlook while the 30-Day Outlook forecasts the Coasts to be above normal temps with the rest of the country at normal temps.



This Week's Key Takeaway

According to Forbes, the International Energy Agency made headlines Monday when it declared in its World Energy Outlook 2017 that the U.S. could be a net exporter of oil within a decade. The IEA also projected that the U.S. is set to become the world's dominant oil and gas production leader for decades. A dozen years ago, the notion that the U.S. could achieve energy independence would have drawn scoffs from most analysts. After all, U.S. oil production had been in decline since reaching a peak of 9.6 million barrels per day in 1970. By 2005, U.S. oil production

generation electric cars and they are filing for patents to protect their IP. Get ready for some crazy claims here...

had fallen to 5.2 million barrels per day. However, as we know, hydraulic fracturing has altered the US energy landscape dramatically. The bigger question is: Will the world still be as dependent in 10 years on fossil fuels as it is today?

Next Day On-Peak Power (traded for 11/16/2017)		
ISO-NE Mass Hub \$37.28	MISO Indiana Hub \$32.46	NYISO Zone G \$34.49
PJM West Hub \$35.33	ERCOT North \$26.88	CAISO SP15 \$45.40

