



UTILITY REVENUE SERVICES

Weekly Energy Report

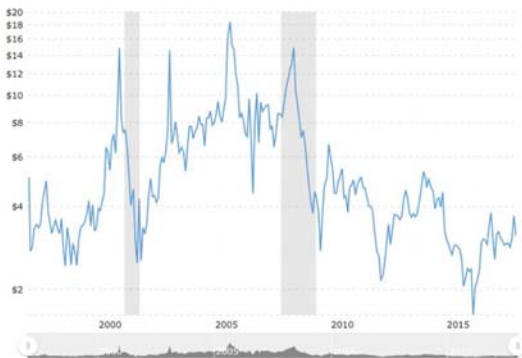


Natural Gas in Underground Storage

The weekly EIA Natural Gas Storage Report advised that there was an injection of 89Bcf (billion cubic feet) into Underground Storage for the week ending May 4th, 2018.

This is 9Bcf below the median forecast of a 98Bcf injection, the average prediction of sector analysts and traders in the Dow Jones Newswires weekly survey. The injection one year ago was 45Bcf and the 5-year average injection is 75Bcf. Storage is **863Bcf below last year** for the same week and **520Bcf below the 5-year average**. Working gas in storage stands at 1,432Bcf.

[Read More](#)



Natural Gas Pricing

As of 9:24AM CST, June 2018, (the prompt month) Natural Gas was trading at \$2.76, +\$0.05 from one week ago and the 1-Year Spread average was \$2.79, +\$0.01 from one week ago.

Crude Oil Pricing

As of 9:23AM CST, June, 2018, (the prompt month) Light, Sweet Crude on the NYMEX was at **\$70.84**, +\$2.38 from one week ago.

Crude Oil & Natural Gas

INDEX	UNITS	PRICE	CHANGE	%CHANGE	CONTRACT	TIME (EDT)	2 DAY
CL1:COM WTI Crude Oil (Nymex)	USD/bbl	70.84	-0.30	-0.42%	Jun 2018	10:23 AM	
CO1:COM Brent Crude (ICE)	USD/bbl	76.75	-0.46	-0.60%	Jul 2018	10:22 AM	
CF1:COM Crude Oil (Tokyo)	JPY/bbl	48,770.00	-590.00	-1.20%	Oct 2018	10:27 AM	
NG1:COM Natural Gas (Nymex)	USD/MMBtu	2.76	+0.02	+0.88%	Jun 2018	10:23 AM	

Petroleum Stocks (Million Barrels)	Current Week	4/27/18
	5/4/18	
Crude Oil	1,097.3	1,100.2
Commercial (Excluding SPR) ¹	433.8	436.0
Strategic Petroleum Reserve (SPR) ²	663.6	664.3
Total Motor Gasoline ³	235.8	238.0
Reformulated	0.0	0.0
Conventional	21.8	23.7
Blending Components	214.0	214.2
Fuel Ethanol	22.0	22.1
Kerosene-Type Jet Fuel	40.8	39.8
Distillate Fuel Oil ³	115.0	118.8
15 ppm sulfur and Under ³	101.9	104.7
> 15 ppm to 500 ppm sulfur	3.8	4.7
> 500 ppm sulfur	9.3	9.5
Residual Fuel Oil	32.9	32.9
Propane/Propylene	38.7	36.4
Other Oils ⁴	267.3	263.8
Unfinished Oils	93.5	91.6
Total Stocks (Including SPR) ^{2,3}	1,849.7	1,852.0
Total Stocks (Excluding SPR) ³	1,186.2	1,187.7

Crude Oil Inventory

US crude inventories decreased by 2.2 million barrels to 433.8 million barrels for the week ended May 4th, according to data released yesterday morning by the US Department of Energy. Traders in the Reuters poll projected a decrease of 0.7 million barrels.

U.S. Rotary Rigs

U.S. Rotary Rigs drilling for natural gas were +1 at 196 for the week of May 4th. The number of rigs currently drilling for Natural Gas was 23 higher than last year's level of 173. US Rigs drilling for oil were +9 at 834. There are 131 more rigs targeting oil than last year. Canadian rigs were +1 at 86 for the week. Rigs targeting oil remain at 81% of all US drilling activity.

North American Rig Count	05/04/2018		04/27/2018		05/05/2017		Change		Percent Change	
	Weekly	Annual	Weekly	Annual	Weekly	Annual	Weekly	Annual	Weekly	Annual
Total U.S.	1,032	1,021	877	11	155	1.1%	17.7%			
Offshore	19	18	19	1	0	5.6%	0.0%			
Land	1,013	1,003	858	10	155	1.0%	18.1%			
Inland Waters	2	5	5	(3)	(3)	-60.0%	-60.0%			
Oil	834	825	703	9	131	1.1%	18.6%			
Percent	80.8%	80.8%	80.2%	0.0%	0.7%					
Gas	196	195	173	1	23	0.5%	13.3%			
Percent	19.0%	19.1%	19.7%	-0.1%	-0.7%					
Directional	64	68	67	-4	-3	-5.9%	-4.5%			
Horizontal	913	901	734	12	179	1.3%	24.4%			
Vertical	55	52	76	3	-21	5.8%	-27.6%			
Gulf of Mexico	19	18	18	1	1	5.6%	5.6%			
Gulf Oil	18	17	15	1	3	5.9%	20.0%			
Percent	94.7%	94.4%	83.3%	0.3%	11.4%					
Gulf Gas	1	1	3	0	-2	0.0%	-66.7%			
Percent	5.3%	5.6%	16.7%	-0.3%	-11.4%					
Canada	86	85	82	1	4	1.2%	4.9%			
Oil	37	33	27	4	10	12.1%	37.0%			
Percent	43.0%	38.8%	32.9%	4.2%	10.1%					
Gas	49	52	55	(3)	(6)	-5.8%	-10.9%			
Percent	57.0%	61.2%	67.1%	-4.2%	-10.1%					
North America	1,118	1,106	959	12	159	1.1%	16.6%			
Prices										
Oil \$/bbl.	\$68.04	\$68.14	\$47.22(\$0.10)	\$20.83	-0.1%	44.1%				
Oil \$/mmbtu	\$11.73	\$11.75	\$8.14(\$0.02)	\$3.59	-0.1%	44.1%				
Gas \$/mmbtu	\$2.71	\$2.77	\$3.10(\$0.06)	(\$0.39)	-2.2%	-12.6%				



Geopolitical

What Trump's Iran decision means for oil and gas prices:

President Donald Trump chose a dicey time to crack down on Iran, the world's fifth-biggest oil producer. Global oil supplies were already getting tight before Trump vowed on Tuesday to exit the Iran nuclear deal and impose "powerful" sanctions on the OPEC nation. Energy industry



Weather

The AccuWeather 1-5 day Outlook forecasts above-normal temps for all of the US with the exception of the far North and Florida, which are expected to be at normal temps. The 6-10 Day Outlook forecasts the entire country at above-normal temps with the exception of Florida and California, which are expected to be at normal temps. The 11-15 Day

insiders say Trump's tough stance on Iran will probably keep oil and gasoline prices higher than they would otherwise be.

Iran ramped up its oil production by 1 million barrels per day after sanctions were lifted in early 2016. At least some of that oil will now be pulled from the market - at a time when oil prices are already rising because of production cuts by OPEC and Russia as well as instability in Venezuela. Dan Eberhart, CEO of oilfield services company Canary LLC, drew a direct connection: "Withdrawing from the Iran nuclear deal will support higher oil prices."



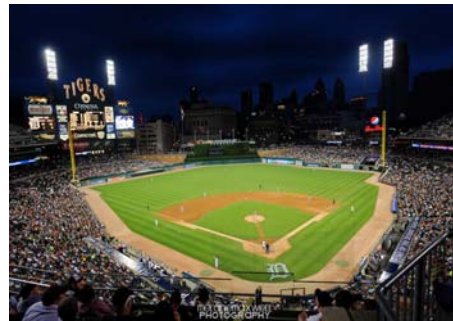
Sustainability and Renewables

New Water-Based Battery Could Increase Deployment of Solar Farms: Two of the fastest growing forms of renewable energy

Outlook forecasts most of the South and West at above-normal temps with the balance of the country at normal temps.

The 30-day Outlook projects above-normal temps for the Southwest and East Coast of the US. The 90-day Outlook shows the West at above-normal temps with the balance of the country at normal temperatures.

Warmer-than-normal temps in the Summer cause even more demand on natural gas and electricity resources and it appears that this will be the case this year, as El Niño patterns reach 50% probability.



This Week's Key Takeaway

A Whole New Ballgame: Politics aside, how will the withdrawal from the Iran Nuclear Agreement affect Natural Gas and Electricity prices in

generation, wind and solar, both have the same limitation. They're exposed to harsh weather conditions and routinely go for hours without generating any electricity. Most utility-scale battery systems have a lifetime of around a decade before they are no longer effective to hold charge and need to be replaced. Another tradeoff is safety, as often lithium-ion batteries explode or catch fire for no reason at all. It looks like the key to developing safe batteries that don't explode is water.

Stanford researchers have developed a water-based battery that is resistant to exploding or catching fire. The water-based battery made using water and salt could be used to store energy produced from wind and solar farms, increasing the effectiveness of renewable energy sources...

the US? Will this be a home run or strike-out for consumers?

Most traders are feeling bullish on prices, but thus far, there has been little movement in Natural Gas futures. As inventory builds over the next months, pressure to lower prices will be exerted, while concurrently, Heat Rates rise, as electricity will be used to cool generators, especially in the south.

There once was a much closer relationship between Crude and Natural Gas prices, as they moved in virtual lockstep in a 6-1 ratio. While fuel switching still regularly occurs, Crude and Natural Gas pricing has decoupled. A rise in Crude does not automatically mean a rise in Natural Gas prices, as the US has curtailed imports, with the only significant imports still coming from Canada.

Next Day On-Peak Power (traded for 5/10/2018)		
ISO-NE Mass Hub \$26.34	MISO Indiana Hub \$38.56	NYISO Zone G \$30.84
PJM West Hub \$38.57	ERCOT North \$30.84	CAISO SP15 \$25.07



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