



UTILITY REVENUE SERVICES

Weekly Energy Report

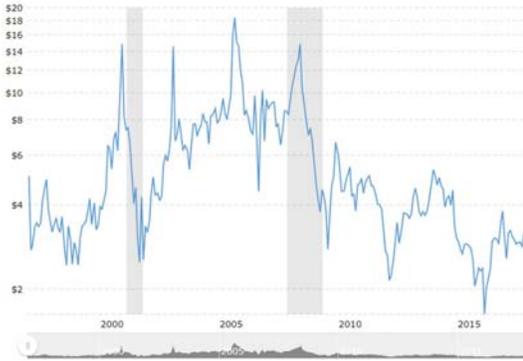


Natural Gas in Underground Storage

The weekly EIA Natural Gas Storage Report advised that there was a withdrawal of 46Bcf (billion cubic feet) into Underground Storage for the week ending November 17th, 2017.

This is 1Bcf below the median forecast of a 47Bcf withdrawal, the average prediction of sector analysts and traders in the Dow Jones Newswires weekly survey. The injection one year ago was 2Bcf and the 5-year average withdrawal is 26Bcf. Storage is 319Bcf below last year for the same week and 121Bcf below the 5-year average.

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Natural Gas Pricing

As of 10:50AM CST, December 2017, (the prompt month) Natural Gas was trading at \$2.97, - \$0.09 from one week ago and the 1-Year Spread average was \$2.98, - \$0.04 from one week ago...

Crude Oil Pricing

As of 11:01AM CST, December, 2017, (the prompt month) Light, Sweet Crude on the NYMEX was at \$57.96, +\$2.77 from one week ago.

Crude Oil & Natural Gas

| INDEX | UNITS | PRICE | CHANGE | %CHANGE | CONTRACT | TIME ESTD | 2 DAY |
|---------------------------------|-----------|----------|--------|---------|----------|-----------|-------|
| Q1102M WTI Crude Oil (Nymex) | USD/BBL | 57.72 | +0.89 | +1.57% | Jan 2018 | 10:09 AM | |
| Q1102M Brent Crude (ICE) | USD/BBL | 63.03 | +0.66 | +0.74% | Jan 2018 | 10:09 AM | |
| Q1102M Crude Oil (Tokyo) | JPY/BL | 41340.00 | -80.00 | -0.43% | Mar 2018 | 10:10 AM | |
| NG10COM Natural Gas (Nymex) | USD/MMBtu | 2.97 | -0.05 | -1.66% | Dec 2017 | 10:09 AM | |

| 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 fell by 1.9 million barrels to 457.1 million barrels for the week ended November 17th, according to data released yesterday morning by the US Department of Energy. Traders in the Reuters poll projected a draw of 1.5 million barrels.

U.S. Rotary Rigs

U.S. Rotary Rigs drilling for natural gas were +8 at 177 for the week of November 16th. The number of rigs currently drilling for Natural Gas is 61 higher than last year's level of 116. US Rigs drilling for oil were unchanged at 738 There are 267 more rigs targeting oil than last year. Canadian rigs were +5 at 208 for the week. Rigs targeting oil remain at 81% of all drilling activity.

| North American Rig Count | 11/17/2017 | | | 11/10/2017 | | | 11/18/2016 | | | Change | | Percent Change | |
|--------------------------|------------|------------|------------------|------------|--------|--------|------------|--------|--------|--------|--------|----------------|--|
| | 11/17/2017 | 11/10/2017 | 11/18/2016 | Weekly | Annual | Weekly | Annual | Weekly | Annual | Weekly | Annual | | |
| Total U.S. | 915 | 907 | 588 | 8 | 327 | 0.9% | 55.6% | | | | | | |
| Offshore | 21 | 18 | 23 | 3 | (2) | 16.7% | -8.7% | | | | | | |
| Land | 894 | 889 | 565 | 5 | 329 | 0.6% | 58.2% | | | | | | |
| Inland Waters | 1 | 1 | 2 | 0 | (1) | 0.0% | -50.0% | | | | | | |
| Oil | 738 | 738 | 471 | 0 | 267 | 0.0% | 56.7% | | | | | | |
| Percent | 80.7% | 81.4% | 80.1% | -0.7% | 0.6% | | | | | | | | |
| Gas | 177 | 169 | 116 | 8 | 61 | 4.7% | 52.6% | | | | | | |
| Percent | 19.3% | 18.6% | 19.7% | 0.7% | -0.4% | | | | | | | | |
| Directional | 76 | 74 | 52 | 2 | 24 | 2.7% | 46.2% | | | | | | |
| Horizontal | 776 | 776 | 470 | 0 | 306 | 0.0% | 65.1% | | | | | | |
| Vertical | 63 | 57 | 66 | 6 | -3 | 10.5% | -4.5% | | | | | | |
| Gulf of Mexico | 21 | 18 | 23 | 3 | -2 | 16.7% | -8.7% | | | | | | |
| Gulf Oil | 17 | 16 | 23 | 1 | -6 | 6.3% | -26.1% | | | | | | |
| Percent | 81.0% | 88.9% | 100.0% | -7.9% | -19.0% | | | | | | | | |
| Gulf Gas | 4 | 2 | 0 | 2 | 4 | 100.0% | n.a. | | | | | | |
| Percent | 19.0% | 11.1% | 0.0% | 7.9% | 19.0% | | | | | | | | |
| Canada | 208 | 203 | 184 | 5 | 24 | 2.5% | 13.0% | | | | | | |
| Oil | 109 | 108 | 100 | 1 | 9 | 0.9% | 9.0% | | | | | | |
| Percent | 52.4% | 53.2% | 54.3% | -0.8% | -1.9% | | | | | | | | |
| Gas | 99 | 95 | 84 | 4 | 15 | 4.2% | 17.9% | | | | | | |
| Percent | 47.6% | 46.8% | 45.7% | 0.8% | 1.9% | | | | | | | | |
| North America | 1,123 | 1,110 | 772 | 13 | 351 | 1.2% | 45.5% | | | | | | |
| Prices | | | | | | | | | | | | | |
| Oil \$/bbl. | \$55.92 | \$57.06 | \$45.16 (\$1.14) | \$10.76 | -2.0% | 23.8% | | | | | | | |
| Oil \$/mmbtu | \$9.64 | \$9.84 | \$7.79 (\$0.20) | \$1.86 | -2.0% | 23.8% | | | | | | | |
| Gas \$/mmbtu | \$3.10 | \$3.12 | \$2.43 (\$0.01) | \$0.67 | -0.4% | 27.7% | | | | | | | |



Geopolitical

Two important energy deals were proposed during President Trump's trip to China, paving the way for Chinese energy investment in West Virginia and Alaska. The deals would increase dependence between the two nations and enhance collaboration in this key industry as the U.S. transitions into a role as an energy exporter. While the U.S. is in need of energy investment, China's government has been encouraging energy firms to diversify abroad, in part in order to gain access to fossil fuels...



Weather

The AccuWeather 1-5 day Outlook forecasts above-normal temperatures for the Western half of the US while the the balance of the country is projected to be below-normal or normal. The 6-10 Day Outlook forecasts the Eastern seacoast at below-normal temps



Sustainability and Renewables

In one of the fastest and most astonishing turnarounds in the history of energy, building *and* running new renewable energy is now cheaper than just running existing coal and nuclear plants in many areas.

A widely-used yearly benchmarking study — the Levelized Cost of Energy Analysis (LCOE) from the financial firm Lazard Ltd. — reached this stunning conclusion: In many regions “the full-lifecycle costs of building and operating renewables-based projects have dropped below the operating costs alone of conventional generation technologies such as coal or nuclear.”

with the balance of the country at mostly above-normal temps. The 11-15 day Outlook forecasts mostly normal temps for the Eastern US with the South at above-normal temps and North Central US at below-normal temps...



This Week's Key Takeaway

Natural Gas (and therefore electricity) prices move on the weather prediction. As this week's forecast over the next 30 days is considerably warmer than was projected last week, NYMEX prices have dropped back below \$3 for both the front month and one-year spread.

Others reasons move the market as well, such as rig count, geopolitical issues and storage levels. "Real" reasons (supply) for market movement are referred to as "fundamental" while "projected" changes or threats that may or may

not materialize are called "technical". Of course, there are times that the market moves up or down for no discernible reason...

Happy Thanksgiving!

| Next Day On-Peak Power (traded for 11/21/2017) | | |
|--|-----------------------------|-------------------------|
| ISO-NE Mass Hub \$32.85 | MISO Indiana Hub \$29.56 | NYISO Zone G \$31.52 |
| PJM West Hub \$27.93 | ERCOT North \$23.00 | CAISO SP15 \$54.01 |

