

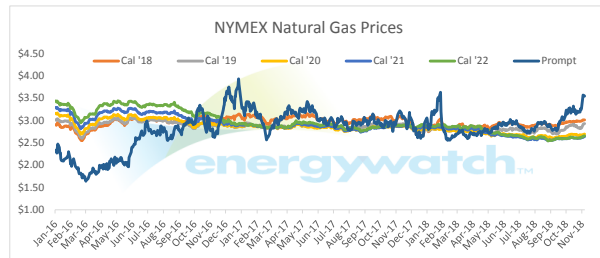
Week Ending: 11/8/2018

### Weekly Update:

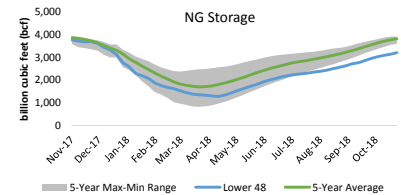
Natural gas futures closed on Thursday at \$3.543/MMBtu, up 7.88% from last week's closing price of \$3.284/MMBtu. Storage inventories grew by 65 bcf, which was higher than the expected 55 bcf injection and much higher than the 22 bcf build seen this same week last year. Direct Energy's *Daily Market Update* stated, "there is one more storage injection expected this season before withdrawals begin." The total 3,208 bcf in storage is only 73.3% of the total 4,373 bcf of storage capacity and is 15.3% below last year's level and 16.2% below the five-year average.

The EIA's *Natural Gas Weekly Update* reported, "Henry Hub spot prices rose 22¢ from \$3.29/MMBtu last Wednesday to \$3.51/MMBtu this past Wednesday. This report week marks the fourth straight week of price increases; during that time, Henry Hub spot prices have risen 20%" (EIA). Prices at the Transcontinental Pipeline Zone 6 trading hub for NYC increased 80¢ from \$2.75/MMBtu last Wednesday to \$3.55/MMBtu this past Wednesday. Temperatures were 2° F higher than normal, averaging 54° F in the Lower 48 states, and 4° F higher than last year at this time (EIA).

Natural gas pricing plays a key role in electricity power pricing due to the increasing reliance on natural gas fired generators as nuclear, coal, and oil generation is retired and mothballed. As the marginal unit of generation, gas prices are directly correlated to power pricing (more so in some regions such as NYC vs. others such as part of PJM). We keep an eye on natural gas market fundamentals in order to provide insights into forward power pricing for our clients. Gas production is expected to continue to grow, however, there is speculation that demand growth will outpace supply primarily due to LNG and Mexican exports and increased power burn, presenting upside risk to power pricing in the future.

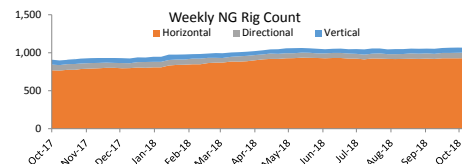


Natural Gas Storage Week Ending 11/4/2018	
Current Week Stocks (bcf)	3,208
Previous Week Stocks (bcf)	3,143
Implied Net Change (bcf)	65
Expected Net Change (bcf)	55
Variance (bcf)	10
Year-Ago Stocks (bcf)	3,788
Variance vs Prev. Year (%)	-15.31%
5-Year Average (bcf)	3,829
Variance vs 5-YR Avg (%)	-16.22%



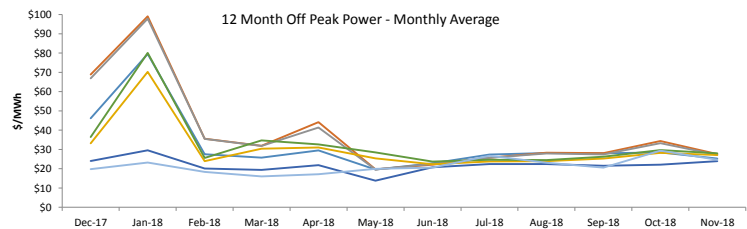
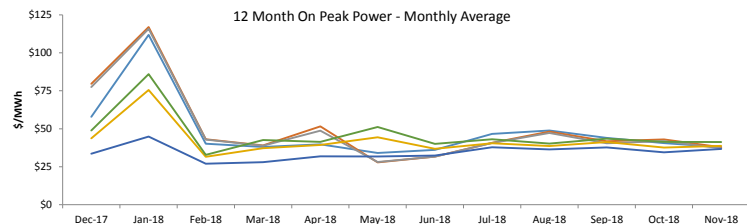
	\$/MMBtu	W-o-W Δ	Y-o-Y Δ
<b>Prompt Month</b>	\$3.543	3.1%	12.0%
<b>12-Month</b>	\$3.011	3.1%	-2.0%
<b>24-Month</b>	\$2.862	2.0%	-4.6%
<b>Cal 18</b>	\$3.020	0.6%	-1.7%
<b>Cal 19</b>	\$2.957	2.7%	1.4%
<b>Cal 20</b>	\$2.700	0.8%	-5.6%
<b>Cal 21</b>	\$2.641	0.8%	-7.9%
<b>Cal 22</b>	\$2.654	0.7%	-8.0%

Week Ending:	11/2/2018	W-o-W Δ	Y-o-Y Δ
Oil Rigs	874	-0.1%	19.9%
Gas Rigs	193	0.0%	14.2%
Vertical	65	-4.4%	6.6%
Horizontal	929	0.2%	21.6%
Directional	73	0.0%	0.0%



	Price	W-o-W Δ	Y-o-Y Δ	\$/MMBtu
<b>Natural Gas (\$/MMBtu)</b>	\$3.543	\$0.36	11.6%	\$3.54
<b>CSX Coal (\$/ton)</b>	\$77.55	\$0.05	21.2%	\$3.10
<b>PRB Coal (\$/ton)</b>	\$12.50	\$0.00	11.1%	\$0.71
<b>WTI Crude Oil (\$/bbl)</b>	\$60.67	-\$5.51	6.8%	\$10.36
<b>#2 Heating Oil (\$/gal)</b>	\$2.24	-\$0.02	16.4%	\$16.15

	Avg. Temp	Past 10 Weeks	Departure From Normal	CDD	HDD
Boston	55		11	0	10
Chicago	37		-9	0	29
Columbus	39		-5	0	26
Dallas	58		2	0	7
Denver	32		-10	0	33
Detroit	41		1	0	24
Hartford	50			0	15
Houston	74		14	9	0
Indianapolis	39		-7	0	26
Las Vegas	61		2	0	4
Los Angeles	66		3	1	0
Miami	80		4	16	0
Minneapolis	27		-10	0	38
New York City	56		8	0	10
Philadelphia	53		5	0	12
Phoenix	71		3	6	0
Salt Lake City	38		-3	0	27
San Diego	68		6	4	0
San Francisco	59		2	0	6
Seattle	45		-1	0	20
St. Louis	41		-7	0	25
Washington D.	51		2	0	14



## 2014 - 2018 YTD Locational Marginal Pricing (LMPs)

