

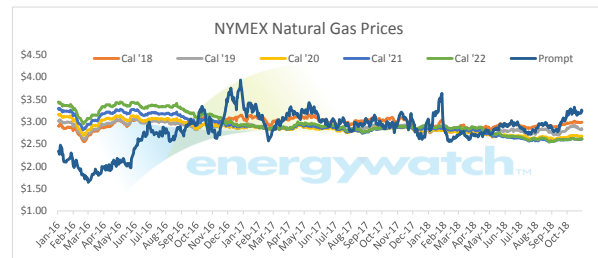
Week Ending: 11/1/2018

Weekly Update:

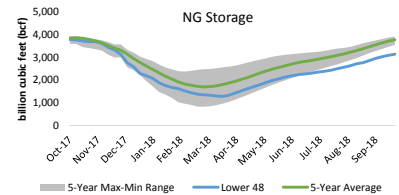
Front month natural gas futures closed on Thursday at \$3.237/MMBtu, up 1.63% from last week's closing price of \$3.185/MMBtu. Natural gas stockpiles increase by 48 bcf, which was right in line with the expected 48 bcf injection. The total 3,143 bcf of natural gas in storage, which is 71.9% of the total 4,373 bcf of storage capacity, is 16.8% below the five-year average and 16.54% below last year's level. "At the Algonquin Citygate, which serves Boston-area consumers, prices went down \$1.31 from \$4.21/MMBtu last Wednesday to \$2.90/MMBtu this past Wednesday. At the Transcontinental Pipeline Zone 6 trading point for New York City, prices decreased 74 cents from \$3.49/MMBtu last Wednesday to \$2.75/MMBtu this past Wednesday" (EIA).

Carbon dioxide emissions have declined 28% since 2005 in the U.S. power sector according to the EIA. "EIA has calculated that CO2 emissions from the electric power sector totaled 1,744 million metric tons (MMmt) in 2017, the lowest level since 1987." The August 2018 estimated natural gas consumption level was 2,313 bcf, 74.6 bcf/d, which was 9.9% higher than the 2,105 bcf consumed in August 2017. The 2018 August natural gas consumption level was the highest for this month since 2001, which was when the EIA began using its "current definitions for consuming sectors." Exports increased 24.3% this past August from the previous year. This increase is driven by LNG exports, which were more than twice the level in August 2018 than they were this same month last year (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 parts 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.

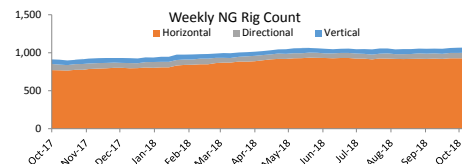


Natural Gas Storage Week Ending 10/28/2018	
Current Week Stocks (bcf)	3,143
Previous Week Stocks (bcf)	3,095
Implied Net Change (bcf)	48
Expected Net Change (bcf)	48
Variance (bcf)	0
Year-Ago Stocks (bcf)	3,766
Variance vs Prev. Year (%)	-16.54%
5-Year Average (bcf)	3,781
Variance vs 5-YR Avg (%)	-16.87%



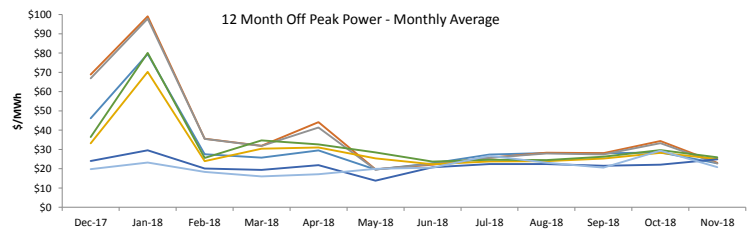
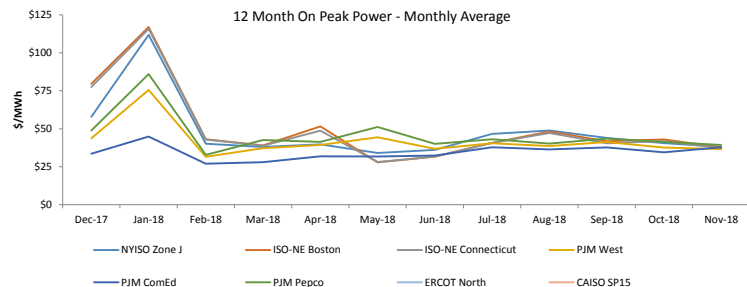
	\$/MMBtu	W-o-W Δ	Y-o-Y Δ
Prompt Month	\$3.237	1.2%	5.4%
12-Month	\$2.839	-1.5%	-6.0%
24-Month	\$2.758	-1.0%	-7.2%
Cal 18	\$2.981	0.0%	-1.6%
Cal 19	\$2.812	-0.7%	-3.4%
Cal 20	\$2.667	-0.1%	-6.9%
Cal 21	\$2.605	0.2%	-9.2%
Cal 22	\$2.616	0.3%	-9.4%

Week Ending:	10/26/2018	W-o-W Δ	Y-o-Y Δ
Oil Rigs	875	0.2%	18.7%
Gas Rigs	193	-0.5%	12.2%
Vertical	68	-1.4%	3.0%
Horizontal	927	0.1%	20.5%
Directional	73	1.4%	-1.4%



	Price	W-o-W Δ	Y-o-Y Δ	\$/MMBtu
Natural Gas (\$/MMBtu)	\$3.237	\$0.02	11.9%	\$3.24
CSX Coal (\$/ton)	\$77.50	\$0.05	20.6%	\$3.10
PRB Coal (\$/ton)	\$12.50	\$0.00	7.8%	\$0.71
WTI Crude Oil (\$/bbl)	\$63.69	-\$2.74	17.3%	\$10.88
#2 Heating Oil (\$/gal)	\$2.26	\$0.01	21.4%	\$16.33

	Avg. Temp	Past 10 Weeks	Departure From Normal	CDD	HDD
Boston	53		-2	0	12
Chicago	51		7	0	14
Columbus	53		9	0	12
Dallas	58		-2	0	7
Denver	39		-6	0	26
Detroit	50		7	0	15
Hartford	53			0	12
Houston	66		3	3	2
Indianapolis	52		8	0	14
Las Vegas	62		-1	0	3
Los Angeles	67		0	2	0
Miami	76		-1	11	0
Minneapolis	43		2	0	22
New York City	59		1	0	6
Philadelphia	58		1	0	7
Phoenix	67		-3	3	0
Salt Lake City	43		-7	0	22
San Diego	68		0	3	0
San Francisco	63		0	0	2
Seattle	54		5	0	11
St. Louis	53		6	0	12
Washington D.	59		2	0	6



2014 - 2018 YTD Locational Marginal Pricing (LMPs)

