

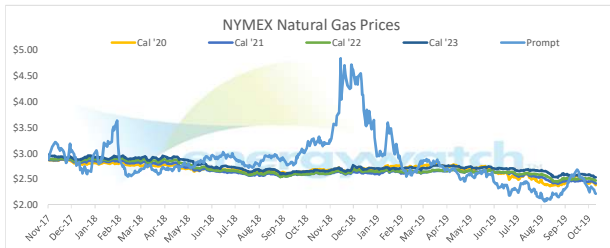
Week Ending: 11/14/2019

### Weekly Update:

With temperatures plummeting into the low 20's in New York City this week, we saw both natural gas and electricity prices spike as heating demand increased drastically. A 3 Bcf injection from the gas storage report did not alleviate the pressure on pricing as prompt month gas prices traded as much as 8 cents higher afterwards. Gas is currently being traded around \$2.65/MMBtu. This brings gas injection season to a close, with total inventories 2 Bcf higher than the 5-year average of 3,732 Bcf. At this healthy storage level, winter gas pricing should not be as volatile as previous years.

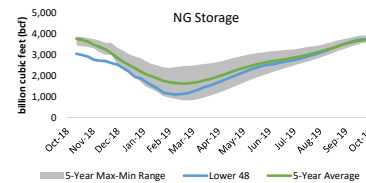
Power prices in the Northeast were the most volatile. Zone J On Peak Day Ahead prices were trading around \$25/MWh last week but is now about \$6/MWh higher. PJM's Western Hub prices remained in the low \$30s/MWh range and Mass Hub closed at nearly double last week's price at \$59/MWh. Early forecast show temperatures in the northeast continue to be below average for the next week or so.

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 has grown and surpassed any speculation that production would not be able to keep up with demand due to LNG and Mexican exports.

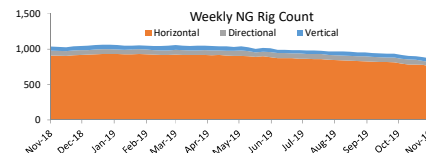


	\$/MMBtu	W-o-W Δ	Y-o-Y Δ
Prompt Month	\$2.647	-1.7%	-40.1%
12-Month	\$2.501	-1.1%	-23.3%
24-Month	\$2.493	-0.6%	-15.8%
Cal 19	\$2.643	-0.2%	-15.7%
Cal 20	\$2.505	-1.0%	-5.5%
Cal 21	\$2.479	0.0%	-5.0%
Cal 22	\$2.480	-0.6%	-5.5%

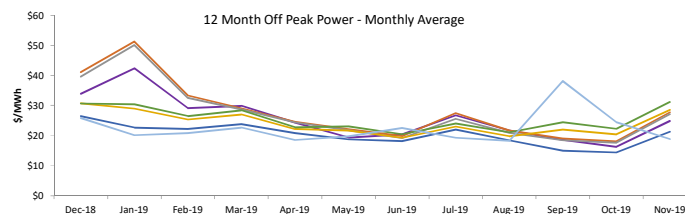
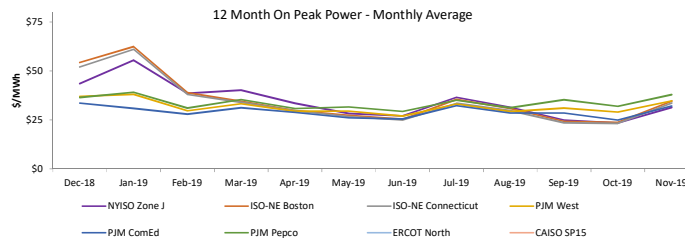
Natural Gas Storage Week Ending 11/8/2019	
Current Week Stocks (bcf)	3,732
Previous Week Stocks (bcf)	3,729
Implied Net Change (bcf)	3
Expected Net Change (bcf)	0
Variance (bcf)	3
Year-Ago Stocks (bcf)	3,241
Variance vs Prev. Year (%)	15.1%
5-Year Average (bcf)	3,730
Variance vs 5-YR Avg (%)	0.1%



Week Ending:	11/8/2019	W-o-W Δ
Oil Rigs	684	-3.7%
Gas Rigs	130	-9.7%
Vertical	51	-1.9%
Horizontal	752	0.4%
Directional	57	5.6%



	Avg. Temp	Past 10 Weeks	Departure From Normal	CDD	HDD
Boston	30		-16	0	35
Chicago	23		-18	0	42
Columbus	25		-19	0	40
Dallas	42		-15	0	23
Denver	42		3	0	23
Detroit	23		-18	0	42
Hartford	27		0	0	38
Houston	42		-21	0	23
Indianapolis	26		-19	0	39
Las Vegas	63		6	0	2
Los Angeles	64		2	0	2
Miami	79		3	14	0
Minneapolis	25		-10	0	40
New York City	33		-16	0	32
Philadelphia	32		-16	0	33
Phoenix	69		4	4	0
Salt Lake City	49		8	0	16
San Diego	63		1	0	2
San Francisco	56		0	0	9
Seattle	50		4	0	15
St. Louis	31		-17	0	34
Washington D.C.	29		-19	0	36



## 2014 - 2019 YTD Locational Marginal Pricing (LMPs)

