

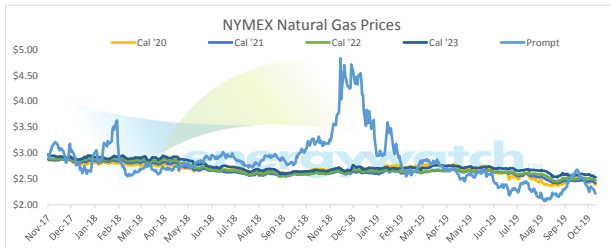
Week Ending: 10/10/2019

Weekly Update:

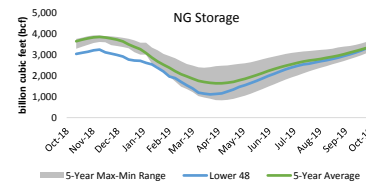
The front month natural gas contract closed yesterday at \$2.218/MMBtu. Natural gas stockpiles increased by 98 bcf, which was right in line with market estimates for the week ending October 4th. The total 3,415 bcf currently in storage is 16% higher than last year's 2,943 bcf injection seen this same week and 0.3% below the five-year average of 3,424 bcf. "At the Transcontinental Pipeline Zone 6 trading point for New York City, prices increased 7¢ from \$1.50/MMBtu last Wednesday to \$1.57/MMBtu yesterday. Prices in Boston and New York hit the lowest prices of the year—81¢/MMBtu and 68¢/MMBtu, respectively—on Friday amid low demand, but rebounded on Monday as cooler temperatures increased heating demand and a force majeure on the Columbia Gas pipeline" (EIA).

EIA's Short-Term Energy and Winter Fuels Outlook "forecasts that average household expenditures for all major home heating fuels will decrease this winter compared with last." This is largely because winter temperatures are expected to be higher this year than they were last year. Electric power sector generation from renewables, aside from hydropower, will grow from 414 billion kWh in 2019 to 471 billion kWh in 2020. "After rising by 2.7% in 2018, U.S. energy-related carbon dioxide emissions will decline by 2.4% in 2019 and by 1.7% in 2020, due in part to lower forecast consumption of energy" (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 has grown and surpassed any speculation that production would not be able to keep up with demand due to LNG and Mexican exports.

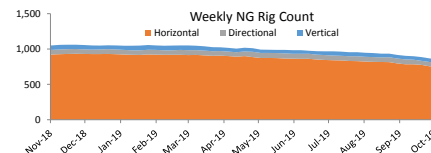


Natural Gas Storage Week Ending 10/4/2019	
Current Week Stocks (bcf)	3,415
Previous Week Stocks (bcf)	3,317
Implied Net Change (bcf)	98
Expected Net Change (bcf)	98
Variance (bcf)	0
Year-Ago Stocks (bcf)	2,943
Variance vs Prev. Year (%)	16.0%
5-Year Average (bcf)	3,424
Variance vs 5-YR Avg (%)	-0.3%

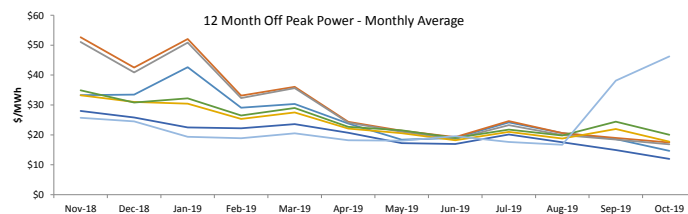
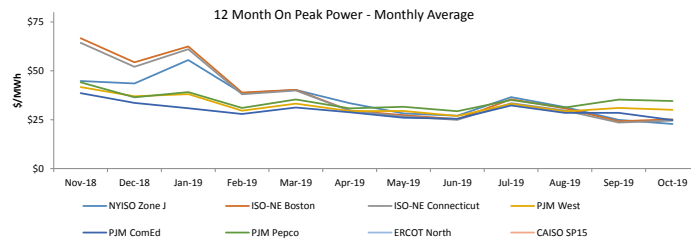


	\$/MMBtu	W-o-W Δ	Y-o-Y Δ
Prompt Month	\$2.218	-3.9%	-31.3%
12-Month	\$2.348	-2.6%	-20.7%
24-Month	\$2.382	-2.0%	-16.1%
Cal 19	\$2.592	-0.5%	-10.6%
Cal 20	\$2.378	-2.3%	-11.5%
Cal 21	\$2.418	-1.3%	-7.6%
Cal 22	\$2.472	-1.0%	-5.7%

Week Ending:	10/4/2019	W-o-W Δ
Oil Rigs	710	-0.4%
Gas Rigs	144	-1.4%
Vertical	52	2.0%
Horizontal	749	-0.4%
Directional	54	-5.3%



	Avg. Temp	Past 10 Weeks	Departure From Normal	CDD	HDD
Boston	57		1	0	8
Chicago	61		6	0	4
Columbus	61		5	0	4
Dallas	75		5	10	0
Denver	38		-15	0	27
Detroit	59		7	0	6
Hartford	55		0	0	10
Houston	80		7	16	0
Indianapolis	64		7	1	2
Las Vegas	79		6	14	0
Los Angeles	67		1	2	0
Miami	84		3	19	0
Minneapolis	57		5	0	8
New York City	60		-1	0	5
Philadelphia	60		0	0	5
Phoenix	79		0	15	0
Salt Lake City	43		-12	0	22
San Diego	67		1	2	0
San Francisco	64		1	1	1
Seattle	45		-10	0	20
St. Louis	64		3	1	2
Washington D.C.	63		5	0	2



2014 - 2019 YTD Locational Marginal Pricing (LMPs)

