ENERGY MARKET

Monthly Update

September 2018

Market Commentary

Powered by Transparent Energy and Gary Graham, Director of Energy Management

At last glance, we were in the midst of a month-long market run-up as several heat waves ripped through major demand centers across the country with no apparent certainty as to when they might subside. That uncertainty was quickly wiped out with the arrival of some major storm systems that brought sustained cooler air into the northeast and southwest during the beginning of September, and of course, Hurricane Florence has brought reductions in demand of its own (power outages, decreased cooling demand) and will continue to do so over the next few weeks. The extent to which Florence will interrupt production remains to be seen, but historically speaking, we have seen minor interruptions in production as a result of catastrophic weather. The hope is that the impact to the people and economies in areas most at risk is minimal.

With that said, September has been one seemingly continuous market slide resultant of decreased demand and increasing production, bringing prices to their knees and at levels we haven't witnessed since late July. As of today, the natural gas spot market is trading around $2.80 while calendar strips for 2020 and 2021 are trading around $2.60. Market conditions are ripe for anyone considering going long on their subsequent supply agreement, though it is very unclear how long that might remain the case.

Since the end of April, aggregate temperatures have been warmer than normal for the country as a whole, week-after-week, and month-after-month. From April 28 to September 1 cooling degree days totalled 22.9 percent more than normal, meaning conditions were significantly warmer than normal. This is also largely the reason for the existing substantial natural gas storage deficit heading into winter. Regardless of which winter weather prediction you take stock in
(some call for teeth chattering cold, while others call for above average temps), the fact remains that at 2,636 Bcf, total working gas is below the five-year historical range. Over the past five years, storage levels have peaked in the week ending November 9 at around 3,800 Bcf. What this translates to is that there are nine more weeks remaining in injection season to make up the deficit before withdrawal season sets in. Projections for the next two-three weeks call for no real reduction in the deficit, meaning those final six weeks of injection season will need to average around 200 Bcf to bridge the gap (or three times the average injection we've been seeing). Those levels are largely unattainable, and this year's storage is expected to peak at 3,300 Bcf, which would be the lowest level to start heating/withdrawal season since 2005. Going into this winter, natural gas prices will be on thin ice, so to speak. Stay tuned.

Quick Hits

- The EIA reported Thursday morning that, for the week ending September 7, U.S. inventories increased by 69 bcf, larger than the expected injection of 65 bcf.
- The storage injection for the same week last year was 91 bcf, and the five-year average injection for the same week is about 77 bcf.
- Total stockpiles now stand at 2,636 bcf, down by 20.1% from a year ago and 18.4% below the five-year average for the same week.
- Day Ahead On-Peak prices have averaged around $40/MWh in PJM West Hub over the course of last week. Strong natural gas spot prices helped forward prices for the 2019 calendar year in West Hub climb by approximately $0.50/MWh from last week.

Bullish Factors

- A though yesterday's EIA storage report was about spot on with average industry ideas, the deficit stretched to 596 bcf and could easily exceed 600 bcf with the issuance of next week's EIA report.
- Both the 6-10 day and 8-14 day weather outlooks call for above average temperatures in the majority of the country's major cooling demand regions.
- Sabine Pass liquification terminal sent five vessels with a combined LNG carrying capacity of 17.7 Bcf departed the US from August 30-September 5.
- The storage deficits to both the year ago and 5 year average have remained consistently at ~-20% over the past few weeks, driven by strong power burns.

Bearish Factors

- Waning summer cooling demand amid rising production.
- Overall supply increased by 0.2 Bcf from the previous week. Total demand decreased, falling by 1.9 Bcf.
- With widely expected flooding in the Carolinas that may very well cause power outages, Hurricane Florence is likely to trigger in those states a drop in demand somewhat similar to the impact of Hurricane Irma in Florida last year (about 10bcf drop over the course of week).

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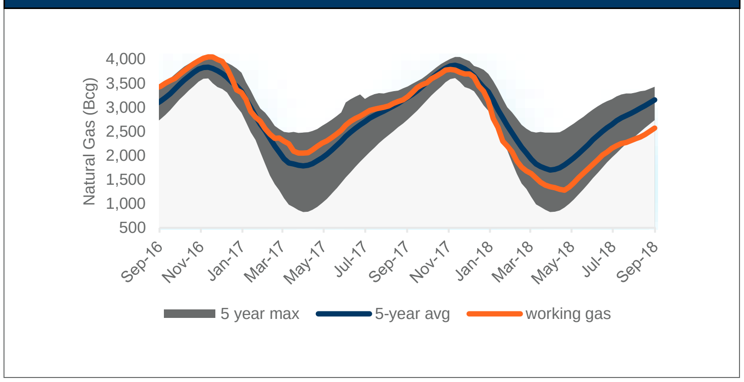
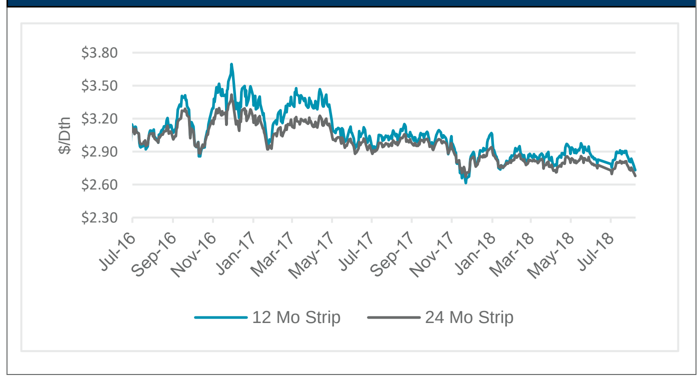
Natural Gas

CURRENT/HISTORICAL STORAGE (Bcf)							NYMEX NG FUTURES (PROMPT MONTH)						
Region	This Week	Last Week	% Chg.		Year Ago	5-Yr Avg.	Trade Date	Open	High	Low	Settle		Est. Vol
East	759	737	2.99%	▲	757	807	9/7/2018	2.777	2.785	2.759	2.776	▼	-0.04	116.155
West	1363	1327	2.71%	▲	1355	1508	9/6/2018	2.793	2.797	2.765	2.772	▼ -0.75	145,938
Producing	1036	1029	0.68%	▲	1034	1163	9/5/2018	2.815	2.843	2.786	2.795	▼ -0.71%	144,412
TOTAL	3158	3093	2.10%	▲	3146	3478	9/4/2018	2.9	2.904	2.812	2.823	▼ -2.66%	228,207

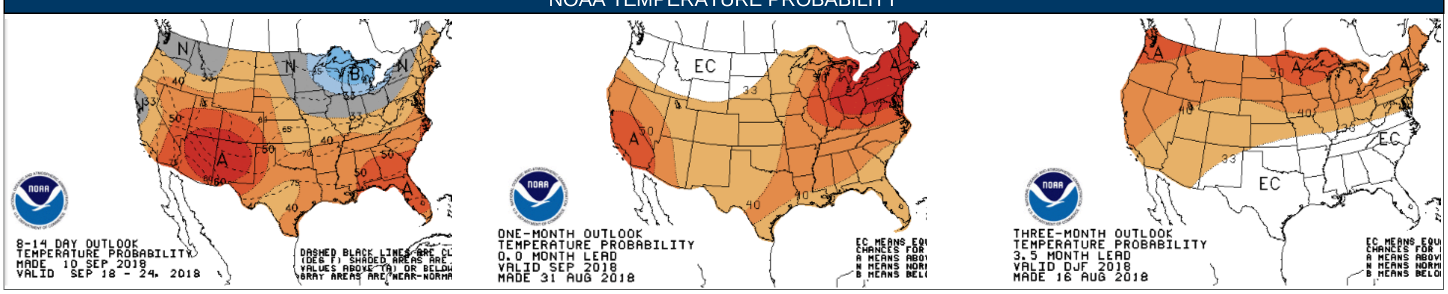
WORKING GAS IN UNDERGROUND STORAGE



ROLLING 12/24 MOS. NYMEX FORWARD STRIPS ($/DTH)



NOAA TEMPERATURE PROBABILITY

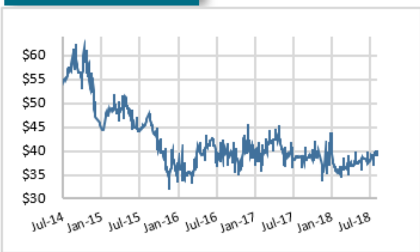


Weekly Average Retail Electricity Price Trends (Oct Start)

Week Ending	New Jersey	New York	Massachusetts	Ohio	Illinois	Texas	DC	Pennsylvania	Connecticut
8/3/2018	$0.1015	$0.0623	$0.1156	$0.0585	$0.0570	$0.0506	$0.0758	$0.0682	$0.0974
8/24/2018	$0.1032	$0.0633	$0.1136	$0.0590	$0.0564	$0.0511	$0.0764	$0.0686	$0.0966
8/31/2018	$0.1048	$0.0631	$0.1147	$0.0591	$0.0562	$0.0513	$0.0772	$0.0687	$0.0966

*actual rates may vary by usage. Rates are aggregated from sources reflecting the General Service (GS) rate class

NYISO - Zone J



PJM - PSEG

ERCOT - TX NORTH

NE-ISO - MASS HUB

PJM - COMED

PJM - ATSI

Energy Market News

EIA Short Term Energy Outlook
http://www.eia.gov/forecasts/steo/

New Opportunity Highlight – Project Financing

Grants and utility incentives are at an all time high, with new programs coming on board every day. The emergence of new programs, such as on-bill financing, PACE Financing, and Performance Contracting are expanding through major markets in the US. P.A.C.E. financing specifically, along with other financial programs have opened the door for significantly more capital projects across the country.
Benefits include:

- Reduce energy spend by 10-20%
- Project financing can be tied to the assets not ownership
- Claim valuable government rebates and incentives
- Expedite increases to net operating income (NOI)
- Reap immediate benefits from lighting, efficiency, storage, HVAC and generation projects

Data Highlights

WTI crude oil futures price	09/07/2018: **$67.75 /bbl**
↓ $2.05 from week earlier	↑ $18.66 from year earlier
Natural Gas Inventories	08/31/2018: **2,568 Bcf**
↑ 63 Bcf from week earlier	↓ 643 Bcf from year earlier
Natural gas futures price	09/07/2018: **$2.776/MMBtu**
↓ $0.140 from week earlier	↓ $0.205 from year earlier
Weekly coal production	09/01/2018: **15.616 million tons**
↑ 0.2 million tons week earlier	↓ 0.081 million tons year earlier

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