CHOICE! ENERGY SERVICES

NYMEX UPDATE

BULLS & BEARS REPORT

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PAPER TOPIC: NATURAL GAS

INTRODUCTION

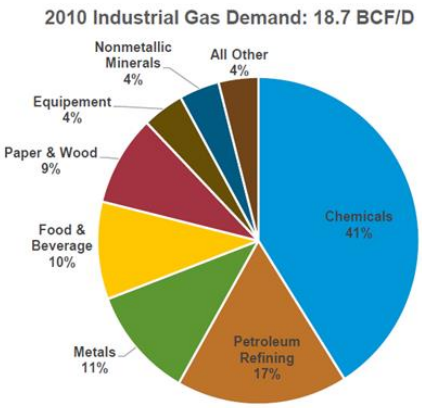
The NYMEX natural gas market has been choppy at best during the month of January. Prompt month gas has traded range bound, with the majority of trading in the $3.25 to $3.375/MMBtu range. The lack of conviction in the market place is largely due in part to muddy temperature forecasts for the remainder of winter. Some forecasters are predicting a strong winter blast to hit in February, while others have continued their forecast of mild weather. The lack of winter weather in the month of January has prevented the Bulls to garner any further momentum that they achieved in the month of December trading. As a result, the February 2017 contract settled at $3.391/MMBtu, **$0.539/Dth** lower than the January 2017 contract.

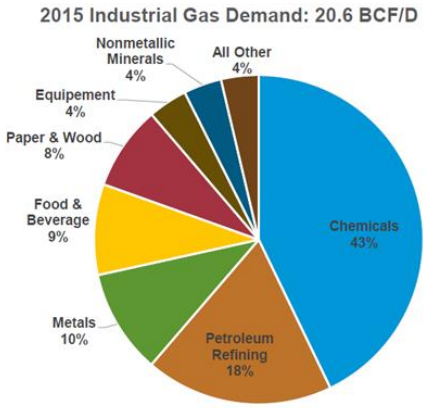
The remainder of the NYMEX forward curve is following the same pattern as prompt month, without much breakout to either side. Both the Bulls and the Bears have jostled for their position, each taking control of one side of the supply/demand curve. The Bulls have full control of the demand side of the curve, as natural gas consumption is growing in every sector (generation, exports, LNG, industrial, chemicals). The same can be said about the Bears on the supply side, as natural gas production has the potential to grow substantially in 2017 and beyond. So, who is going to make the first big move? With weather and storage currently in a neutral position it's hard to take a firm position. However, we will go over some of the Bulls and Bears fundamentals in this report and even bring up some new topics (i.e. The Trump Effect) that might be affecting the energy landscape in the coming months.

• THE BULLS •

INDUSTRIAL DEMAND

The growth in U.S. natural gas demand has been well documented in the Bulls & Bears report. Previous topics included increased natural gas generation, bullish temperature forecasts, LNG Exports, and Exports to Mexico. However, one topic that hasn't been discussed in detail is the growth in industrial demand. Industrial demand for natural gas has seen a steady growth since hitting lows following the Great Recession of 2008-2010. At that point natural gas demand reached as low as 16.9 Bcf/D (2009), but has seen a renaissance in recent years with demand now matching that of early 2000s. The latest data from the EIA indicates demand was at 21.03 Bcf/D in 2016 and is expected to grow in 2017 and 2018 to reach **21.57 Bcf/D.**



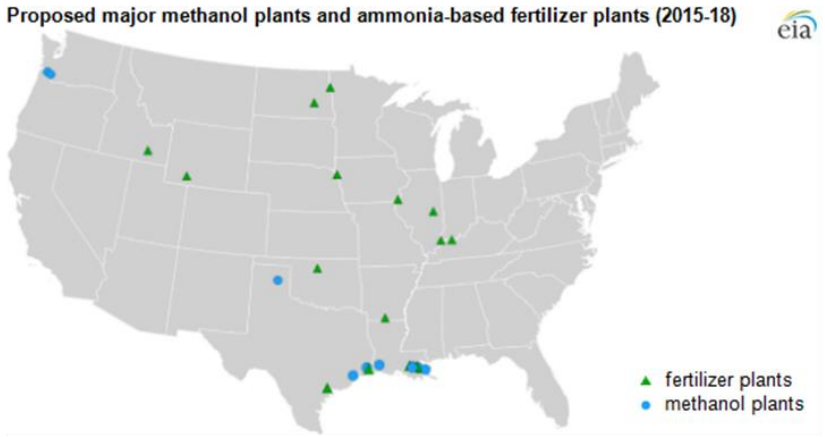


	Consumption (billion cubic feet per day)					Consumption Growth (bcf per day)			
	2014	2015	2016	2017	2018	2015	2016	2017	2018
Electric power	22.32	26.34	27.45	26.24	26.96	4.02	1.11	-1.21	0.72
Industrial	20.95	20.64	21.03	21.16	21.57	-0.31	0.39	0.13	0.41
Residential and commercial	23.43	21.39	20.35	21.50	21.52	-2.04	-1.04	1.15	0.02
Other	6.16	6.28	6.24	6.47	6.80	0.12	-0.04	0.23	0.33
Total consumption	72.86	74.65	75.07	75.37	76.85	1.80	0.42	0.30	1.47

Source: EIA, Short-Term Energy Outlook, January 2017

Industrial natural gas demand involves a vast array of sectors as seen in the pie diagram. The fuel can be used in many different operations, including: firing boilers for steam, heat (baking, drying commodities, and melting), and combined heat and power for on-site generation. However, the largest industrial demand for natural gas comes from the chemical sector which uses natural gas as a feedstock in the petrochemical industry. Petrochemicals are the foundation of many household products. For example, ethylene and propylene are used in plastic products, butadiene is in making synthetic rubber, benzene is a raw material for dyes and synthetic detergents. Due to the low price environment of natural gas, this petrochemical industry is expected to grow with additional cracker facilities and export terminals being built in the coming years.

Significant Chemical Expansions are Currently Under Construction

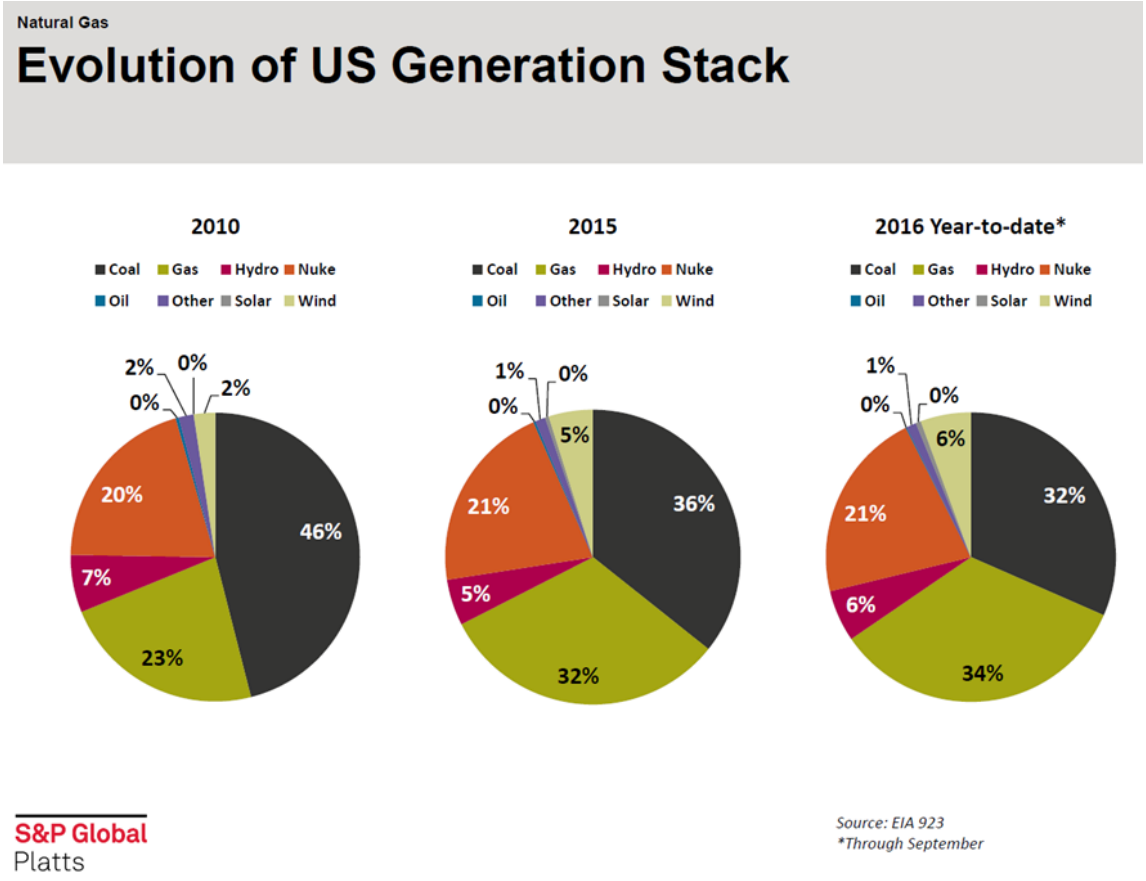


Source/Map: Energy Information Administration (EIA)

COAL RETIREMENTS

Due to both state (renewable portfolio standards) and federal (CASPR, MATS) regulations, coal generation has been going the way of the dodo bird in recent years. Per a recent EIA report, "Available coal-fired capacity fell by an estimated 47.2 GW between the end of 2011 and the end of 2016, equivalent to a 15% reduction in the coal fleet over the five-year period." The loss of coal-fired generation has been offset by the increase in natural gas generation. In 2015 the EIA reported a 19% increase in natural gas fired generation and 2016 was the first year natural gas surpassed coal as the primary generation fuel for electricity generation. The 2016 U.S. generation stack shows natural gas represented 34% of electricity nationwide, where coal only represented 30%. This is in far contrast of a few years ago when in 2010 coal represented 46% of the U.S generation stack.

Coal generation retirement is not expected to stop anytime soon. The EIA has identified at least another 14 GW of coal capacity that is expected to retire in the next decade, and that number could grow if federal regulations targeting the coal industry are upheld. Additionally, coal retirements are not just occurring in "green states" such as New England or the Pacific Northwest. Coal country is also investing in natural gas generation as seen in Kentucky which is having two coal generators close in 2017, representing 9% of the state's overall coal-fired capacity.



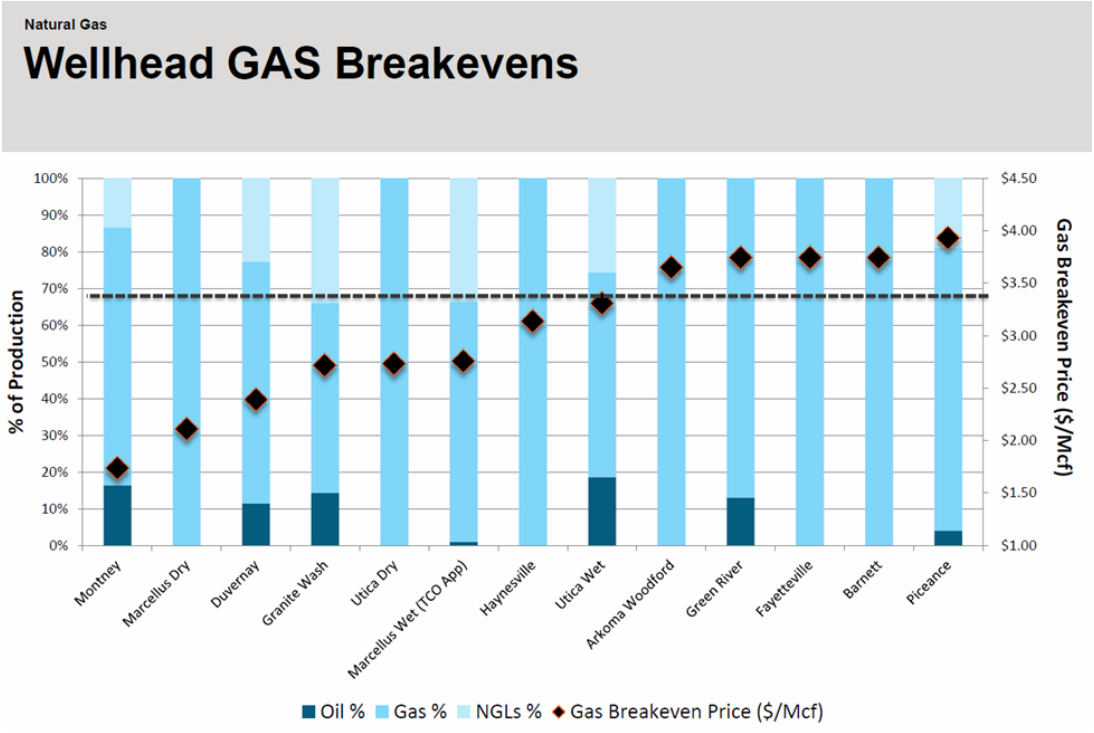
Source/Graph: S&P Global Platts Winter Outlook Webinar

• THE BEARS •

PRODUCTION GROWTH

Many analysts are pointing to the 2016 decline in production as a reason for being bullish on natural gas, but Choice believes production is actually a bearish fundamental. Production decreases in 2016 were a direct result of falling rig counts due to the collapse in natural gas prices. Several months of natural gas pricing below $2.00/MMBtu (March – June NYMEX contracts) doesn't motivate E&P companies to put more exploratory rigs in the ground. Not even the gas rich Marcellus Shale can breakeven in a 2.00/MMBtu market, and several other shale plays have a breakeven cost above $3.50/MMBtu. However, since the collapse in pricing of early 2016 natural gas pricing has rebounded. The first rally, although very brief, occurred in early October 2016. During that time, prompt month natural gas pricing traded above $3.25/MMBtu, giving many producers the opportunity to sell gas well above their breakeven costs. The next run in pricing occurred in December, supported by a cold start to winter. Prompt pricing reached above $3.75/MMBtu on several occasions throughout the month, and finished on a strong note. The January 2017 contract settled at $3.930/MMBtu.

The remainder of 2017 curve is trading at $3.25/MMBtu or higher which is providing revenue above the breakeven costs of several shale plays. Current levels provide great opportunity for producers in the Marcellus and Utica region, but it also brings shale plays such as Haynesville and Fayetteville back into play. Haynesville in particular, with breakeven costs around $3.00/MMBtu and its close proximity to LNG export terminals, should see resurgence in natural gas production. Production has Haynesville has pleateaued in the last two years at 3.75 Bcf/D after experiencing production highs above 7.00 Bcf/D in 2012.



Source/Graph: S&P Global Platts Winter Outlook Webinar

Additionally, the EIA Short –Term Energy Outlook (STEO) report continues to show growth in production over the coming years. Although the report is not as optimistic on marked production as it was a few months ago, it still shows marked production (combination of production & imports) of natural gas to be near 80 Bcf/D in the United States in 2017 and well above that market by the end of 2018. Although production has flattened, and slightly decreased in recent months, current marked production levels of 77.23 Bcf/D is on the high end of the production curve. Natural gas production is 10 Bcf/Day higher than just a few years ago.

US Marked Production (Bcf per Day)							
Historical/Forecast provided by EIA							
	2012	2013	2014	2015	2016	2017	2018
Jan	69.44	69.10	71.60	77.14	78.18	77.23	*81.14*
Feb	68.08	69.44	71.32	78.31	79.43	*77.68*	*81.56*
Mar	68.34	69.18	72.27	78.68	78.41	*78.06*	*81.79*
Apr	68.15	69.81	72.81	79.71	77.99	*78.45*	*81.81*
May	68.43	69.88	73.67	78.85	77.76	*78.61*	*81.78*
Jun	68.00	69.56	74.17	78.95	76.81	*78.57*	*81.73*
Jul	69.75	71.37	75.02	78.96	76.53	*78.95*	*81.94*
Aug	69.41	71.23	75.98	78.91	77.21	*79.57*	*82.43*
Sep	69.81	70.96	76.18	79.67	76.79	*79.92*	*82.74*
Oct	69.96	71.34	76.65	78.76	75.84	*80.34*	*83.20*
Nov	70.06	72.42	77.47	78.74	76.68	*80.61*	*83.70*
Dec	69.44	70.28	79.19	78.65	77.00	*80.84*	*84.26*

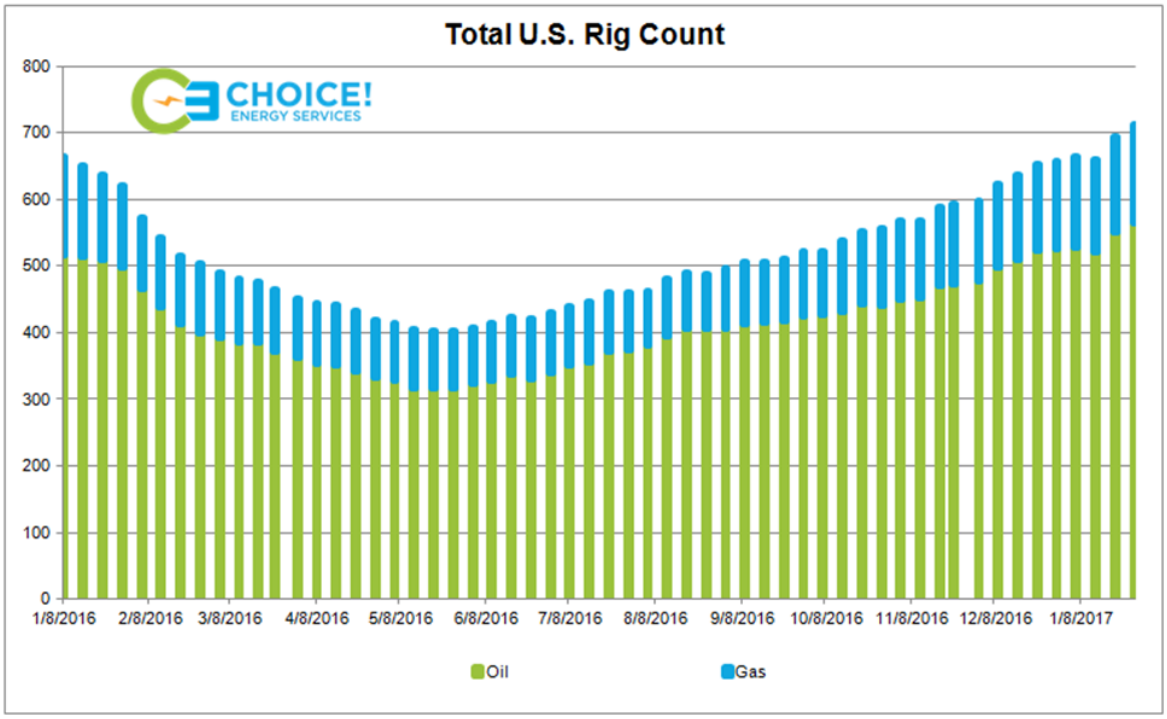
Source: EIA Weekly Natural Gas Storage Report
Chart: Choice Energy Services

RIG COUNT

If we have said it once, we have said it 1,000 more, rig counts are climbing. Choice Energy Services has focused on the turnaround of overall rig count numbers since hitting its low in May of 2016, while many analysts seem to focus on the 2016 fallout. While rig counts are not near 2014 levels, they are at the highest levels in over a year. The latest Baker Hughes report (01/27/2017) shows the current rig count at 712 total rigs (566 Oil v 145 Natural Gas) representing a **76.2%** increase since the lows that were set in the 05/27/2016 report.

The biggest move in rig counts occurred in the last couple of months where the total U.S. rig count has increased by 119, representing nearly a 30% increase since the end of November. As mention in the "Production Growth" section, the recent escalation in rig counts shouldn't come as too much of a surprise. Producers finally had financial incentive to put more rigs in the ground. Choice forecasted in our last Bulls & Bears report that rigs would rise in the current price environment, and we expect that to continue in the coming weeks.

Furthermore, when one considers the efficiency of rigs today, the rise in rigs counts is substantial news. As Choice mentioned previously in other reports, just a few years ago it took roughly 23 days to drill a well in Marcellus; now it's just 14 days. Improvements in the shale drilling process doesn't stop with just the initial drilling stage, production has also improved dramatically per rig. Marcellus and Utica specifically have seen a large increase in the average production per rig. The Marcellus production per rig is now averaging 12,774.3 Mcf/D to start 2017, equating to nearly a **200%** increase since 2012. The Utica shale play has seen a steep rise production in recent years, moving from just 1,435 Mcf/D per rig in 2013 to 8,696.8 Mcf/D per rig based on current production numbers. Thus, rigs are more efficient than ever before and are climbing in numbers with each weekly report.

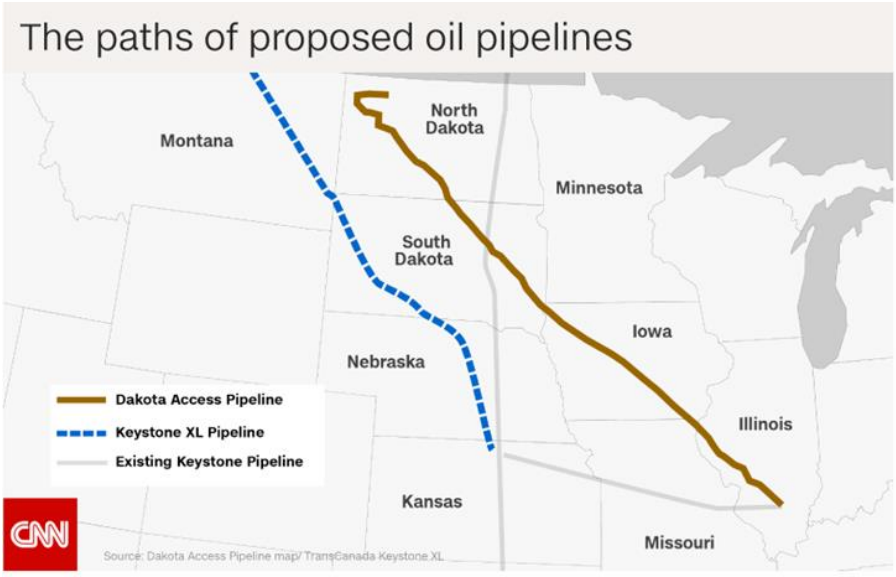


Source: Baker Hughes
Graph: Choice Energy Services

THE TRUMP EFFECT

Love him or hate him Donald Trump is officially the President of the United States. He took office nearly 2 weeks ago and he is not wasting any time putting his plans into action, especially in regards to energy. Just last week he signed an executive action to advance the approval of two recently stalled pipelines. Both the Dakota Access (which would transport oil from the Bakken Shale) and the Keystone XL (which would transport oil from Alberta oil sands to the refineries on the Gulf Coast) are now back on the table after the executive action. Both pipelines have been under heavy scrutiny from environmental organizations and were halted by President Obama administration as a result. However, the 'pro-drill' stance of President Trump has brought the pipelines back from the dead.

The Dakota Access and Keystone XL projects are big news for oil producers, but will Trump have the same positive impact on natural gas? That question is tough to answer because there are many variables that effect the natural gas industry. In regards to natural gas drilling itself, there is not much red tape that needs to be cut. Although the former president was well known for energy reform, President Obama was a strong advocate for natural gas and the fracking industry. His administration viewed the resource as a bridge, moving away from coal generation to more renewable resources. Thus, there are not many natural gas regulations in place for Trump to supersede, and the ones that are in place, should not have much impact on current operations.



Source and Graph: CNN

For example, the Regulation of Hydraulic Fracturing on Federal and Land primary only affects the land in seven western states, where 98% of hydraulic fracturing operations take place on federal lands. The majority of natural gas fracking is taking place in Ohio, Pennsylvania, and Texas and these states would hardly be impacted by the federal land regulation.

Another natural gas regulation that will be reviewed by the Trump administration is the EPA's Methane Rule which monitors gas leaks of **new** wells. The EPA was additionally working on a rule for existing wells, but that was not completed prior to Trump taking office. Both the current (new wells only) and proposed (existing wells) methane rules will likely be eliminated under President Trump's administration; however, Choice is not sure if the new methane rules would have much of impact on producers. Natural gas is methane, and producers are already trying to capture as much methane as possible to ensure the biggest return on their drilling investment, especially in the current low price environment.

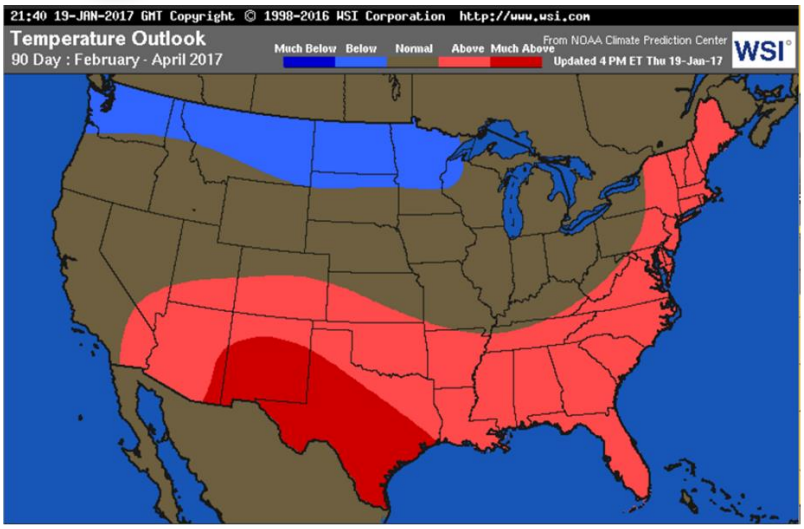
While there are not many regulations directed toward the natural gas industry, changes to other regulations could indirectly affect natural gas. Several of President Obama's regulations against the coal industry could be on the chopping block, which include the Clean Power Plan, Cross-State Air Pollution Rule (CSAPR), and Mercury and Air Toxics Standards (MATS). These regulations have led to numerous coal retirements or retrofits of existing generation facilities. If these regulations are removed it could be delay or even prevent the closure of many coal generation plants that are expected to retire in the coming years. The majority of the coal generators that are earmarked for retirement are expected to be replaced by mainly natural gas generation. Thus, the life of coal generation has a significant impact for natural gas demand in the coming year.

• NEUTRAL •

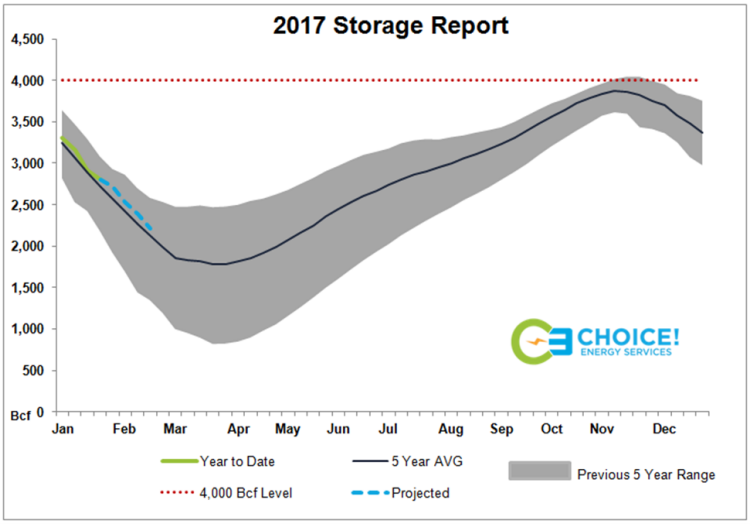
STORAGE/TEMPERATURES

A cold December moved storage levels downward from its record setting highs form the previous month. However, a mild January has kept inventories in close proximately to the five-year average. As of the latest EIA storage report (2016/01/26) natural gas inventories currently rest at 2,798 Bcf, which slightly higher than the Week 4 five-year average of 2,716 Bcf. Although storage levels are not starting the year at the same record setting pace of last year, that is to be expected. Winter 2015-2016 was one of the warmest on record and ensured minimal storage withdrawals during the winter season. However, this week's storage report (2016/02/02) will be benefitted by mild temperatures experienced by most of the country last week. Early indications are for a withdrawal of roughly 90 Bcf. In comparison, last year's and the five year average withdrawal for Week 5 are 152 Bcf and 145 Bcf respectively.

Storage will likely remain near the five-year average levels based on upcoming weather forecasts. Below normal temperatures are expected to linger in the Northeast to start the month of February; however, the remainder of the country should experience normal conditions. Furthermore, the extended outlook indicates normal to above average temperatures for the majority of the country. The extended forecast by NOAA even shows the Mid-Atlantic and New England states with above normal temperatures, which would be bearish news considering the heating load among those states.



Source: National Oceanic and Atmospheric Administration (NOAA)



Source: EIA Weekly Natural Gas Storage Report
Graph: Choice Energy Services

SUMMARY: THE GREAT DIVIDE

The forward NYMEX natural gas curve has flipped from a contango market (higher prices in the outer months) to a backwardation market (lower prices in the outer months). This has been an interesting development as a backwardation market had not been seen in the shale era. Moreover, the point when backwardation starts in the forward curve is interesting in itself. With the February 2017 contract settling at the $3.391/MMBtu (BTW: Choice forecasted correctly in its 2017 NYMEX Outlook) the remainder of the 2017 calendar months are trading in the $3.25 - $3.65/MMBtu range. The premium in the market continues at the beginning of the 2018, with Q1 trading above $3.60/MMBtu, but drops sharply with the April 2018 contract. The April 2018 contact is currently trading at $2.943/MMBtu and starts a streak of sub $3.00 pricing that continues for 17 out of the next 21 months. The March-April spread traditionally shows a large price discrepancy, as March is the last month of winter trading, but the $0.55 differential in the March-April 2018 spread is worth noting.

Is the natural gas supply/demand curve going to change to drastically in April 2018? That is doubtful based on information and data that is currently available. However, it brings up an interesting question regarding the pricing of nature gas. Are 2017 pricing levels correct at $3.25 and above based on the current supply/demand curve? Or, is pricing from April 2018 and forward the correct value with pricing below $3.00/MMBtu? No matter the answer, the extended curve seems at a good buying opportunity. Numerous bullish movers in the market could break the balance of the supply/demand curve, and cause a price spike to occur. That is why one should feel comfortable taking the risk off the board and locking supply below the $3.00/MMBtu mark when the opportunity arises.

OTC GLOBAL HOLDINGS

Date:	1/30/2017
Region: Basis Location: $ MMBTU	NYMEX Settlement NYMEX
Jan-17	3.218
Feb-17	3.391
Mar-17	3.232
Apr-17	3.271
May-17	3.305
Jun-17	3.351
Jul-17	3.392
Aug-17	3.395
Sep-17	3.374
Oct-17	3.387
Nov-17	3.432
Dec-17	3.548
Jan-18	3.628
Feb-18	3.590
Mar-18	3.495
Apr-18	2.943
May-18	2.886
Jun-18	2.901
Jul-18	2.919
Aug-18	2.916
Sep-18	2.894
Oct-18	2.908
Nov-18	2.951
Dec-18	3.085
Jan-19	3.190
Feb-19	3.163
Mar-19	3.111
Apr-19	2.728
May-19	2.691
Jun-19	2.715
Jul-19	2.742
Aug-19	2.752
Sep-19	2.747
Oct-19	2.772
Nov-19	2.840
Dec-19	2.980

Source and Chart: EOX Live