



GELBER & ASSOCIATES

Natural Gas Price Forecast & Industry Review

2019 Hedge Season

April 18, 2019



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INTRODUCTION & DISCLAIMER

Gelber & Associates (G&A) is pleased to provide its Natural Gas Price Forecast for the 2019 Hedge Season. This Forecast predicts the NYMEX front month natural gas contract for delivery at Henry Hub through March 2020, and provides guidance for hedging the 2019-20 and 2020-21 winter seasons. This Forecast is reserved for subscribers, clients, and as a courtesy to prospective clients.

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EXECUTIVE SUMMARY



Prior Forecast Review

Major Drivers of the Prior Forecast (June 2018)

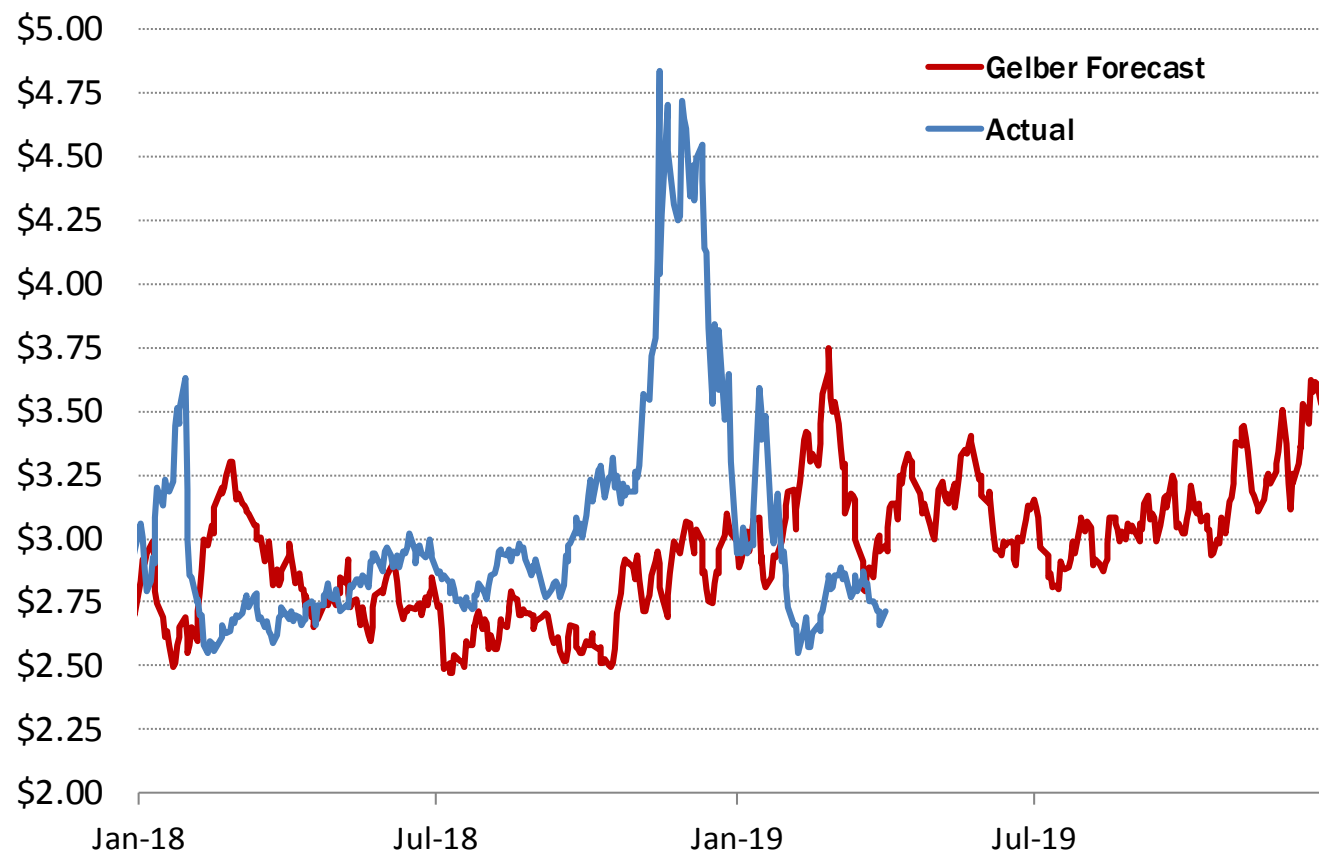
- I. **BELOW-AVERAGE STORAGE:** Storage inventories below the five-year average continued through the 2018 injection season and 2019-20 winter.
- II. **RECORD PRODUCTION:** Production growth saw an even more impressive-than-expected boost in late-2018, just as in 2017.
- III. **STRUCTURAL DEMAND GROWTH:** As expected, LNG, Mexican exports, and industrial demand continued to grow and absorbed record supply before it could reach storage. Permanent shifts in the fuel mix and record power generation further bolster demand growth.
- IV. **FUEL SWITCHING:** Fuel switching helped provide support for prices on the low end as they approached \$2.50.



Looking Back: June 2018 Price Forecast

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Gelber Natural Gas Price Forecast- Summer 2018 Edition



PRIOR FORECAST PERFORMANCE

Gelber's forecast fared well for much of 2018 as the price-floor we identified held strong and the front month kept a relatively weak range below \$3/MMBtu up until September. However, lingering heat into September and early October was followed by a quick turnaround to chilly weather limited injections and kept storage from reaching a comfortable levels prior to the heating season. The subsequent fear-driven rally to almost \$5/MMBtu surpassed forecasts, although it did confirm our prediction of rising prices and renewed volatility in the 2018-19 winter. This past winter's rally dissipated when milder winter arrived in January to pacify low storage fears. Prices have crashed back to a similar low as in 2018 and suggest more price weakness in 2019 than anticipated in our last forecast.



Keys to Outlook for 2019-2020

- Production Growth: Increases from Appalachia will be more gradual in 2019 as producers focus on spending within their means. However, substantial growth from the Permian Basin is expected with coming pipeline completions.
- Demand Growth: L.I.M.P. (LNG, Industrial, Mexico, Power) will all see meaningful growth in 2019 and will soak up much of the additional production.
- Storage: Well below-average start for the 2019 Injection Season will put supply to the test this summer. A significant reduction in the storage deficit would put prices at ease going into next winter.
- Fuel switching: Still a factor. A price decline to \$2.50 and lower will bring increased demand while a price gain to \$3.25 will suppress demand.
- A potential wild card is LNG export rejections this summer if the international markets get flooded.



AMPLE SUPPLY

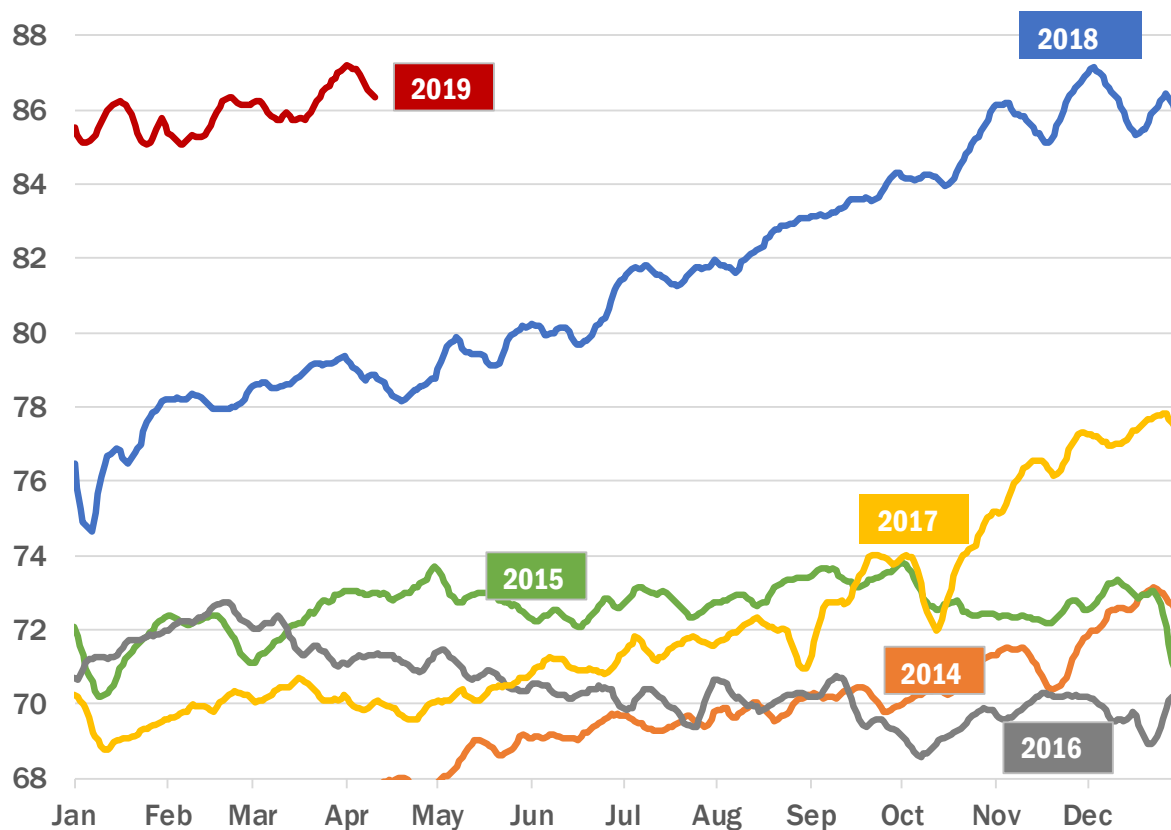
Production growth continues in the coming years,
but at a slower pace



RECORD PRODUCTION

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US Dry Gas Production - Bcf/D



PRODUCTION FLAT EARLY IN 2019

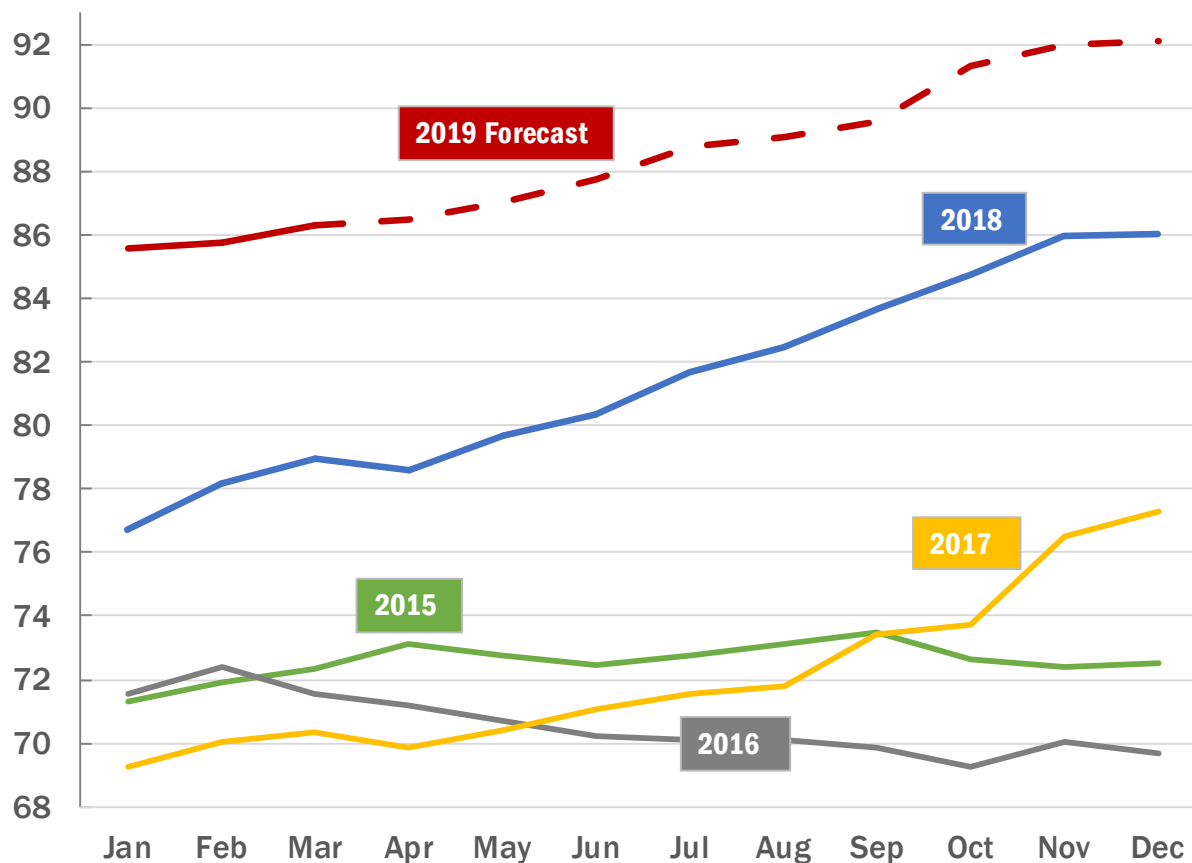
Dry gas production has not grown appreciably since November but is still running 8 Bcf/D higher year-over-year. Although production growth is off to a slow start in early-2019, gradual increases can be expected as the year goes on, with more substantial growth expected late in the year (see 2019 production forecast later in this section).



2019 PRODUCTION FORECAST

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Dry Gas Production Monthly Average (Bcf/D)



PRODUCTION GROWS LATE IN 2019, AND AT A SLOWER PACE IN 2020

Production is expected to pick up again late spring and late summer. Completion of the Gulf Coast Express Pipeline in the Permian in October (see on later page) will bring a slug of new supply to the market. Producer forward guidance suggests that total dry gas production will grow between about 5-7 Bcf/D in 2019. Most of the growth will come from Marcellus, Utica and the Permian Basin. The Haynesville, Eagleford, and Anadarko region are also expecting incremental growth. In total Gelber estimates that production will average slightly over 88 Bcf/D in 2019 with totals reaching as high as 92 Bcf/D by late in the year.

EXCEEDING THE HYPE - LEBRON AND THE MARCELLUS SHALE



EXCEEDING EXPECTATIONS

Perhaps the greatest compliment you can give to LeBron James, who was anointed "King James" early in his career, is that he somehow managed to live up to the huge expectations given to him.

The same can be said of the Marcellus Shale. The advent of horizontal drilling combined with hydraulic fracturing had the potential to unlock this huge resource. In a 2008, some folks claimed that it "eventually might overshadow the Barnett in productivity". As of today, if the Marcellus were its own country, it would rank third place behind the US and Russia for natural gas production.

The Marcellus Shale is not alone in living up to the hype. The Permian Basin is so far exceeding expectations for its prolific oil and gas production.

EPIC FAILURES

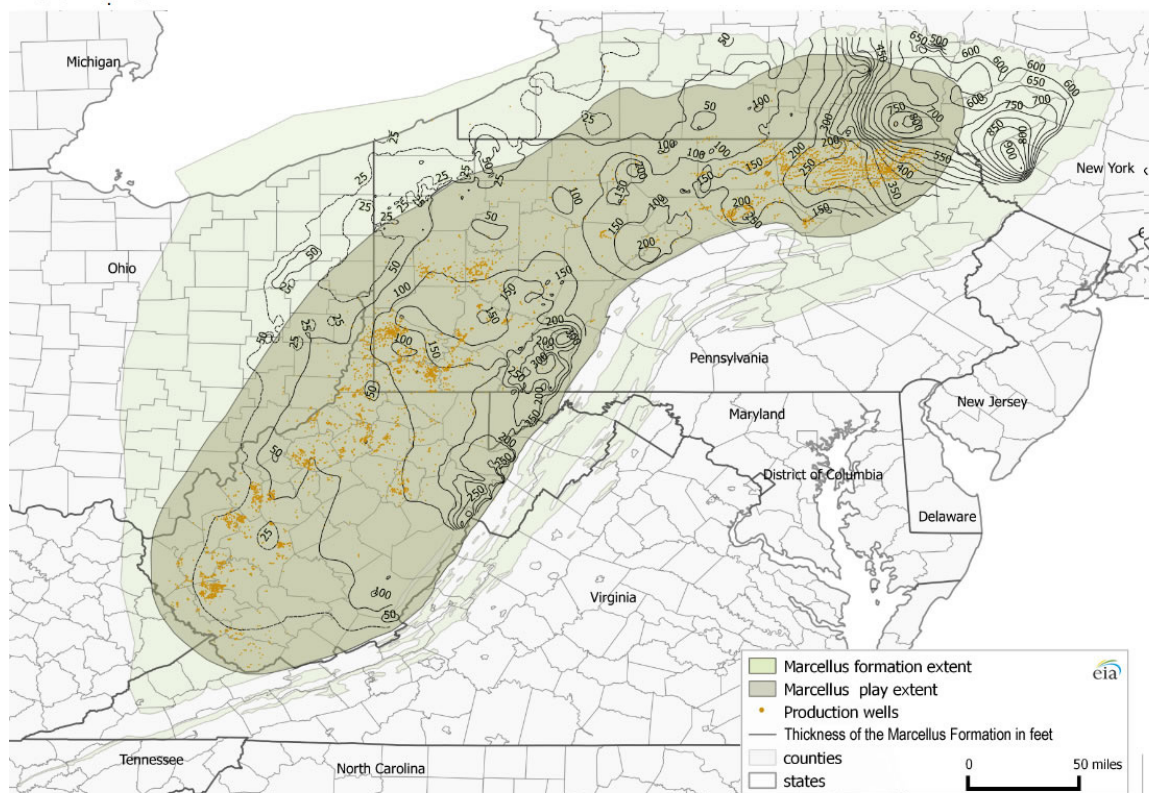
On the other side of the equation are the well-publicized and over-hyped phenoms that can never quite match their supposed potential. In the sports world, Ryan Leaf (quarterback), JaMarcus Russell (quarterback), Freddy Adu (soccer player) are a few that come to mind. Mentioned below are failures in the natural gas world.

US LNG imports - this was supposed to supply the US with 25% of its gas needs. Today less than 2% is imported and billions of dollars of import capacity remains unused. Other failures include gas hydrates and coal bed methane (not economic at current prices). My personal favorite is the Alaskan Gas Pipeline which has been talked about, studied, and proposed for that past 15 years. In 2007, the Alaskan legislator even passed a law promoting an open season and joint proposals. Now there is a proposal to build a pipeline to supply a new natural gas liquefaction plant to send LNG to China.

MARCELLUS GROWTH SLOWS

Thickness of the Marcellus Shale

Values are thicknesses of Marcellus Shale formation in feet.
Map by the Energy Information Administration



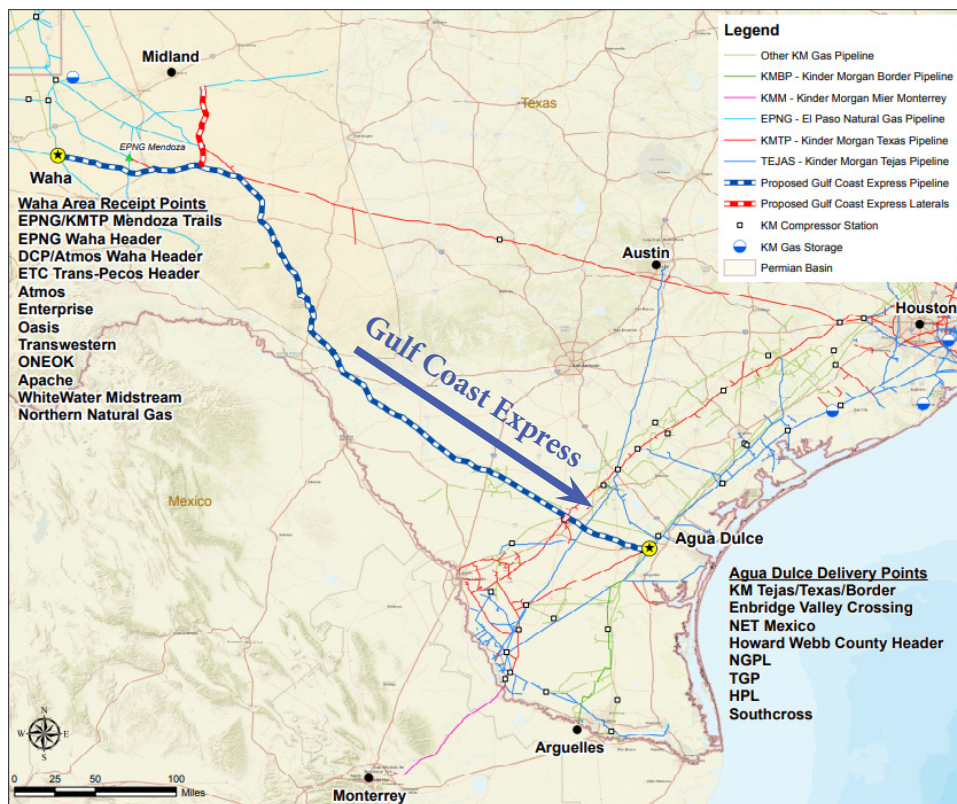
EMPHASIS ON LOWER SPENDING, STEADY GROWTH IN 2019

Last year was the year of the Marcellus, as production companies exceeded ambitious targets and filled new pipeline additions to the brim as they became available. In the coming year, some of the biggest Marcellus producers like EQT and Antero have signaled that they will be scaling back growth plans in the coming year and focusing on generating free cash flows. These companies will still maintain their base production and continue growing through lower costs and improved efficiencies, but overall these plans suggest a shift in this prolific basin.



PERMIAN MIDSTREAM BUILDOUT

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GULF COAST EXPRESS RELEASES PERMIAN SUPPLY

Over the past two years, significant Northeast midstream projects like Rover Pipeline, Atlantic Sunrise, and NEXUS Gas Transmission have freed up massive production growth in the Marcellus and Utica shales. In 2019, the focus is now on unlocking vast associated gas production that is currently trapped in the Permian Basin. The most anticipated project this year is Kinder Morgan's 2 Bcf/D Gulf Coast Express Pipeline which will carry gas from Waha hub in West Texas to Agua Dulce hub along the Texas Gulf Coast. This 430-mile project is expected to reach completion in October of 2019 and is already fully-subscribed under long-term transportation agreements. Incremental expansions will improve Permian connectivity and processing capability in the meantime, but the Gulf Coast Express is key to de-bottlenecking this price-independent supply. A second large, long-haul pipeline, Permian Highway, is already scheduled for completion in late 2020 and, along with several other proposed pipelines, would further contribute to the effort to deliver Permian gas to demand markets on the US Gulf Coast.



L.I.M.P. DRIVES DEMAND

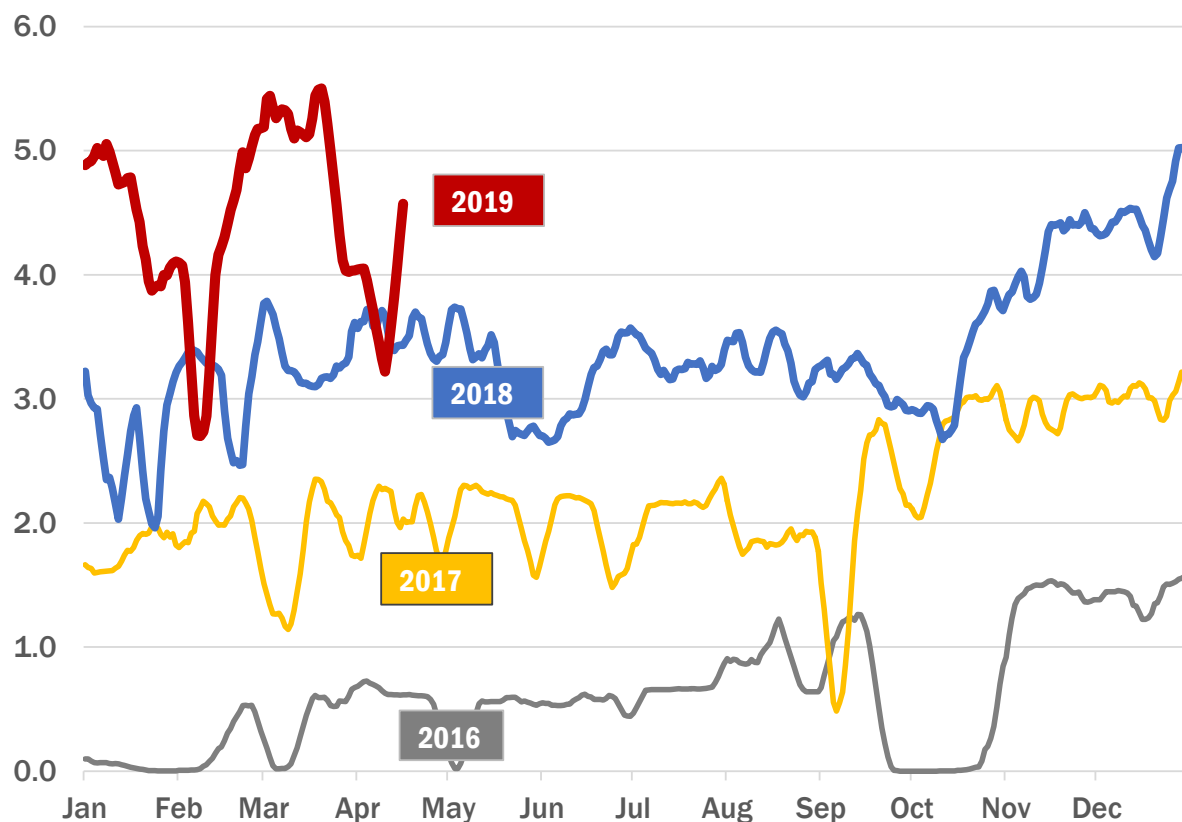
LNG, Industrial, Mexican Exports, and
Power demand growth



LNG EXPORT DEMAND

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Gas Demand for LNG Exports - Bcf/D



ADDITIONAL LNG TERMINALS COMING ONLINE

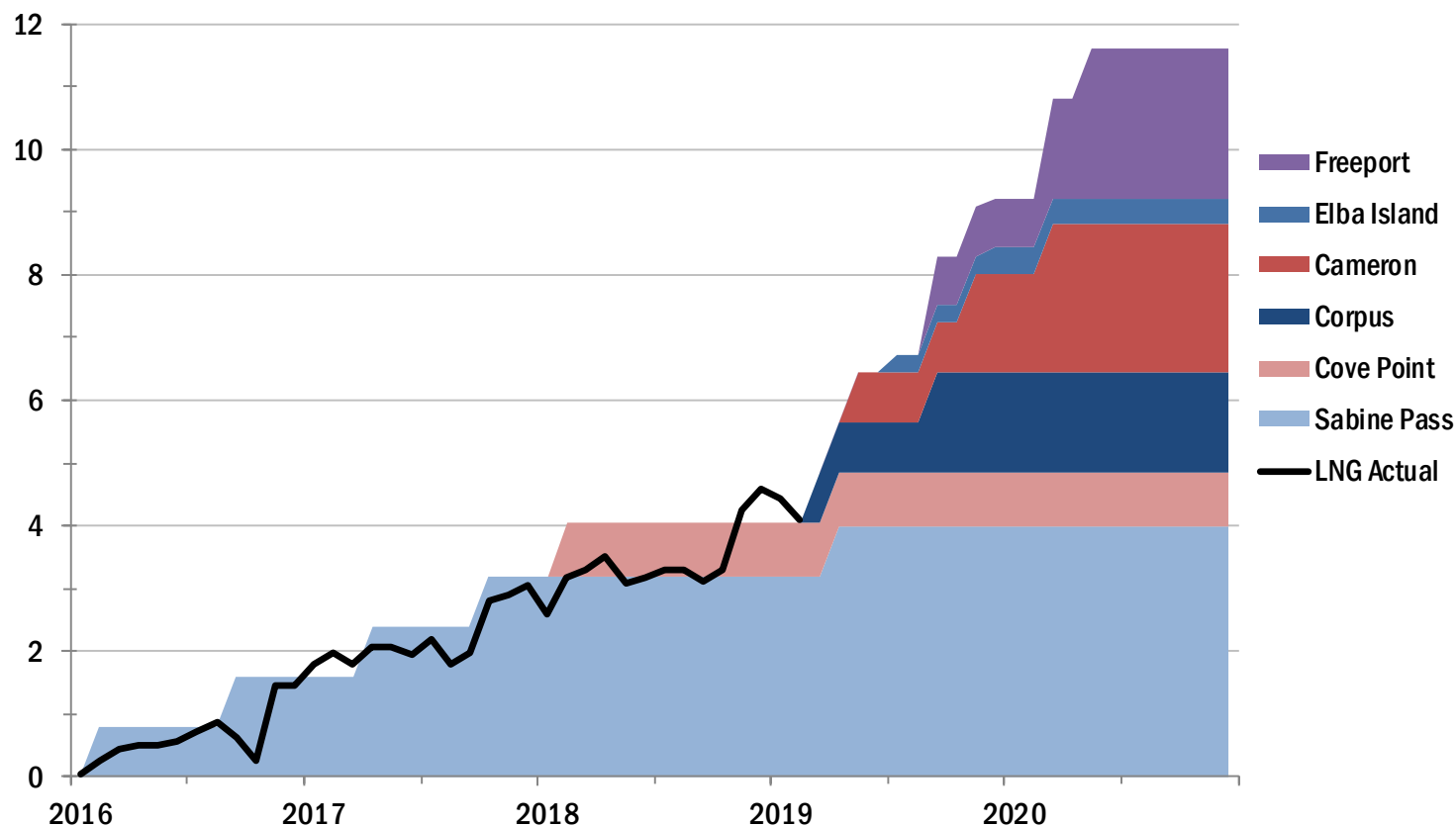
LNG feedgas demand early this year reached record highs near 5.5 Bcf/D as Cheniere added a new train at its Sabine Pass terminal and brought online its first train and its new facility in Corpus Christi, TX. Shoulder season maintenance temporarily reduced LNG demand in late March/early April, but expect new record highs and impressive growth throughout 2019 and 2020. The next page shows the culmination of LNG projects that will soon be on line.



LNG TERMINALS UNDER CONSTRUCTION

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LNG Feedgas Capacity (Bcf/D)



PROJECTS FACED WITH DELAYS

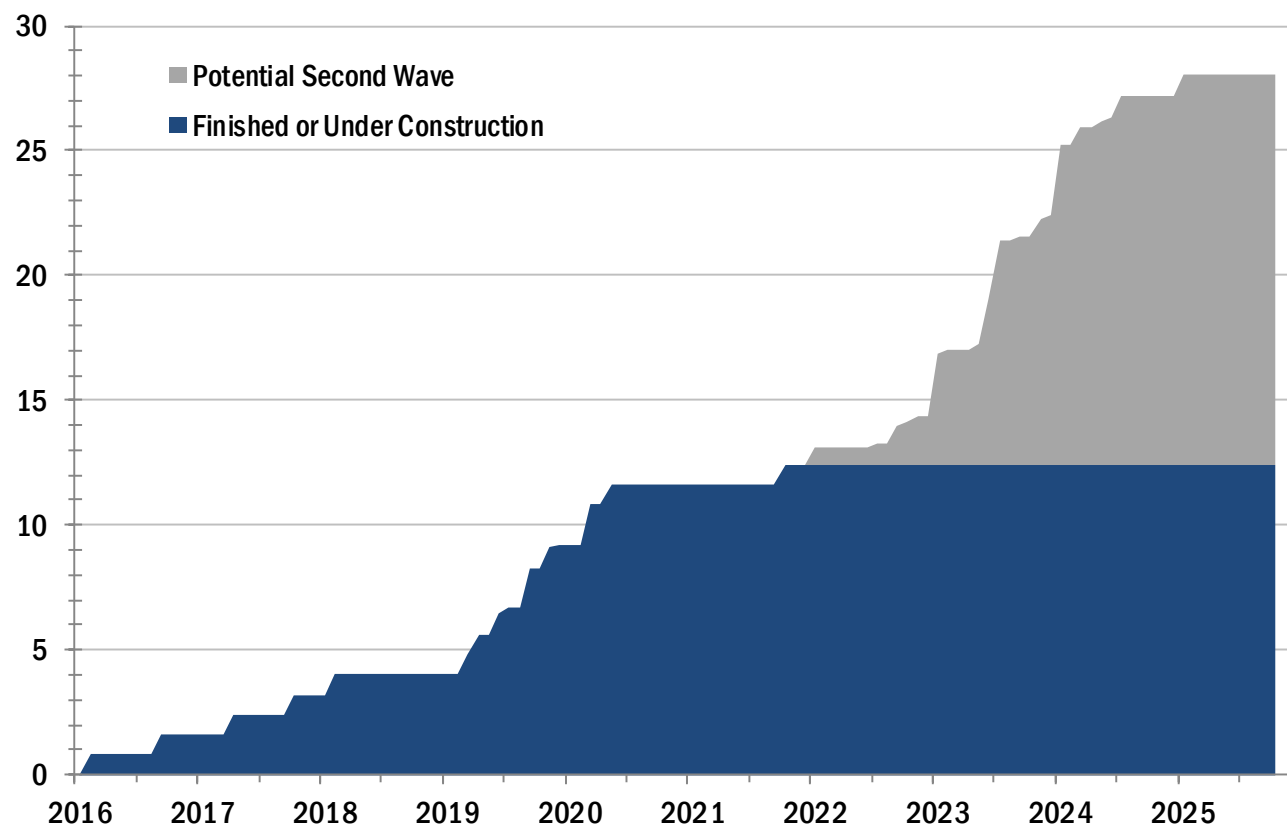
Construction of the first wave of US LNG export projects is on its final stretch and actual LNG demand has run very near the capacity of completed LNG terminals. However, several of these projects, including Elba Island, Cameron, and Freeport LNG have been hounded by delays that have now pushed the start-up dates of their final trains under construction into early 2020. One LNG developer who has dodged these difficulties is the original US LNG exporter, Cheniere, whose new trains at Sabine Pass and Corpus Christi have come in ahead of schedule and under budget. Regardless, by the end of 2019 LNG capacity (and with it demand) will nearly double year-over-year to 9 Bcf/d, and will reach upwards of 11 Bcf/D with Freeport's and Cameron's final trains in 2020.



SECOND-WAVE INVESTMENTS IN 2019

17

LNG Feedgas Capacity (Bcf/D)



PROPOSED PROJECTS COMPETE TO REACH FID

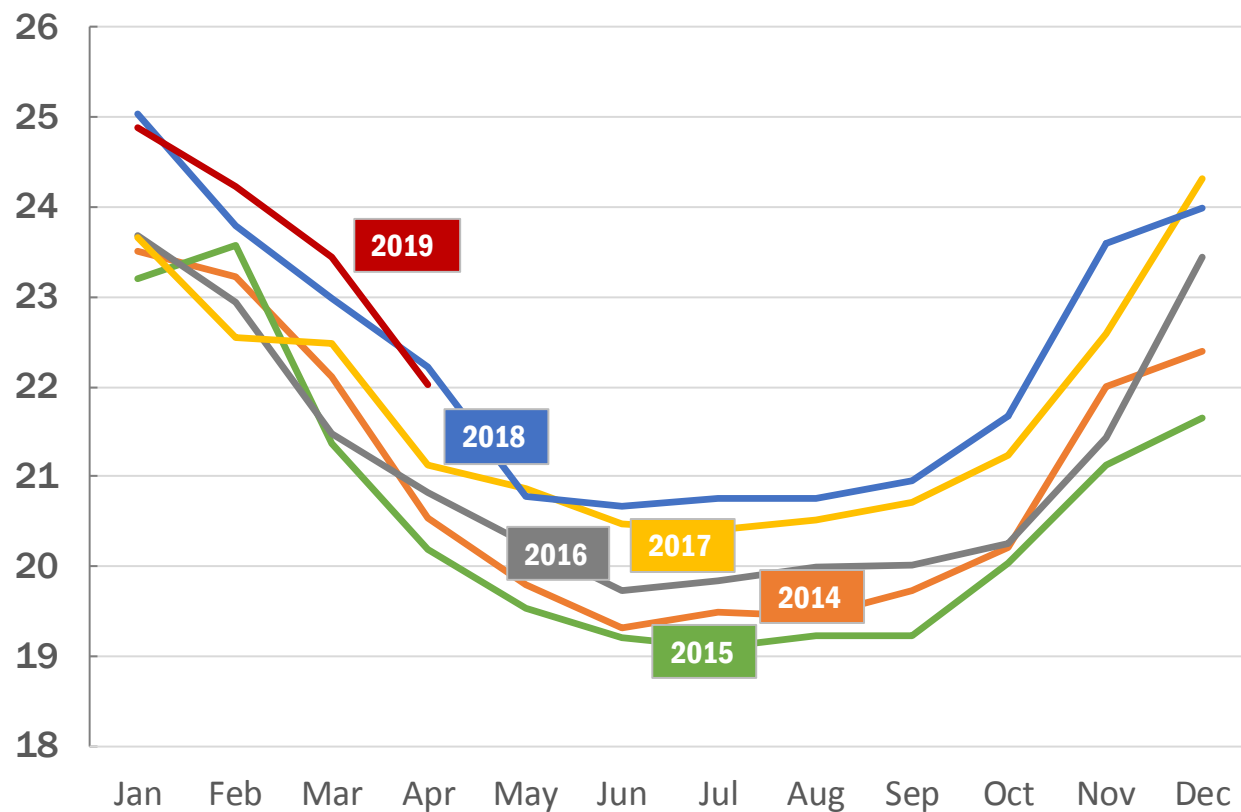
2019 is expected to be a banner year for proposed LNG projects vying to reach a final investment decision (FID) and join the “second-wave” of LNG plants in the mid-2020’s. So far this year, ExxonMobil and Qatar Petroleum’s joint Golden Pass LNG venture has reached FID, while Venture Global has received necessary permits and announced its plans to move forward on its Calcasieu Pass export project. Other projects are on the short-list to begin construction this year, but have had difficulty finding buyers to sign long-term offtake agreements due to global economic uncertainty and trade issues with the largest LNG growth market, China. Nonetheless, some of these projects will move forward, and the best bet is on proven players like Cheniere to finalize expansion plans. Other projects that are taking positive steps include Driftwood LNG, Rio Grande LNG, Lake Charles LNG, and others. Overall, these projects have the potential to more than double the first wave of US export capacity by 2025.



INDUSTRIAL DEMAND

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Industrial Demand (Bcf/D)



THE SEASONAL NATURE OF INDUSTRIAL DEMAND

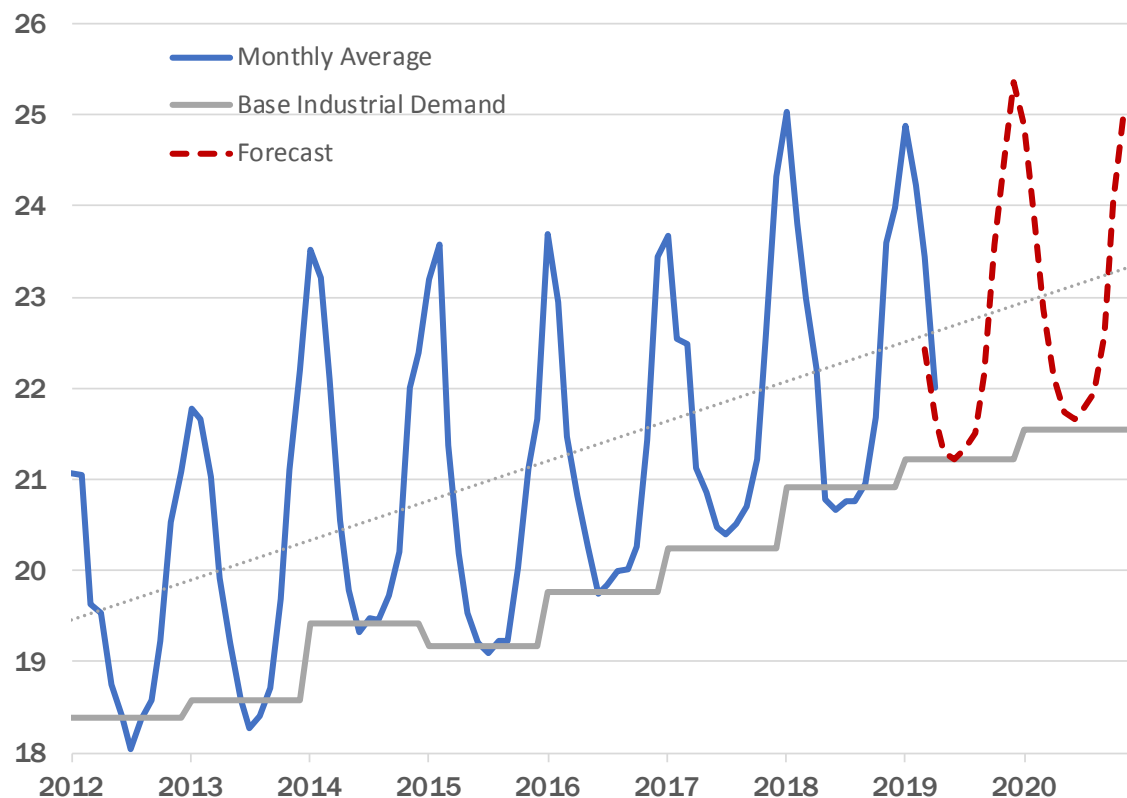
Low, stable gas prices brought about by the shale revolution have sparked a renaissance in US industrial investment in the Midwest and Gulf Coast regions. The above shows the seasonality of industrial demand as the highest demand months are during the coldest months of the year. Nonetheless, the renaissance of industrial gas consumption has increased demand during winter highs and summer lows.



INDUSTRIAL CONTINUES HIGHER

19

Industrial Demand - Bcf/D



INDUSTRIAL FORECAST

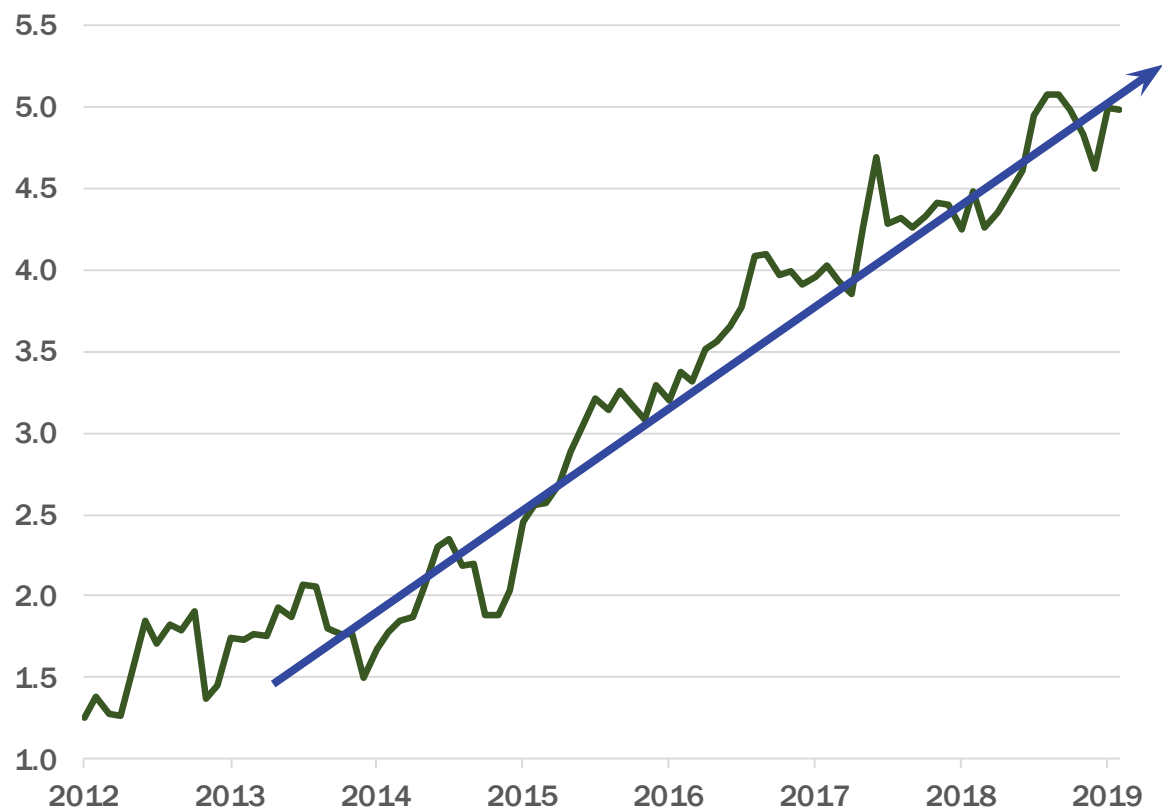
Industrial demand shows a steady seasonal, upward trend with peaks during the winter and troughs during the summer. When industrial demands is at its weakest, it allows us to estimate the non-weather driven or “base” demand. Base industrial demand has been growing steadily since 2012 and is expected to continue this trend as additional plants come online in 2019 and 2020. The harder to measure part of industrial demand is its weather driven component. Gelber’s analysis suggests that this weather driven component is growing than the base load. This increases further increases the competition for natural gas with utilities and power generators during cold winter days.



SHIFTING EXPORTS TO MEXICO

20

Mexican Export Demand - Bcf/D



EXPORT GROWTH CONTINUES AT A MEASURED PACE

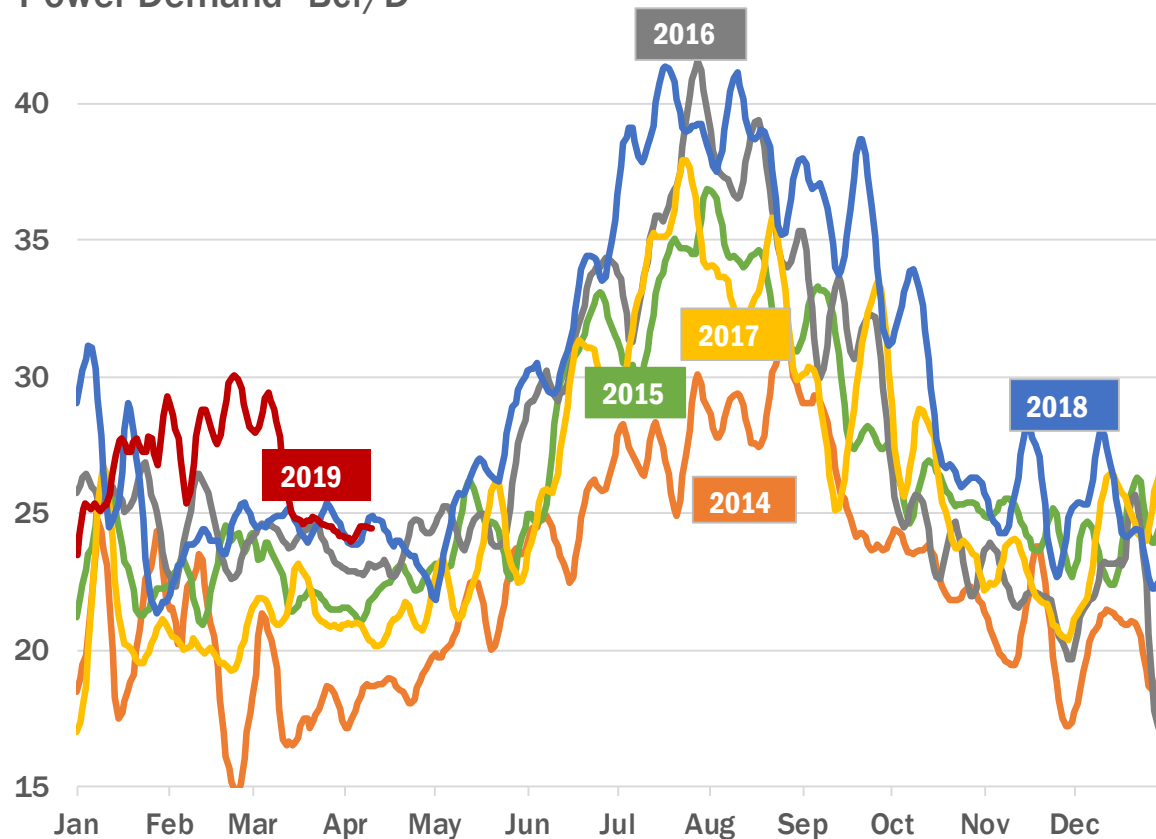
Natural gas exports to Mexico saw solid growth last year and are expected to grow further in late 2019 and 2020. Infrastructure constraints within Mexico are the limiting factor for this demand source. The Sur de Texas-Tuxpan marine pipeline will add an additional 2.6 Bcf/D of cross-border capacity in the coming months when it connects to the Valley Crossing pipeline in Texas. The size of this project has the potential to increase exports to Mexico and replace imported LNG. Additional pipeline connections within Mexico will also allow it to import additional gas from the Permian basin that will help ease some constraints in that supply region. Despite the tendency for infrastructure projects within Mexico have delays, expect growing demand of US gas for years to come.



POWER DEMAND

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Power Demand- Bcf/D



PERMANENT COAL DISPLACEMENT AND TEMPORARY FUEL SWITCHING

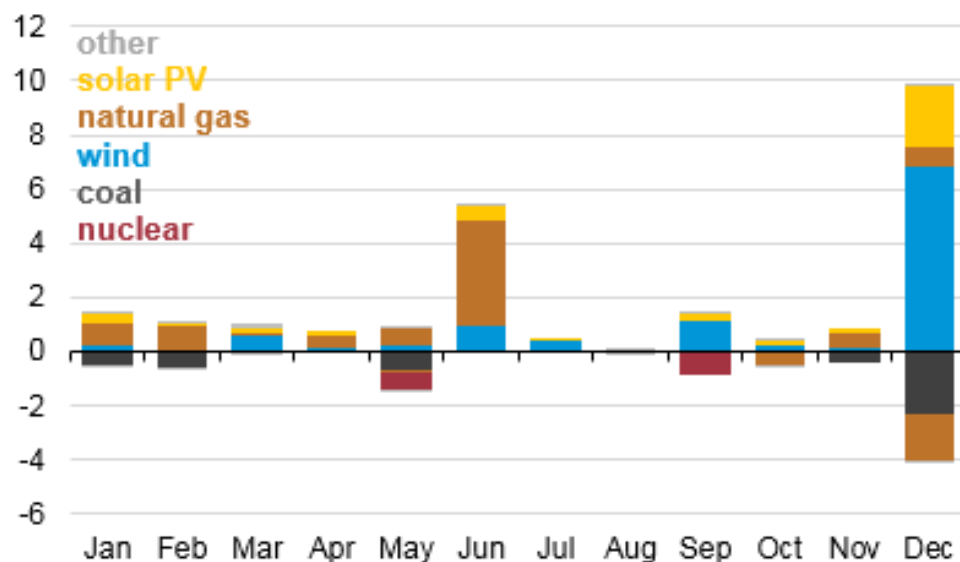
Natural gas power generation had a record year in 2018 and is expected to take an even bigger share of the power generation mix in 2019. Natural gas is permanently displacing coal and nuclear capacity as those fuel sources undergo retirements. Nonetheless, the price-dependent component of power demand (fuel switching) still remains a factor.



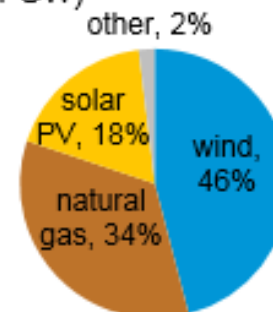
MUCH LESS COAL RETIREMENTS IN 2019

22

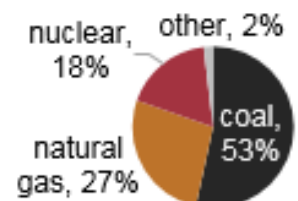
U.S. electric capacity additions and retirements, 2019
gigawatts (GW)



planned additions
(24 GW)



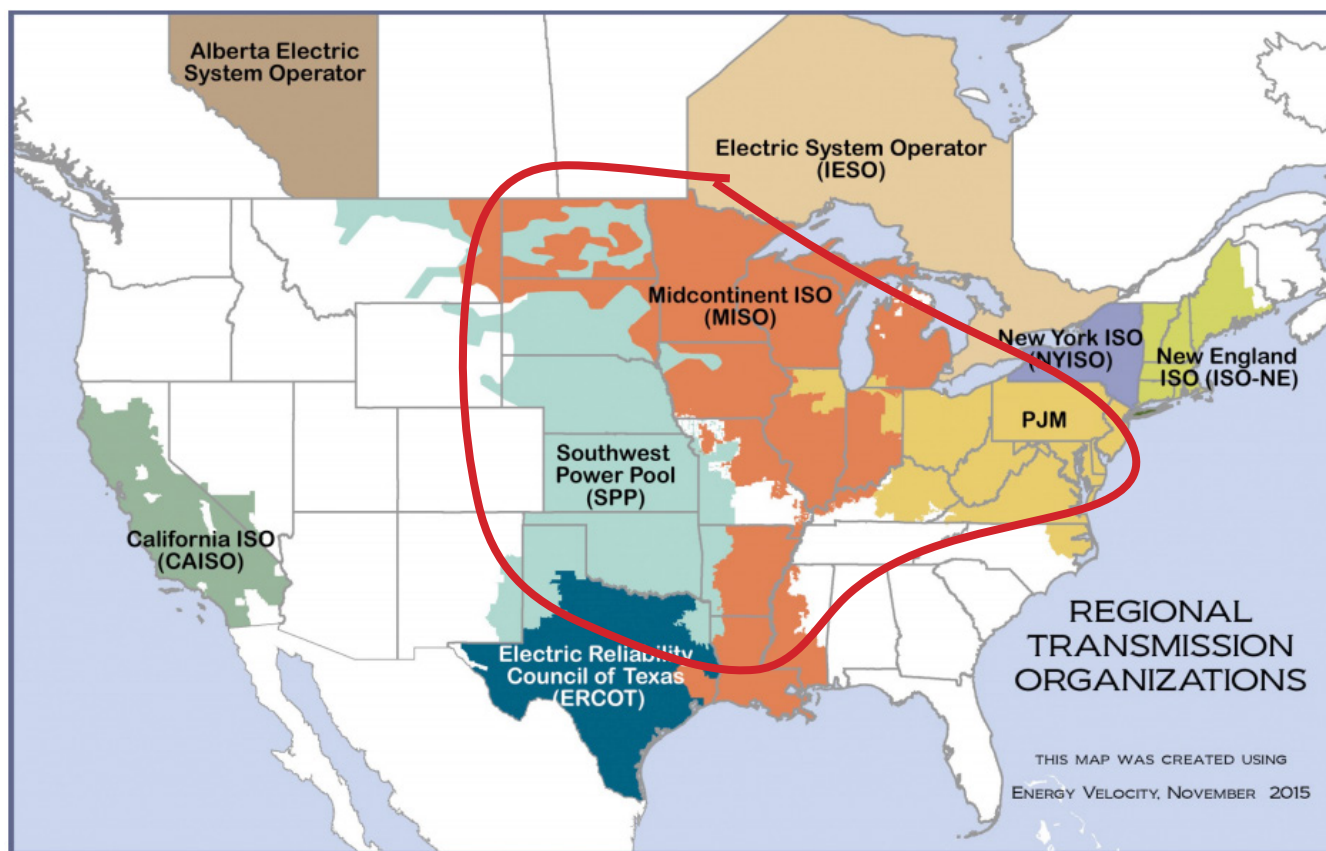
planned retirements
(8 GW)



GAS GENERATION AND RENEWABLES CONTINUE TO TAKE OUT COAL

The story for the last five years remains the same. Coal continues to lose market share battle to renewables and its primary nemesis - natural gas. After a big year for coal retirements, about the 4 GW of coal capacity will be retired in 2019. This is far less than 14 GW of capacity that retired in 2018. Meanwhile another 2.8 GW of natural gas capacity is to be added. With natural gas prices being so cheap, expect most of this capacity to be utilized at the expense of coal.

BREAKING DOWN THE ISO



ISO

Shown below is James Harden of the Houston Rockets, a basketball player known for his “iso” or isolation. In this instance, we are analyzing ISO’s or Independent Service Operators. The ISO’s selected include PJM, Midcontinent (MISO), and Southwest Power Pool SPP. These ISO’s have good data available and represent a large swath of the US with natural gas and coal generators who have the ability to switch between the two fuels. The selected ISO’s will be discussed on the coming pages.

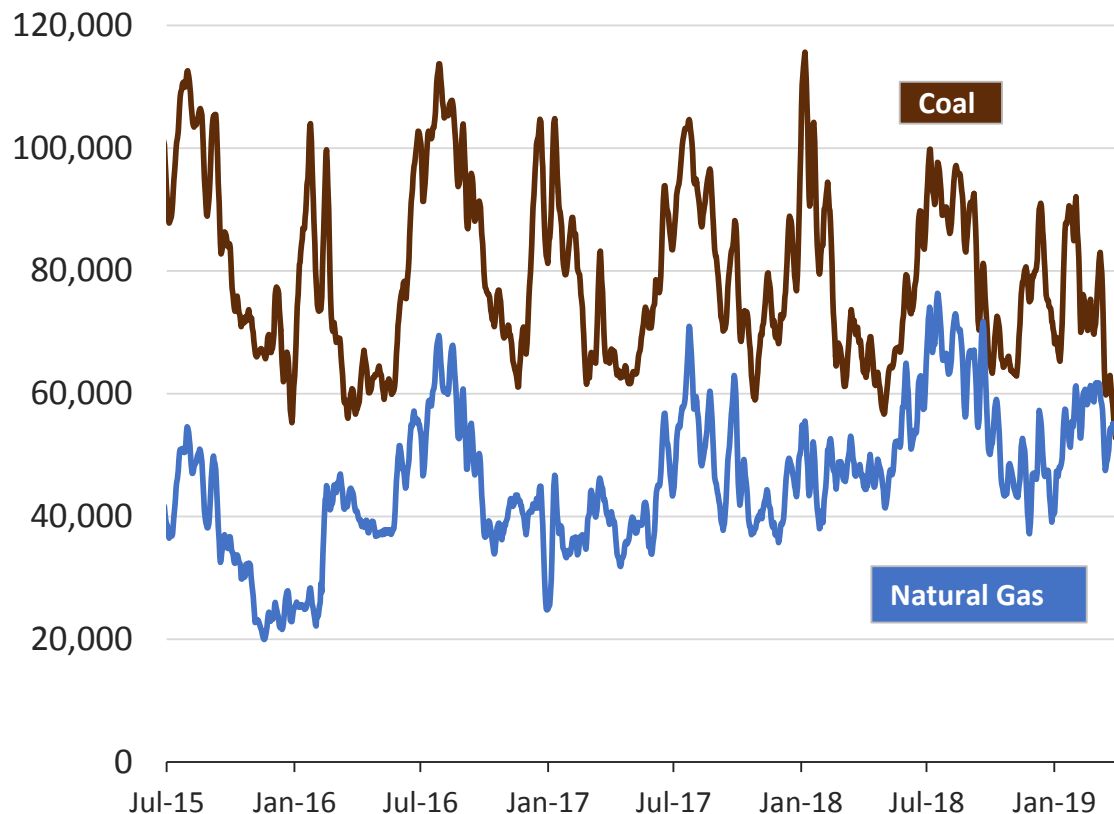




NATURAL GAS SURPASSES COAL

24

PJM, MISO, SPP - MW (Daily Average)



GAS GENERATION TAKES OUT COAL

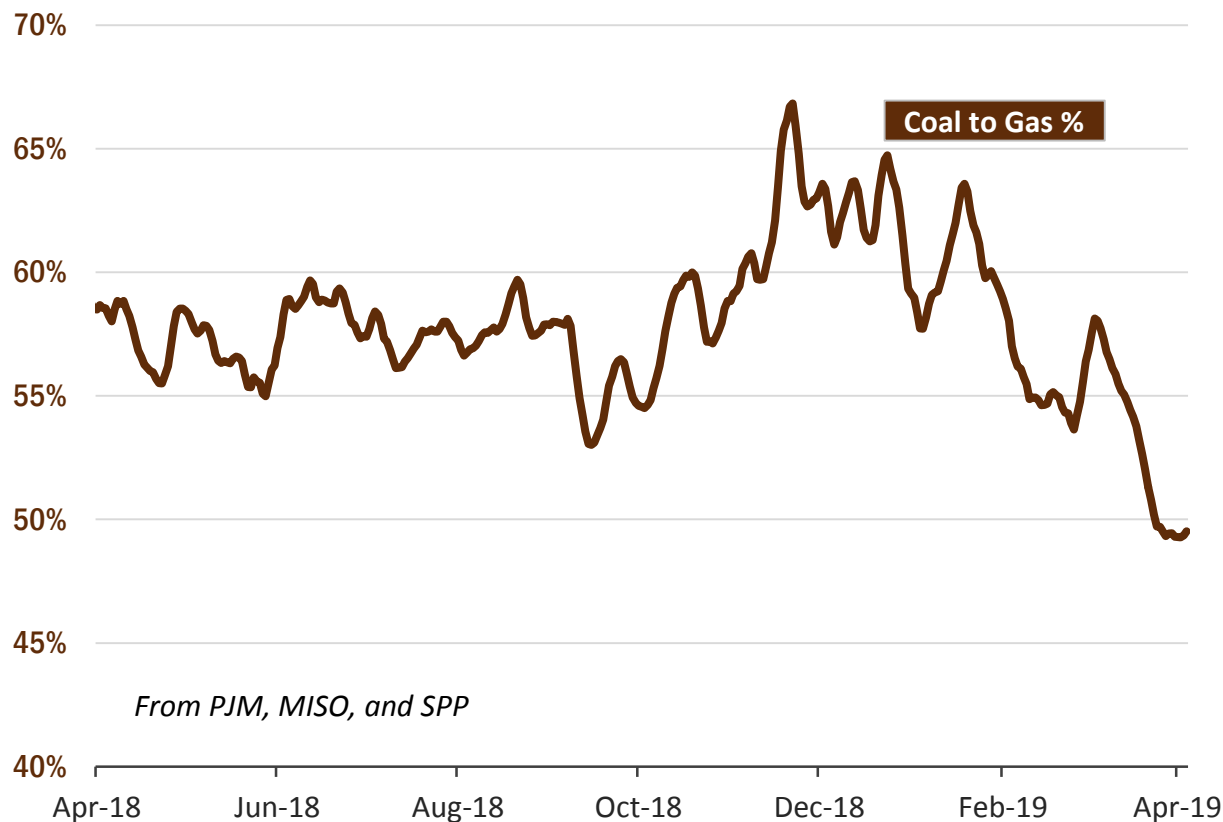
The above compares the daily average of generation from coal and natural gas from the combined PJM, MISO, and SPP power ISO's. The retirement of coal plants and competition from cheap natural gas is decreasing coal's dominance. Much of the decreased coal generation is from retirements and will never return. This past month power generation from gas for this combined region surpassed generation from coal for the first time. A key question is how much is economic and can return if the price is right?



COAL LOSING TO NATURAL GAS

25

% Coal/(Coal +Gas) Usage



COAL PERCENTAGE COMPARED WITH GAS

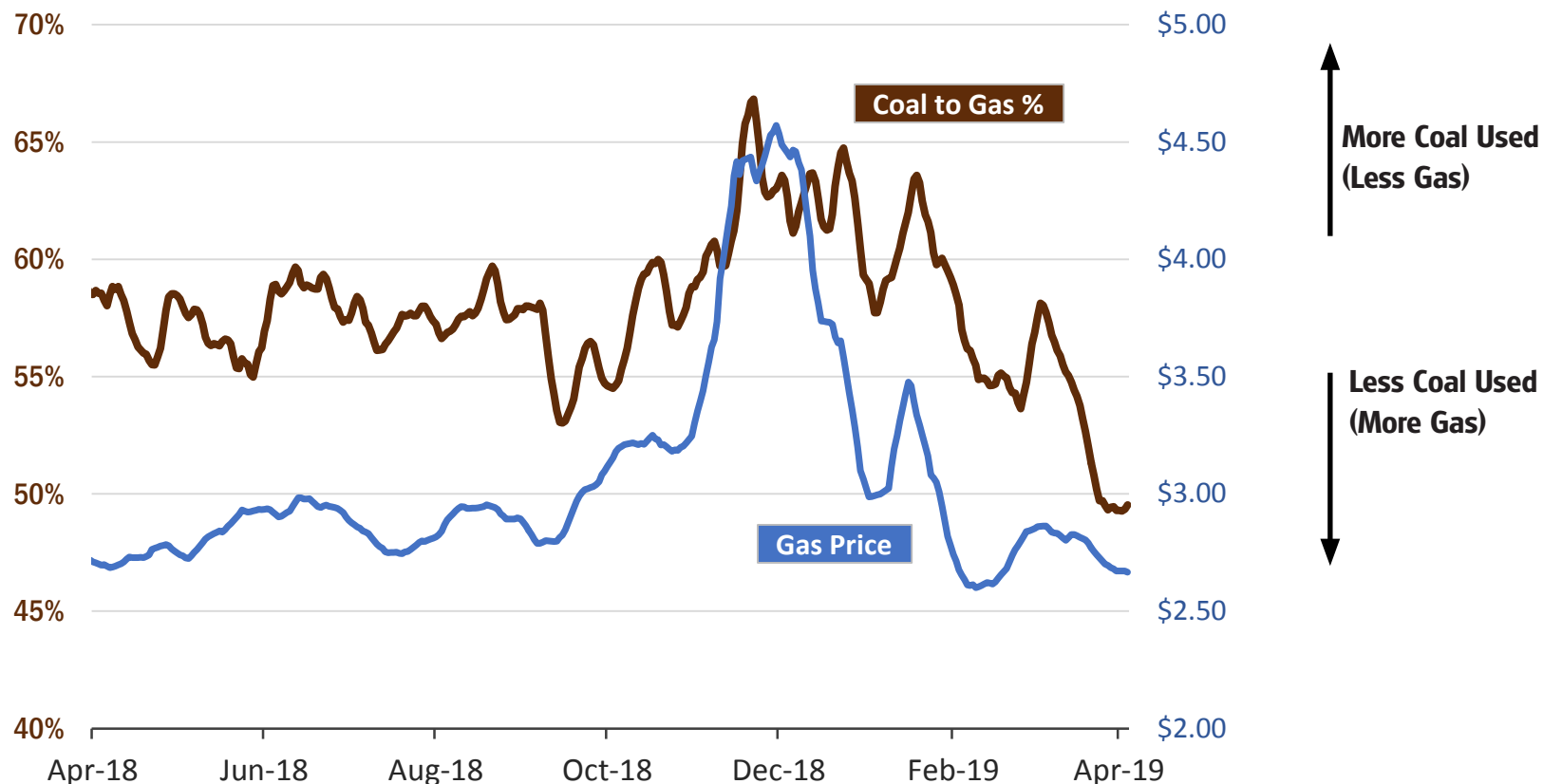
In order to highlight the competition between natural gas and coal as a fuel for power generation, the above displays the percent of coal over coal and gas combined. A higher percentage means that more coal is used and a lower percentage means that more natural gas is used. This technique helps reduce the noise coming from wind and solar which volatile and entirely weather driven.



PRICE STILL IMPACTING GAS POWER

26

% Coal/(Coal + Gas) Usage versus Gas Price



COAL PERCENTAGE COMPARED WITH GAS

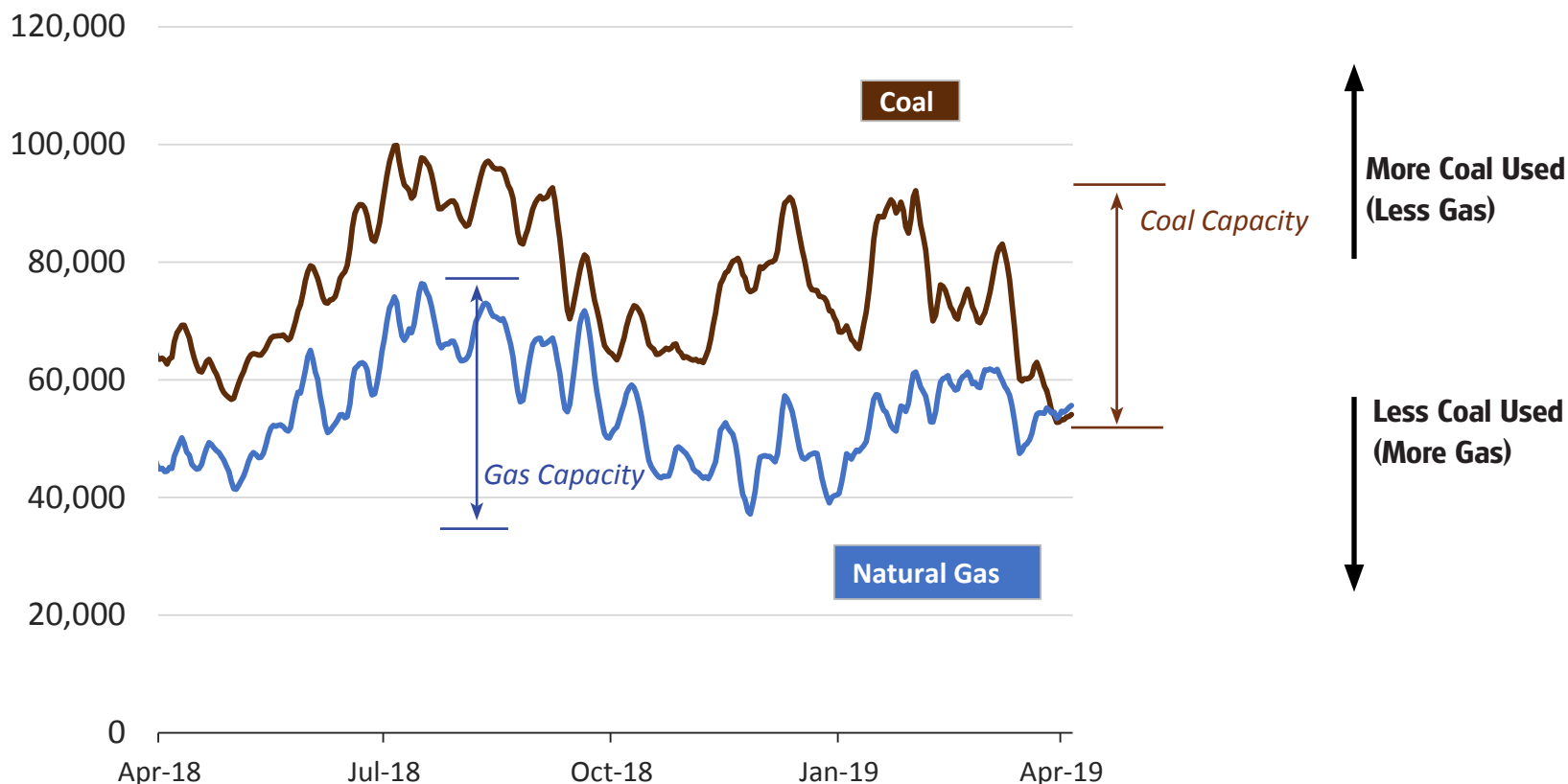
Despite all of the coal plant closures, economically driven fuel switching is still exists. The above clearly shows how generation from coal (brown line) is driven by price of natural gas (blue line). When gas prices rose in November of last year, coal generation rose. Conversely when gas prices fell, coal generation fell. Currently coal



HOW MUCH FUEL SWITCHING CAPACITY IS LEFT?

27

PJM, MISO, SPP - MW (Daily Average)



AS COAL PLANTS RETIRE, HOW MUCH CAPACITY IS LEFT OVER FOR SWITCHING

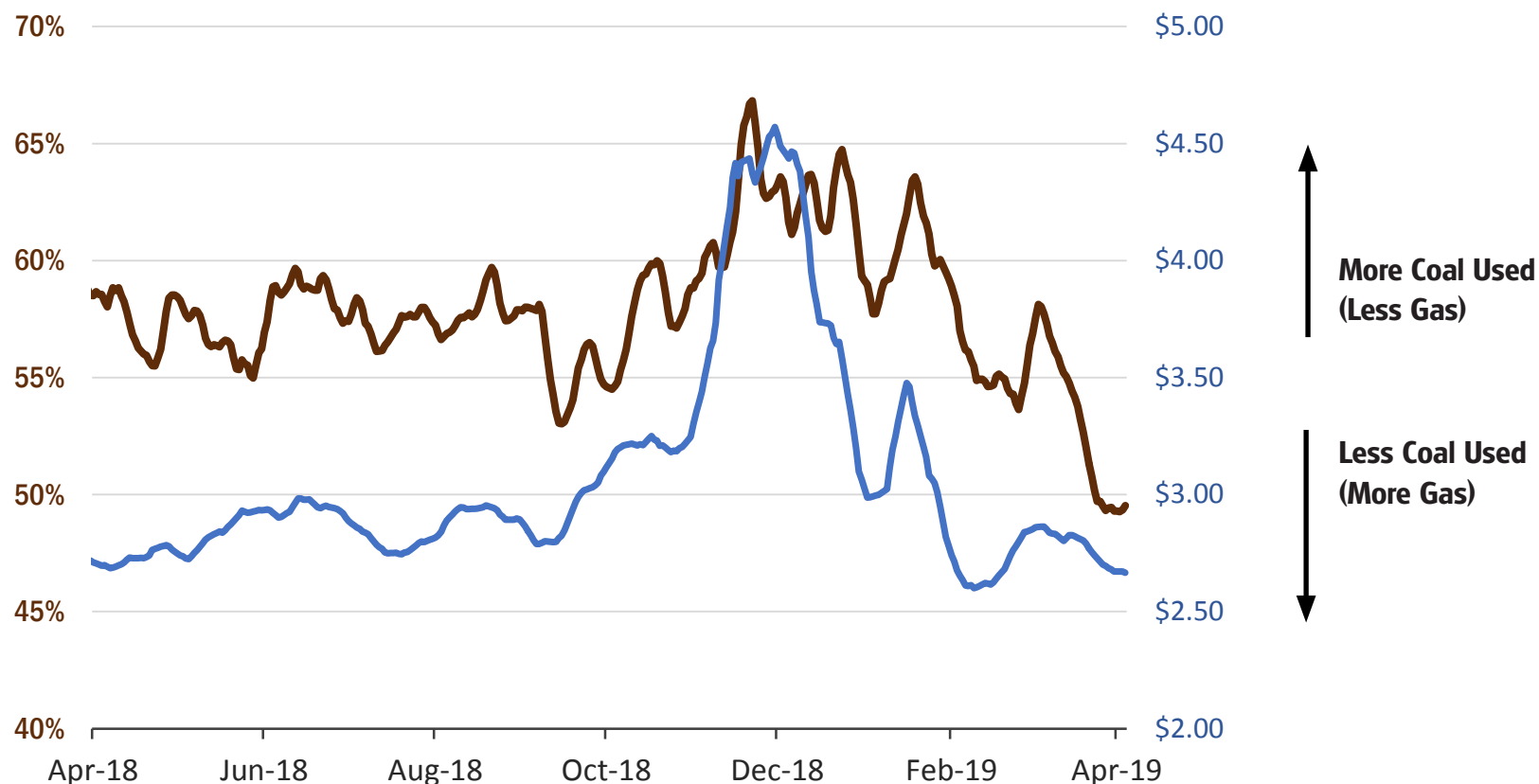
The prior slide demonstrates that natural prices still influences gas fired power generation. But as the coal plants retire, how much coal capacity is left over for power generators be able to switch? The above suggests that coal could rise above 90,000 MW as it did multiple times this past winter. This would reduce gas powered generation by 35,000 MW and consequently gas demand by 6.9 Bcf/D. If gas prices keep falling another 20,000 MW of gas demand could be added. This would increase gas demand by 3.9 Bcf/D. Given the large geographical differences covered, the logistical issues would reduce the ability to fuel switch.



COAL USAGE VERSUS PRICE

28

% Coal/Gas Usage versus Gas Price



GAS GENERATION TAKES LARGER SHARE OF FUEL MIX

Fuel switching continues to be highly reactive to prices. December's price decline had gas-fired generation ramping higher into early January. Gas fired generation, on a weather adjusted basis ended 2018 strong and provided a balance to record production. Fuel switching has come down slightly since early 2019 despite relatively cheap prices, but it remains in line with previous years. Fuel switching will continue to be a critical balancing factor this summer by offsetting production growth with strong power demand.



BALANCING THE MARKET

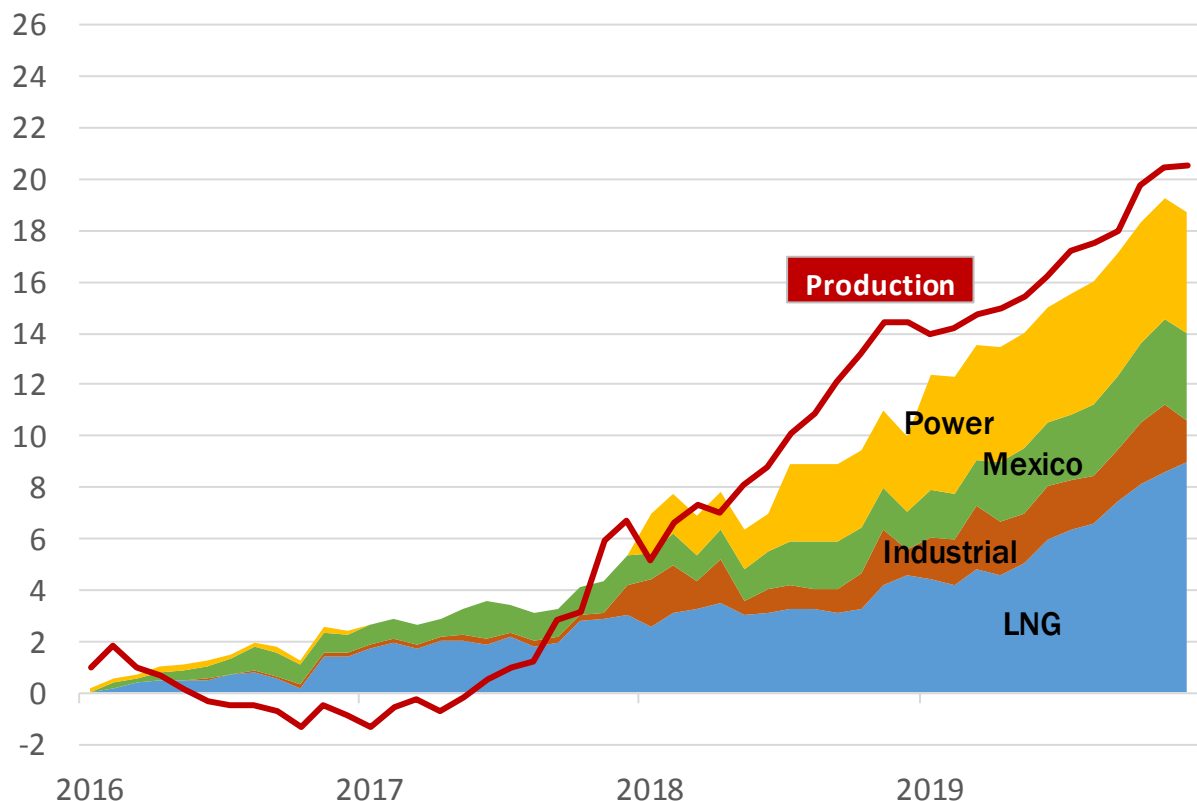
Impacts of supply and demand growth on
storage and price



L.I.M.P. VS PRODUCTION GROWTH

30

Demand and Production Changes Since 2016 - Bcf/D



DOMINANT PRODUCTION GROWTH IN 2019

Above is a detailed look at all the growth factors reported in the previous pages. By comparing changes in production and non-weather, structural demand or L.I.M.P. (LNG exports, Industrial, Mexican exports, and permanent shifts to natural gas-fired power demand) since the start of 2016, it gives us a better idea of the supply/demand balance apart from day-to-day noise created by weather fluctuations.

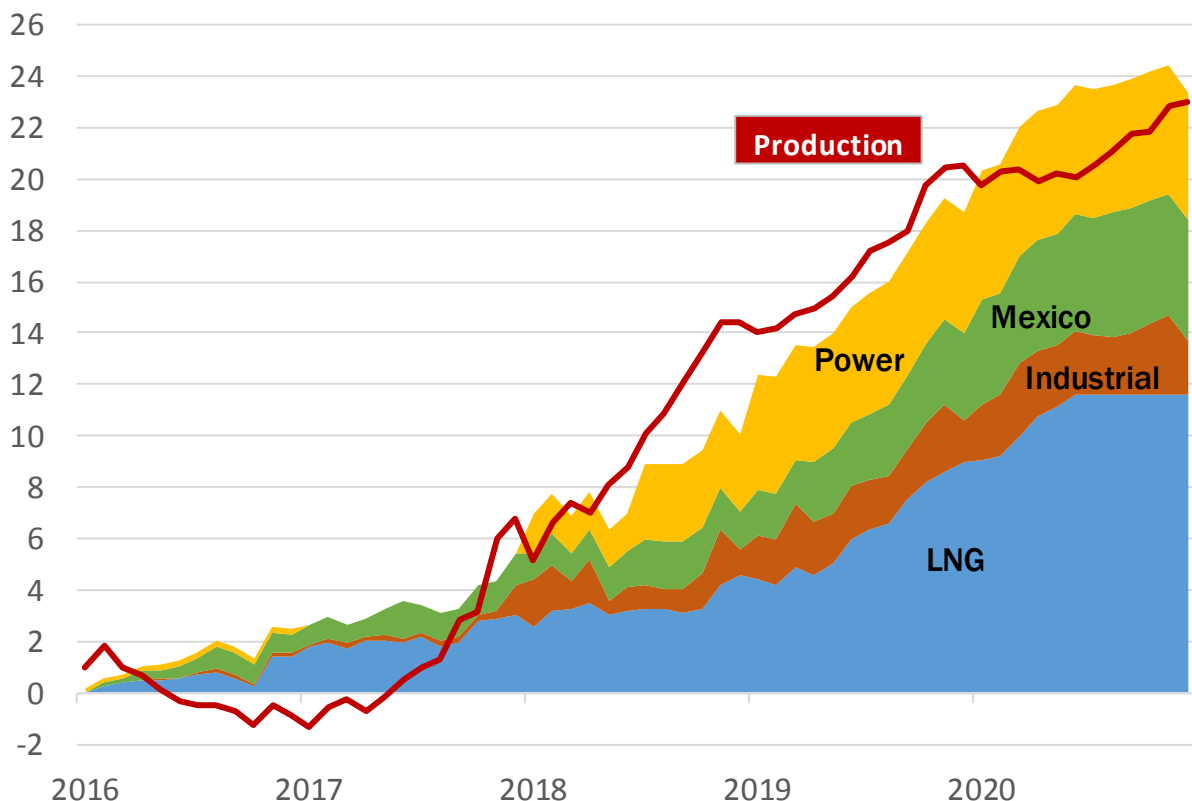
Yearly structural demand growth from increasing LNG capacity, industrial demand, exports to Mexico, and power growth were outpacing the change in supply in 2017 up until mid-summer. Since that time, production growth has erupted and brought supply comfortably above demand. Since mid-2018 production has surpassed all expectations and created what would seem to be a significant supply overhang.



DEMAND AND PRODUCTION CHANGES EXTENDED

31

Demand and Production Changes Since 2016 - Bcf/D



DEMAND L.I.M.P.'S TO DOMINANCE IN 2020

The above chart extends the forecast of structural demand and production from the previous page through the end of 2020.

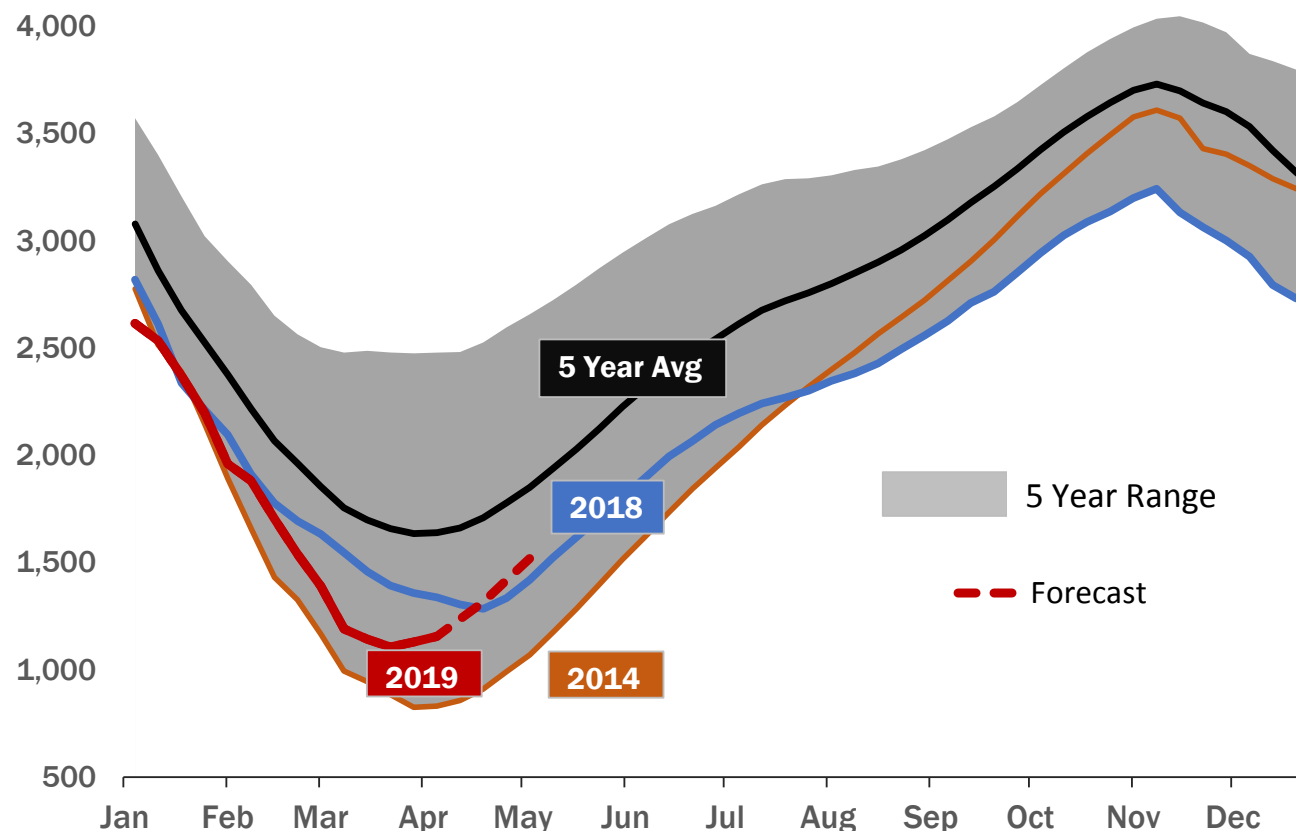
With slower production growth in 2020 and the completion of the remaining LNG export projects currently under construction, demand growth L.I.M.P.'s back to the lead over production. LNG and power demand growth play the biggest role in creating a tighter supply/demand balance that will start to pressure prices in 2020.



WHERE IS THE GAS GOING?

32

US Gas Storage - Bcf



STORAGE REMAINS SIGNIFICANTLY BELOW AVERAGE

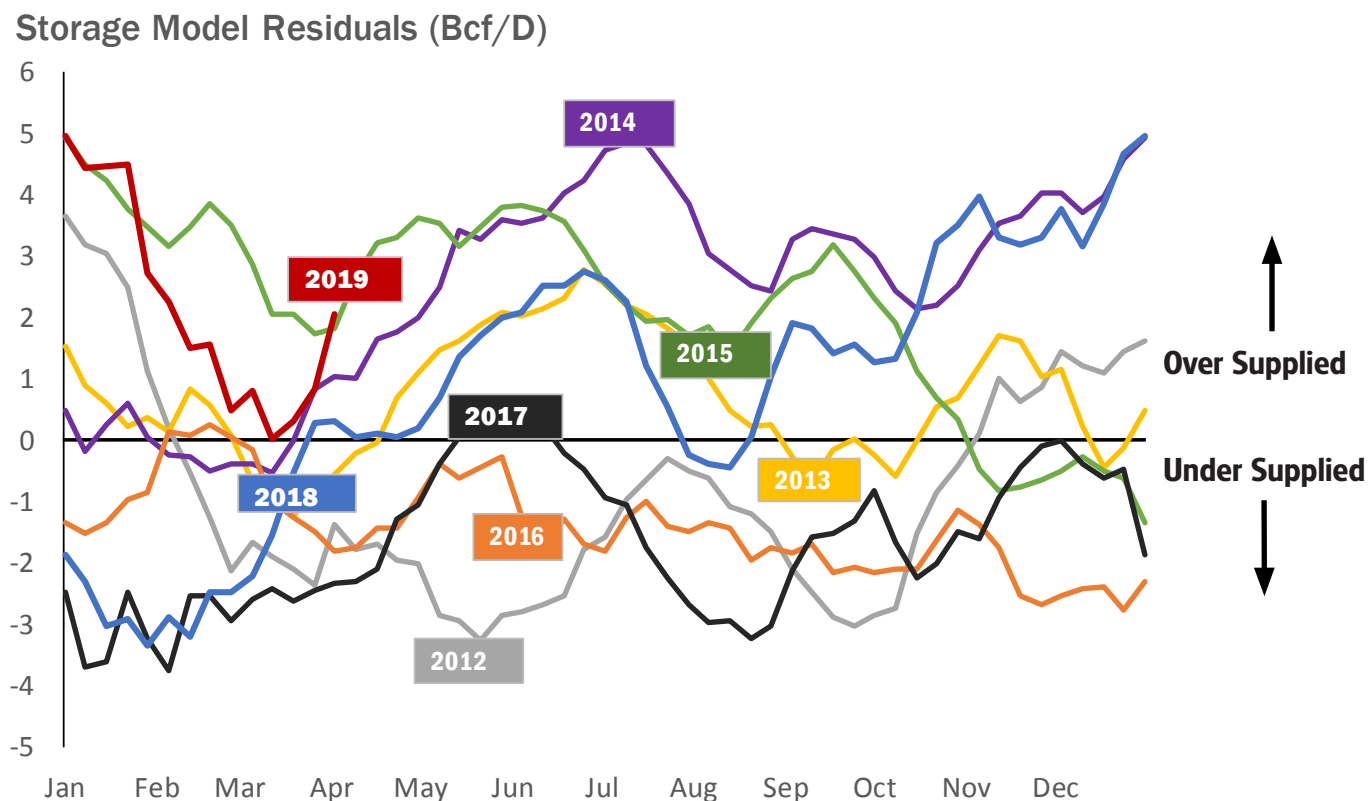
Now to look at storage. Despite the unprecedented production that is outgrowing structural demand, storage inventories have been below-average since late 2017. Furthermore, storage inventories ended the 2018-19 heating season in late March at 1,107 Bcf, their lowest end-of-season total since 2014. Bullish weather in 2018 kept storage at low levels.

However, a mild April weather supports a strong start to the injection season that will erase the storage gap to last year. With record production levels and LNG delays holding back demand in until later in the year, storage will have fewer roadblocks than last injection season and will be able refill storage to a more comfortable level.



STORAGE RESIDUALS - WELL-SUPPLIED

33



RESIDUALS STAYING POSITIVE

Storage residuals climbed steadily upward in 2018 as the market moved from an under-supplied to over-supplied state. As production has flattened in early 2019, demand growth caught up residuals decline. Residuals are in positive territory and indicate the market is well-supplied. This will be necessary to refill storage as inventories start the injection season at their lowest level in five years.

*Storage Model Residual Definition:

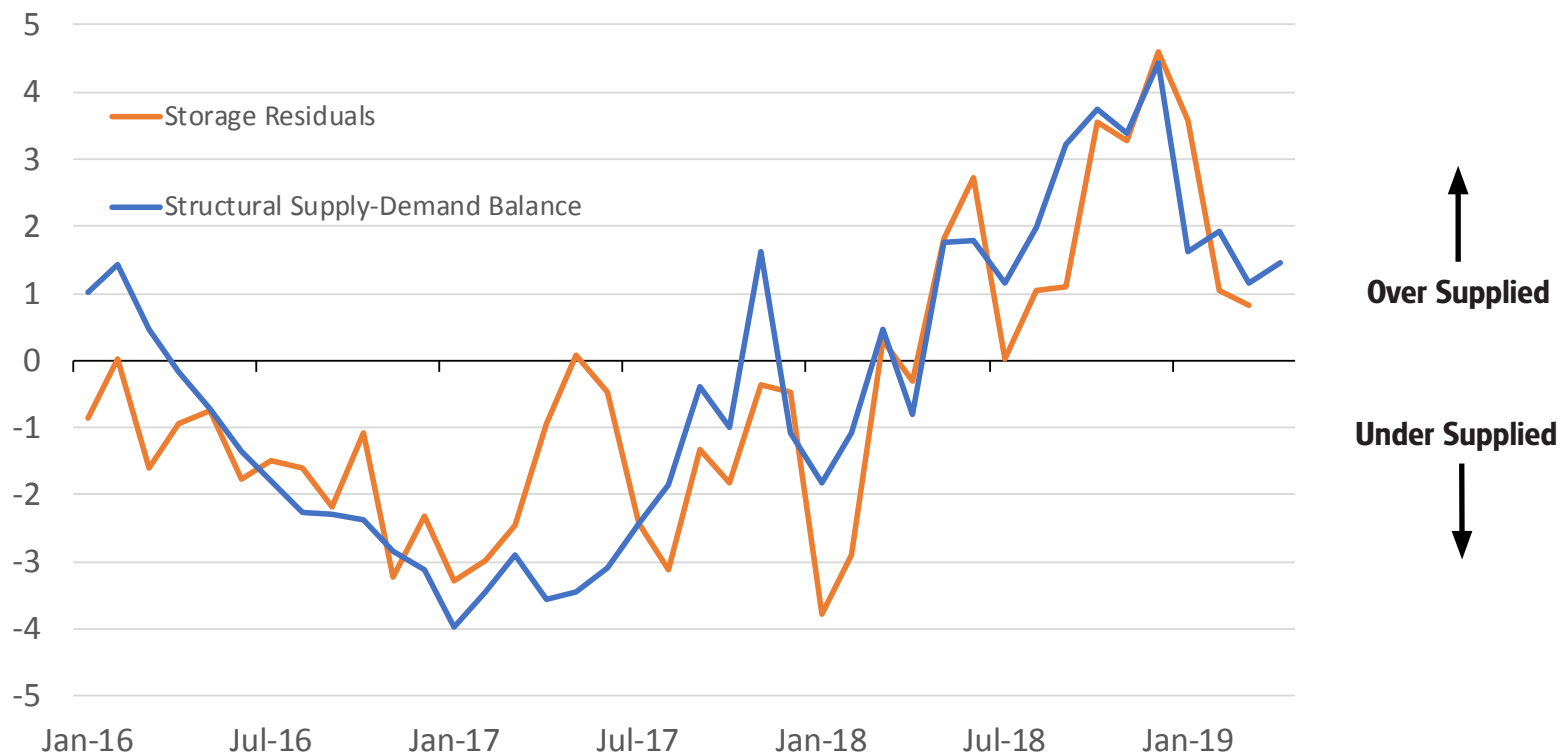
The above chart shows storage model residuals. Storage model residuals are created by subtracting Gelber's weather based storage estimate from the actual weekly storage change. This essentially removes the weather component from storage changes, leaving the non-weather balance of supply and demand. Positive residuals imply an oversupplied market and negative residuals imply an under-supplied market.



STRUCTURAL S/D MIMICS STORAGE RESIDUALS

34

Residuals vs. Structural Supply-Demand (Bcf/D)



THE NON WEATHER SUPPLY/DEMAND BALANCE

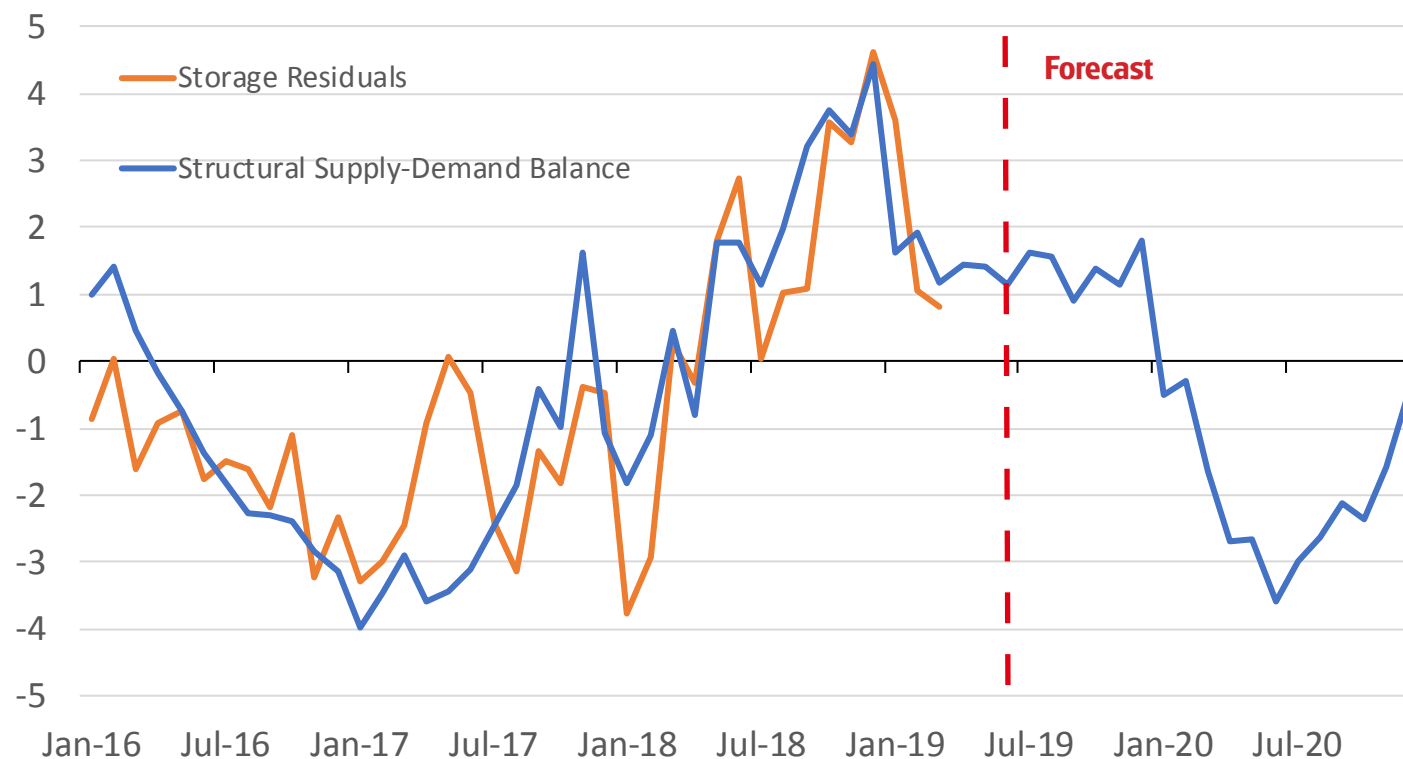
In an effort to further model the non-weather balance of supply and demand, Gelber has created a measure that calculates the difference between supply and L.I.M.P. (LNG, industrial, Mexico, and power demand) mentioned on the previous pages. By subtracting L.I.M.P. growth from supply we obtain the “structural supply/demand balance”. It is observed above that the structural balance of supply and demand closely mimics the residuals obtained from Gelber’s storage model, and can be used as a proxy to project residuals into the future. Similar to the storage model residuals, when the structural balance is negative, demand is outweighing supply thus an under-supplied market. On the other hand, when the structural balance is positive the market is over-supplied as has been the case since the middle of 2018.



PROJECTING STRUCTURAL S/D BALANCE

35

Residuals vs. Structural Supply-Demand (Bcf/D)



FORECASTS FOR SUPPLY-DEMAND PROVIDE INDICATION OF MARKET OVER OR UNDER SUPPLY

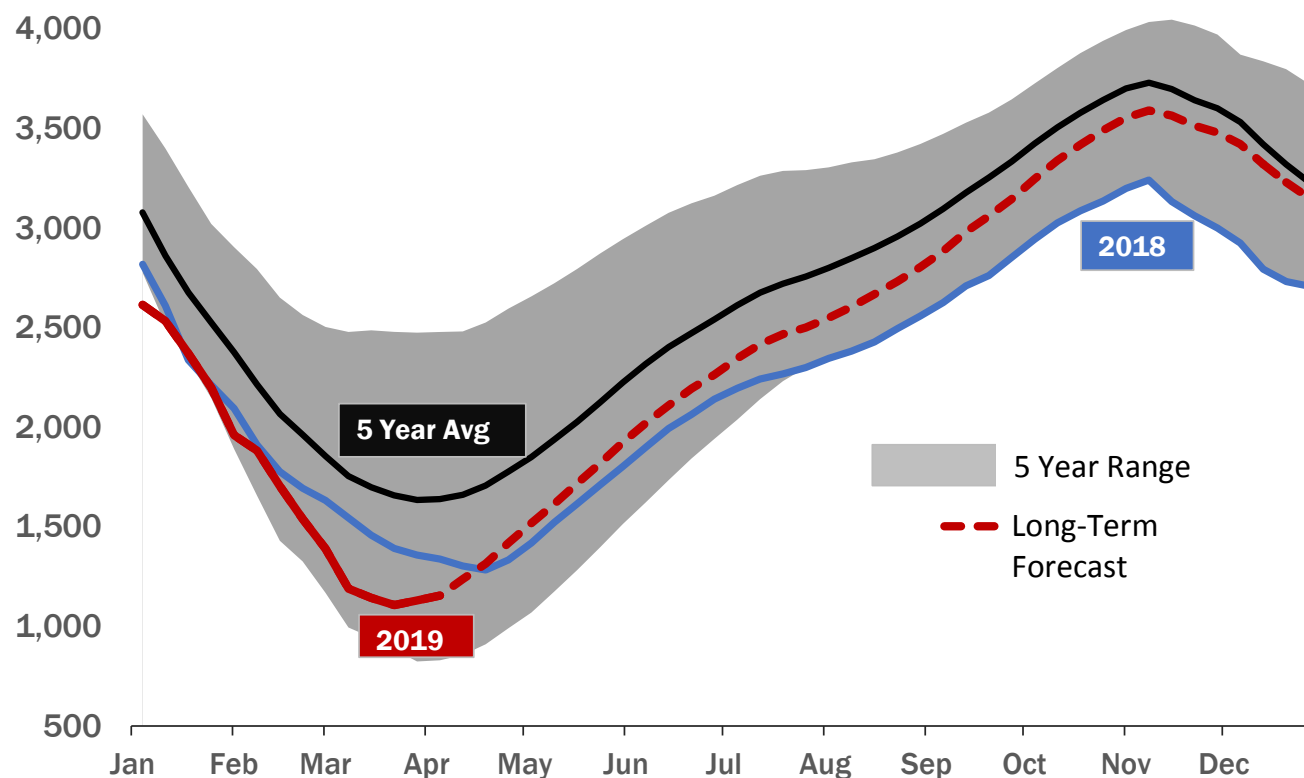
Using projections for production growth and demand factors, Gelber is able to estimate the balance between structural supply-demand through 2020. Due to aggressive growth in production from 2018 that will continue in some measure through 2019, the structural balance is expected to remain in a positive state most of this year. This indicates an over-supplied market that will exert bearish, downward pressure on prices for the remainder of the year. However, slowing production growth in 2020 and continued, steady growth from L.I.M.P. demand factors will eventually move the market back to an under-supplied condition that would start to pressure prices higher.



FORECASTING STORAGE INVENTORIES

36

US Gas Storage - Bcf



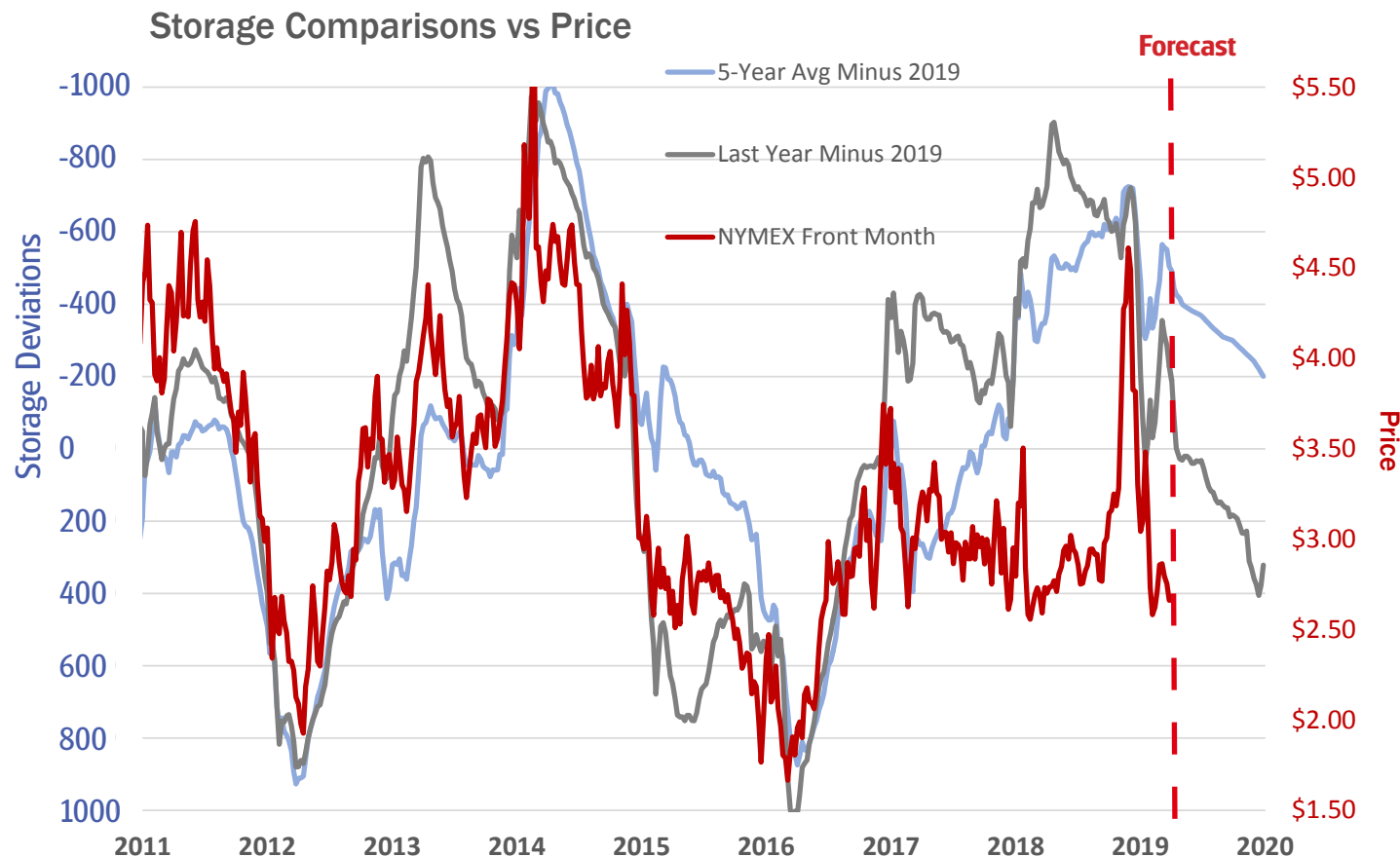
WHERE IS STORAGE HEADED THIS INJECTION SEASON?

Even with record production and positive residuals, storage inventory levels still have a major impact on market pricing, especially during winter time when storage deliverability is necessary to meet heating needs. For the coming year, a positive supply balance will allow storage to climb higher than last year. Projecting the structural balance over average levels allows us to predict the level of storage injections relative to the 5-year average. This forecast suggests that storage inventories will reach just above 3.5 Tcf prior to the 2019-20 heating season which is closer to normal and well above 2018 levels. More storage will prevent a fear-driven rally that took place in November 2018, especially since the market was able to make it through this past winter with relatively little difficulty. Once storage inventories surpass last year and start to make up ground on the 5-year average, it could open up the downside for prices to feel the full weight of record production.



STORAGE COMPARISONS

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LOW PRICES DESPITE SIGNIFICANT STORAGE DEFICIT

The above chart compares this year's storage levels, relative to the last year and the five-year average, to price. The x-axis shows the storage in an inverse manner such that above average storage is shown lower on the chart and below average storage is shown higher on the chart. The resulting inverse storage and price comparison have a strong relationship back as far as 2011. This relationship seemed to be broken for much of 2017 and 2018 as storage was depleted and prices stagnated. Because the market had become so comfortable with production growth, prices were not been responding to below-average storage the same way they did in the past. However, in November of 2018, storage fears culminated and the relationship snapped back as prices rose to almost \$5/MMBtu. Prices have since eased even though the storage deficit remains significant suggesting the market is looking ahead to shrinking storage deficient. However, a failure to reconcile the storage deficit in the coming year would set prices up for another reckoning as was seen in 2018.



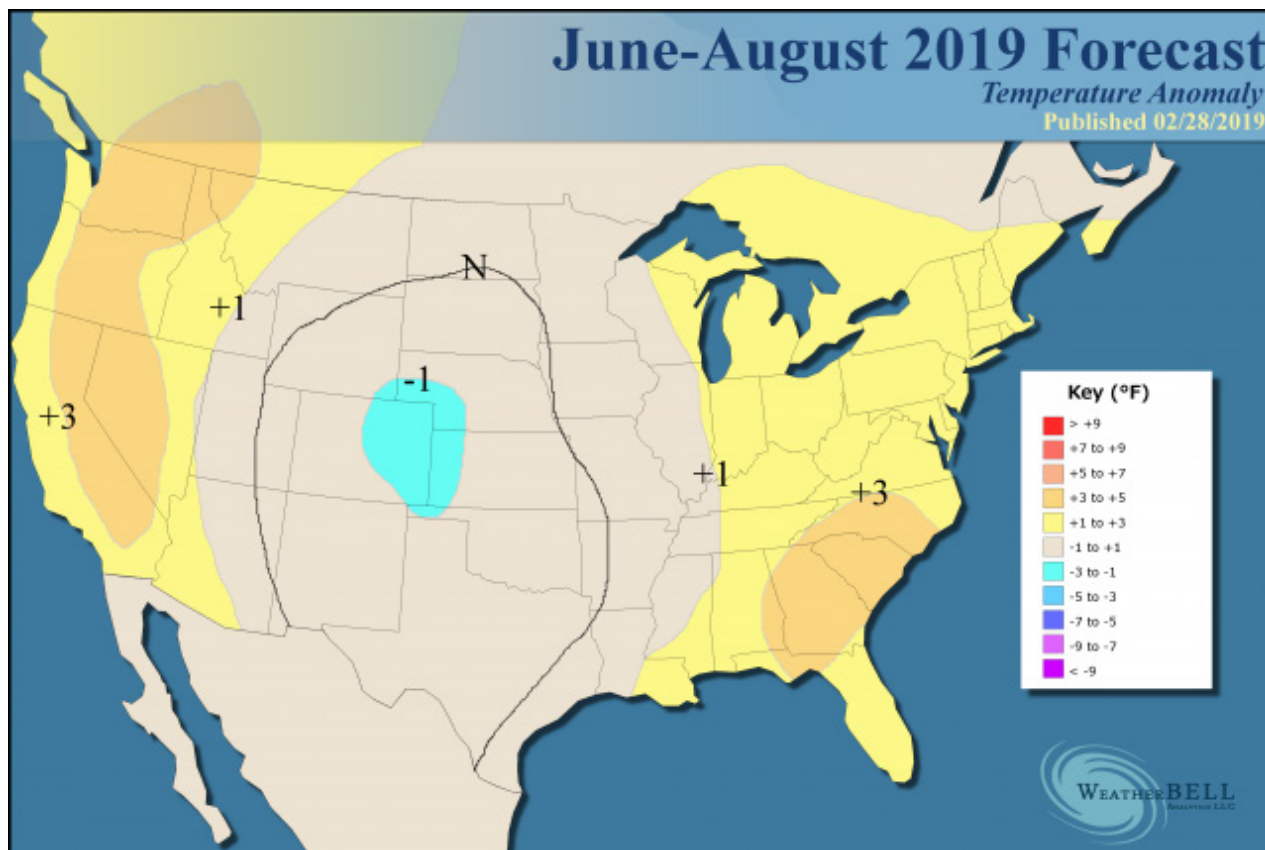
TOPICS OF INTEREST

Summer weather, basis blowouts, and the forward curve



SUMMER WEATHER FORECAST

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JUNE-AUGUST TEMPERATURE FORECAST COMPARED TO AVERAGE
(WEATHER BELL)

SUMMER LEANS WARM

This winter's weak El Niño has the potential to linger into summer and influence weather forecasts in the coming months. Overall, summer is expected to lean warmer than normal, especially in population centers on the East and West coasts. These warmer temperatures will be skewed by high nighttime lows due to warm water of the eastern US. This forecast would suggest another strong summer for power demand, although perhaps not to the same extent of the record power-generation of the 2018 summer. Additionally, early forecasts for the coming hurricane season suggest lower-than-normal activity.



A TALE OF TWO INDICES: WAHA AND SUMAS

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BASIS BLOWOUTS REACH BOTH EXTREMES

It's been the best of times and the worst of times for cash traders. In just the past two months the market has posted historic, extreme highs and lows. Sumas (Northwest Canadian Border) settled at \$159 on February 28 trading. Then, on April 2 trading, Waha tanked to a negative settle of -\$3.755.

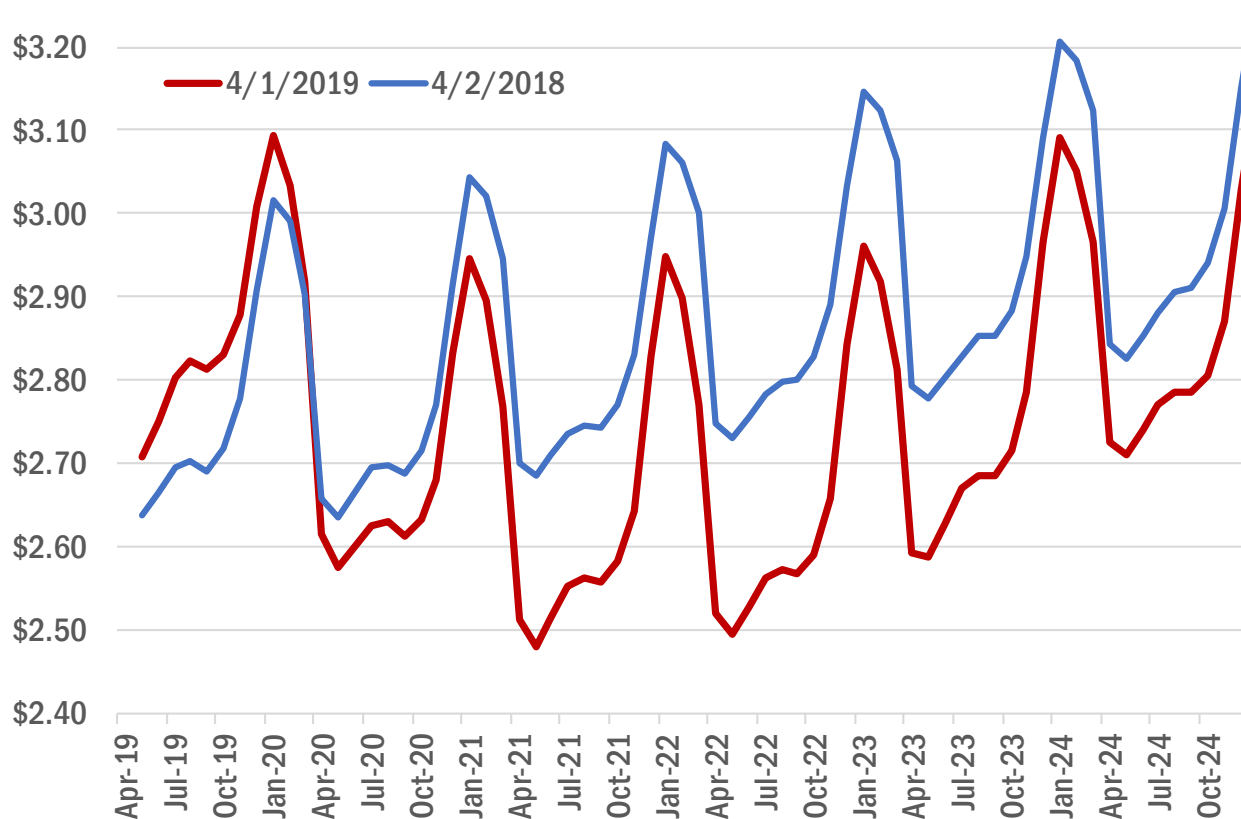
Most will chalk to these wild prices to extreme circumstances and a confluence of unlikely events. This is true but NOBODY saw this coming, especially SUMAS. This should be a cautionary tail to those who think that volatility is dead in the post shale world. All of the shale drilling, the seemingly endless Marcellus Basin, drillable storage, couldn't stop SUMAS from making new market highs. None of us don't know the future and therefore we must guard ourselves as best as we can against threats known and unknown.



FORWARD CURVE

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Forward Curve - Year over Year (\$/MMBtu)



OPPORTUNITY IN YEARS TWO AND THREE

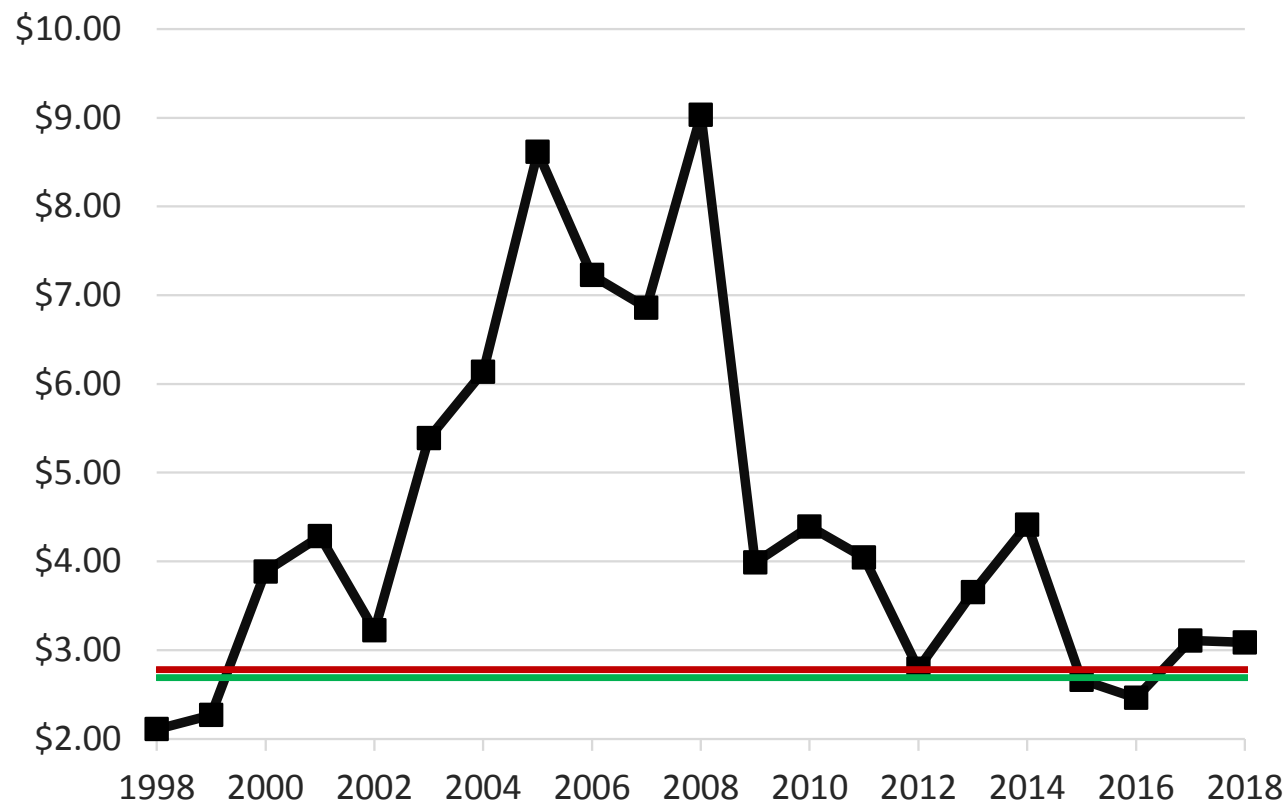
The forward curve shows a discount down the curve particularly in the years 2021 and 2022. Due to significant uncertainty and the potential for a tighter market by 2020, we believe these buying opportunities are of a tremendous value. The current backwardation in the forward strip results in higher prices and as the volatility of the futures contracts become current, and it is unclear how long these suppressed forward prices will last.



COMPARING 2020, 2021 TO HISTORICALS

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NYMEX Expirations



2008	\$9.03
2005	\$8.62
2006	\$7.23
2007	\$6.86
2004	\$6.14
2003	\$5.39
2014	\$4.41
2010	\$4.39
2001	\$4.28
2011	\$4.04
2009	\$3.99
2000	\$3.89
2013	\$3.65
2002	\$3.22
2017	\$3.11
2018	\$3.09
2019	\$2.80
2012	\$2.79
2020	\$2.70
2021	\$2.66
2015	\$2.66
2016	\$2.46

2020 Strip - \$2.70

2021 Strip - \$2.66

BOTH 2020 AND 2021 TRADING BELOW \$2.70

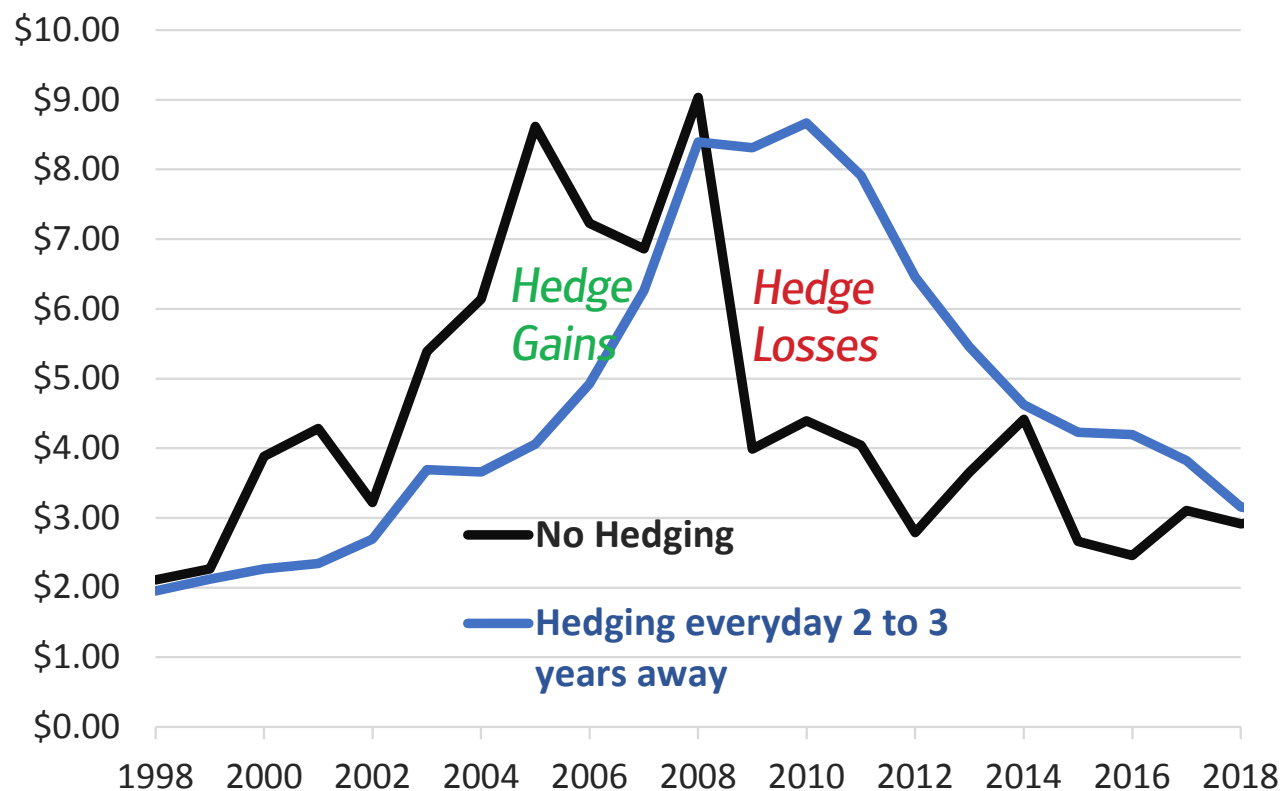
The current 2020 strip price of \$2.70 and the current 2021 strip price of \$2.66 fair well against historical annual NYMEX expirations. Since 2000, the lowest annual average is 2016 at \$2.46.



DON'T THROW THE TOWEL ON HEDGING

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Natural Gas Prices - NYMEX Henry Hub



SCORECARD OF HEDGING

The above looks at the annual average of NYMEX unhedged expirations (black line) against hedging everyday two to three years away (blue line). From 1998 through 2008, hedging produced huge gains. The next 10 years were a different story as the same hedging strategy produced huge losses. However in 2018 the hedging strategy broke even. With forward prices near historic lows, hedging is proving favorable again.



PRICE FORECAST AND KEY CONCLUSIONS



2019-2020 Hedge Seasons

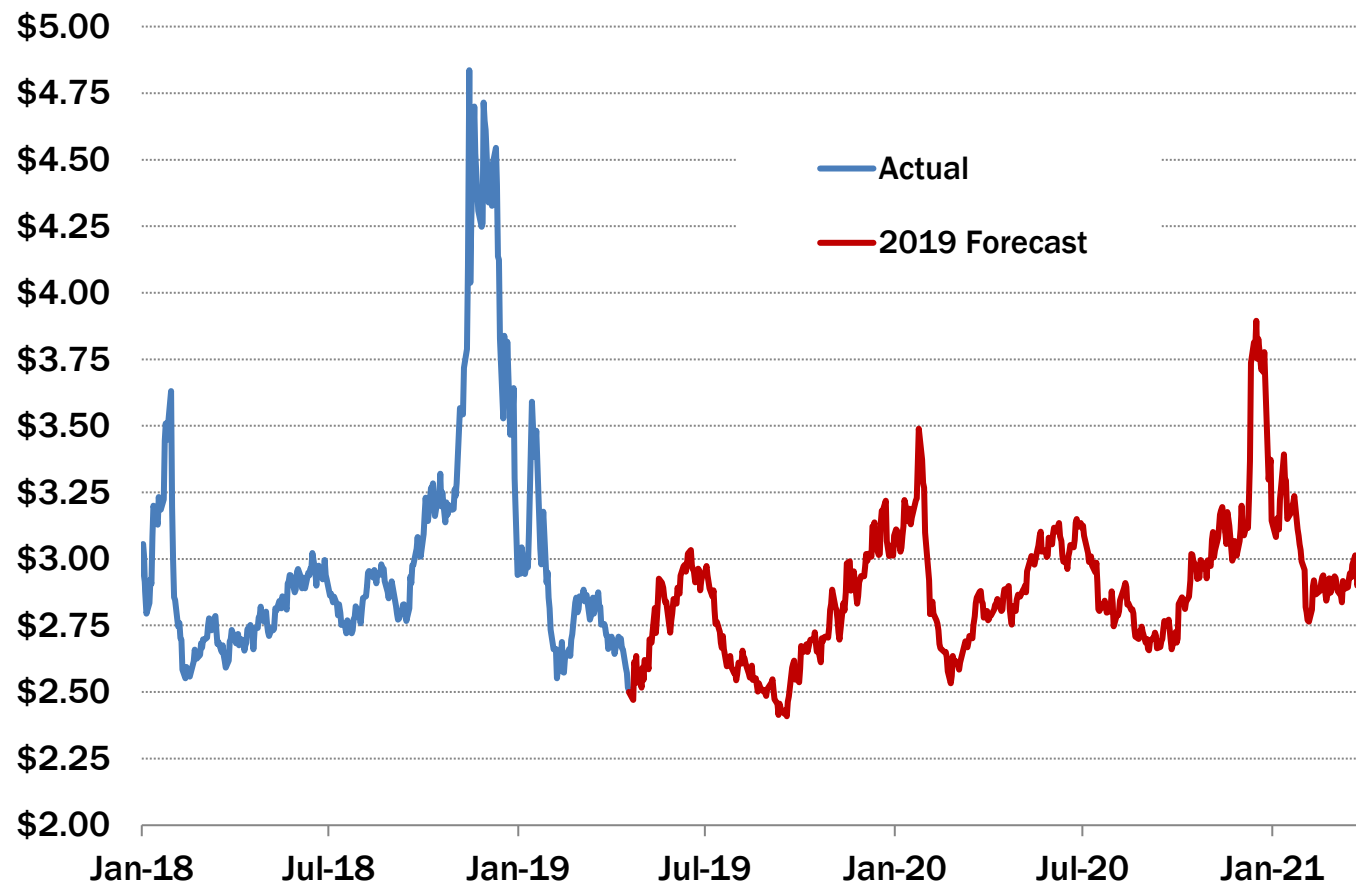
- Production growth is likely to weigh on prices throughout the coming injection season, especially when storage inventories surpass last year and reduce the deficit to the five-year average.
- Demand growth will lag production growth in 2019 but will tighten in 2020.
- Weakness could lead to prompt month prices testing and even briefly breaking through the three-year low at \$2.50/MMBtu. This weakness will lead to favorable prices for both the 2019-20 and 2020-21 winter strips in the mid-summer period.
- Persistent below-average storage and potential for freeze-offs still puts winter prices at risk and keeps hedging relevant, especially for years two and three.



Updated Natural Gas Price Outlook

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Gelber Natural Gas Price Forecast 2019- NYMEX Front Month



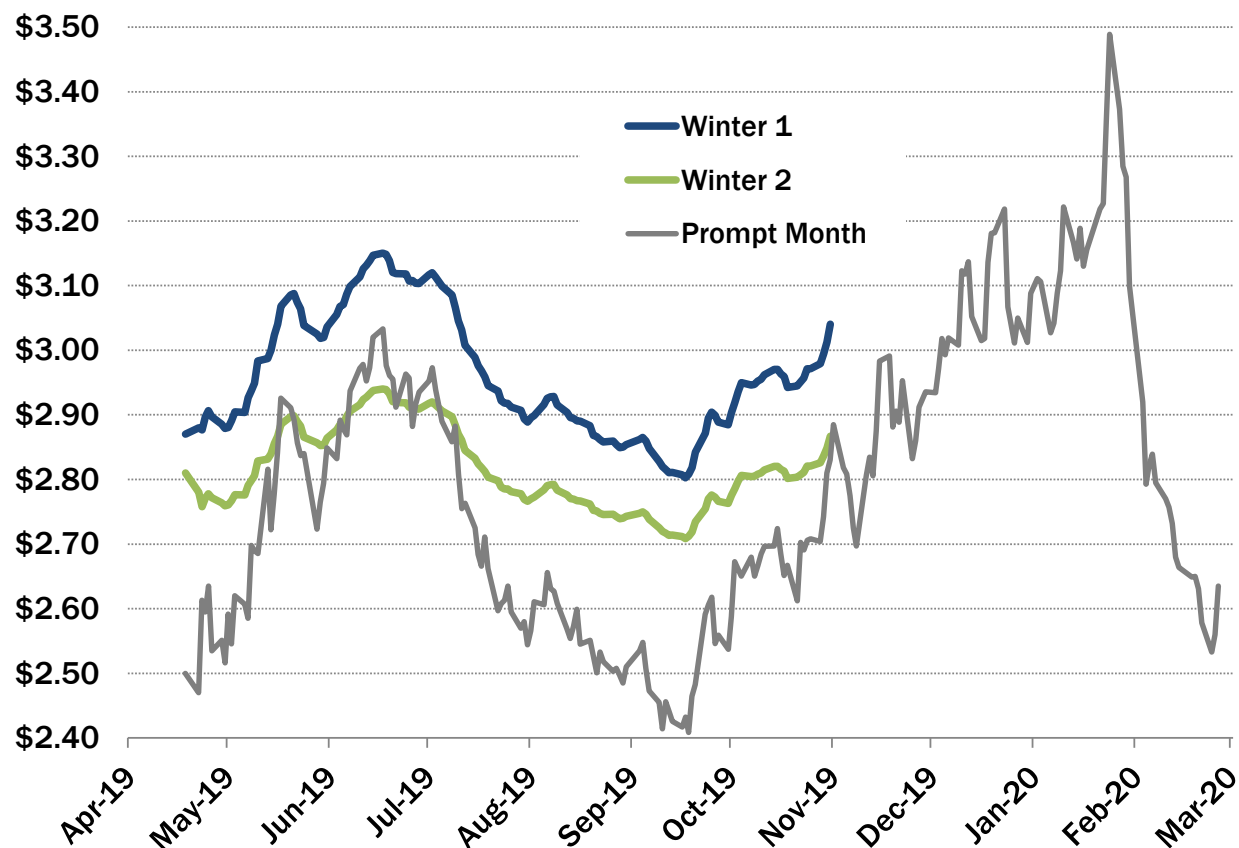
- 2019 Front month expected to average near \$2.75/MMBtu.
- Early 2020 front month price forecast indicates average of \$2.95/MMBtu.
- Forward 2019 calendar strip averaging \$2.80/MMBtu on forecast publication date.
- Forward 2019 calendar strip averaging \$2.77/MMBtu at publication.



Winter Strips Forecast

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Gelber Natural Gas Price Forecast 2019- Winter Strips



-The above chart shows predicted trading ranges for the 2019-20 and 2020-21 winters in the coming injection season.

-Winter 1 average \$2.98/MMBtu on publication date ; Winter 2 averaging \$2.86/MMBtu.

-Gelber sees value in winter purchases below \$3/MMBtu.

-Winter 1 will present opportunities to hedge at these levels throughout the season, especially early in the season and the mid- to late- summer period.

-Winter 2 remains a solid value throughout the year and is likely to increase in price as it becomes prompt next year.



Key Conclusions

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- * Production will grow in 2019 but at a slower pace than last year.
- * Demand growth from LNG, Industrial, Mexican Exports, and Power (L.I.M.P.) sectors are absorbing most of the market's record supply growth.
- * Storage is entering the 2019 injection season at 1.1 Tcf, its lowest level since 2014. Inventories will surpass last year's levels but will stay under the 5-year average.
- * Prices will likely remain weak in 2019 as robust supply limits rallies and a falling storage deficit eases concern about the coming winter.
- * Fuel switching will still provide some support to prices as they approach \$2.50.
- * Stronger prices will return in 2020 when slow but steady L.I.M.P. demand growth catches up with slowing production growth.



FURTHER DISCUSSION

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