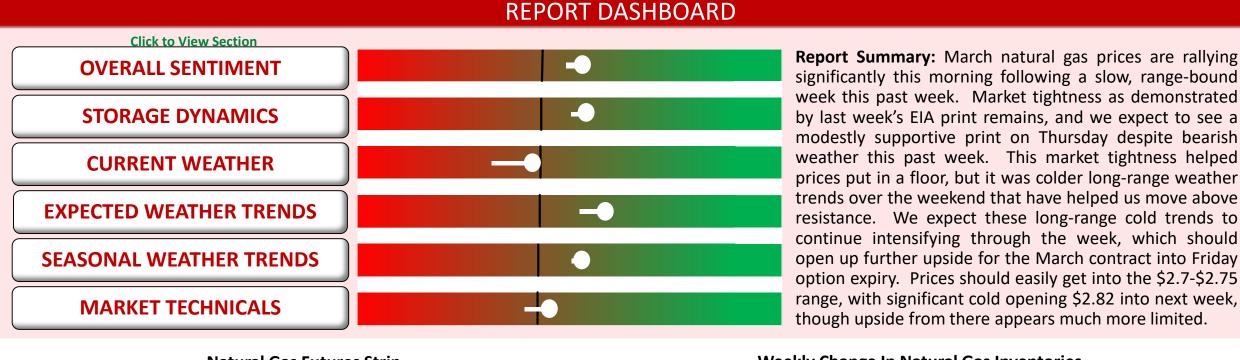
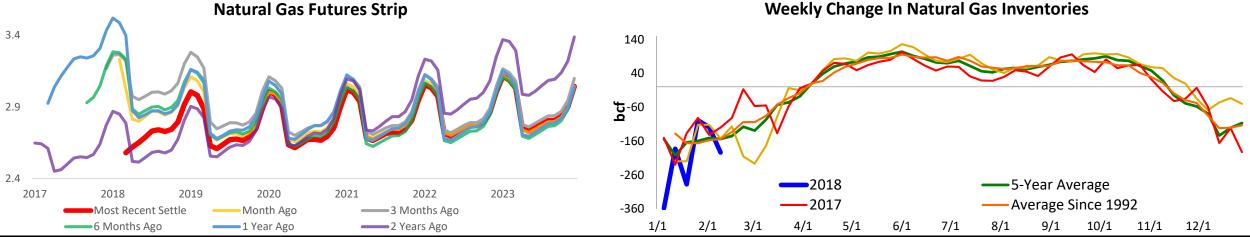
Coverage: Weekly Natural Gas Market Analysis

Forecast Confidence: 6/10

Current Deficit/Surplus to 5-Year Storage Average: **-433 bcf**

Today's Most Recent Prompt Month Price: 2.642







BESPOKE Weather Services Overall Sentiment: SLIGHTLY BULLISH

Sentiment Summary: Our sentiment remains slightly bullish, as it was at this time last week, as we see far more risks for long-range GWDDs to increase through the week with strong upper level blocking helping to lock in cold weather across some key heating demand regions. Market tightness provides a clear short-term floor for prices, and though cold in March does not have nearly the impact it does in January it can still lower gas stockpile estimates into the end of withdrawal season.

Storage Dynamics

A very tight EIA print last week revealed another impressive withdrawal from storage that continued to exacerbate the current deficit from 5-year average storage levels. Record production levels should only grow through the spring, leading the natural gas market to discount a significant amount of this storage deficit, yet should that production not come online or even modestly underwhelm there remains quite a deficit to fill, which may necessitate higher prices. We see current market tightness and limited storage levels as helping set a floor for prices and cancel out the impact of growing production levels.

Wk End	EIA Forecast
16-Feb	-120
23-Feb	-90
2-Mar	-92
9-Mar	-125
	*BWS Forecast

Current Weather

Very significant warmth across the East for the next week and a half will continue to kill heating demand across the country as some of the first very early cooling demand works in for the Gulf Coast. However, Days 11-15 should see increasing cold risks across much of the country as a -NAO block gets established, leading GWDDs to trend back above average through early March. Over the weekend these colder long-range trends canceled out the warmer medium-range trends we had been watching, leading to 15-day GWDD forecasts that were around to a bit above where they were on Friday.

Current

117

176

GWDDs

6-10 Day Forecast

8-14 Day Forecast

Weather Trends

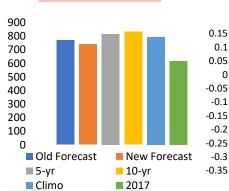
Over the weekend we finally saw many of the colder long-range trends on guidance that we were calling for much of last week, and it appears that these trends could continue into this week as well with model guidance continuing to pick up on the strength, orientation, and progression of the forming -NAO block. Model guidance already shows quite significant cold risks in the Day 13-15 output, and as that nears the consensus should only increase from there. The result is an expectation that we continue to increase GWDDs in long-range forecasts until we see evidence of that blocking break down, which is not yet apparent on guidance.

GWDDs Today's 15-Day to Avg Friday's 15-Day to Avg Change GWDDs -25.3 Friday's 15-Day to Avg 5.7

Seasonal Trends

Seasonal trends continue to favor more significant GWDDs to average in March after we saw serious **GWDD** destruction through February with this significant southeastern ridge. Still, we expect heating demand in February to be decently above last year's levels where we saw a record warm month. From there March features cold early on though may trend more mild through the month. Though April appears uninteresting for now, we see risks that early this summer warmth could elevate early season cooling demand.

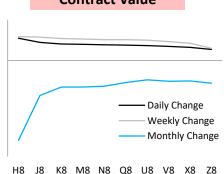
February GWDDs



Market Technicals

The March natural gas contract appears to be breaking above resistance at the \$2.62 level today, significantly improving the technical picture from last week where prices were trapped in that narrow \$2.52-\$2.62 range. This seems to open up upside towards the \$2.7-\$2.75 level into the end of February, with seasonality supportive into the end of the month, though seasonality tends to turn more bearish in March and money managers remain rather net long, keeping the technical picture from being too bullish longer-term.

Change In Natural Gas Contract Value



Tuesday

Expected

115

166

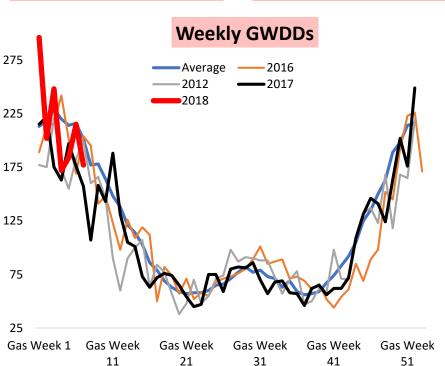
Storage Dynamics: SLIGHTLY BULLISH

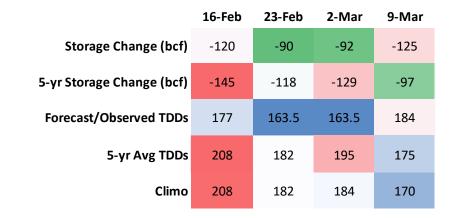
Section Summary: A very tight EIA print last week last week continued to underscore the current storage deficit to average. The print to be announced on Thursday should begin to push us back closer to the 5-year average again, but it continues to look rather tight on a historical basis as nuclear outages tick higher and baseload burns remain strong. Production increases will continue to limit the bullishness of future prints, but we expect Thursday's print to still be rather impressive.

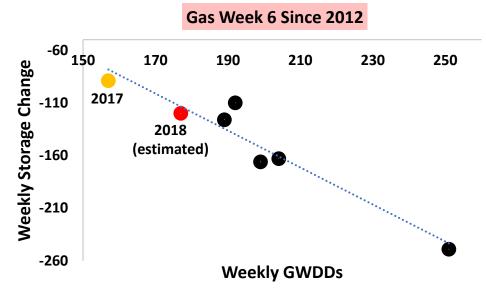
Raw TDD Model Average Adjusted TDD Model

Wk End	Estimate
16-Feb	-114.1
23-Feb	-87.2
2-Mar	-87.2
9-Mar	-128.1

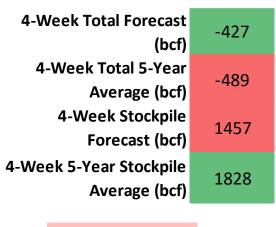
Wk End	Estimate
16-Feb	-110.7
23-Feb	-112.2
2-Mar	-93.5
9-Mar	-154.1

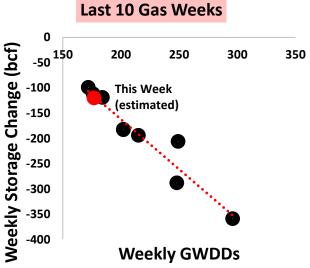












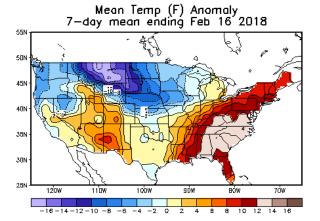


Storage Dynamics: SLIGHTLY BULLISH

Key Takeaway: Last week featured significant cold across the Midwest and Great Plains, with some of that cold able to dive into the South. Meanwhile, very significant heat was observed across the East, where we saw some of the first cooling demand of 2018. The result was actually a tick higher in week-over-week power burns despite significant res/com demand increases. Thursday's withdrawal will be far less impressive than the last but should still demonstrate market tightness.

Discussion

After a few weeks where our model had almost perfectly predicted the weekly EIA prints, last week we saw non-linear demand increases from significant cold across the center of the country result in what was a very large withdrawal. This week we saw cold ease off outside of the Great Plains, with only a couple weaker cold shots into the South. Still, we have adjusted our model slightly to account for some of the cold across the South that was still able to pull heating demand to about average for the week while also noting the significant amount of heating demand across the West North Central region. We see a modest withdrawal as quite likely thanks to strong powerburns and production that struggled to tick up much this past week. The result should be another tight print, though the market has been discounting recent tightness due to expectations of production surging through the spring season. There will be some uncertainty around the number as it is unclear just how strong burns and demand were with the sizable warmth across the East, but warmth should allow for any withdrawal to come in under the 5-year average, limiting just how bullish any reaction will be as storage concerns remain limited.



	Avera	ge daily values (E	3cf/d):
	this week	last week	last year
U.S. consumption	86.4	92.6	75.4
Power	23.8	23.3	20.8
Industrial	23.2	23.7	21.7
Residential/commercial	39.4	45.5	32.8
Mexico exports	4.4	4.5	4.2
Pipeline fuel use/losses	6.8	7.3	5.9
LNG pipeline receipts	3.2	3.3	2.2
Total demand	100.8	107.7	87.7

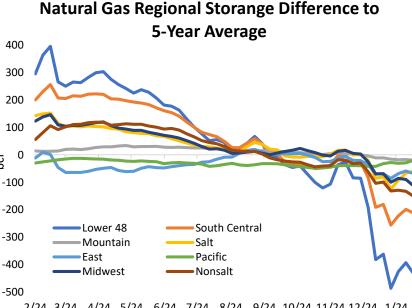
Source: OPIS PointLogic Energy, an IHS Company Note: LNG pipeline receipts represent pipeline deliveries to LNG export terminals. U.S. natural gas supply - Gas Week: (2/8/18 - 2/14/18)

	Aver	Average daily values (Bcf/d):								
	this week	this week last week								
Marketed production	87.6	87.5	79.2							
Dry production	78.1	77.9	70.8							
Net Canada imports	5.6	5.8	6.1							
LNG pipeline deliveries	0.2	0.3	0.4							
Total supply	83.9	84.1	77.2							

Source: OPIS PointLogic Energy, an IHS Company

Note: LNG pipeline deliveries represent gas sendout from LNG import terminals.



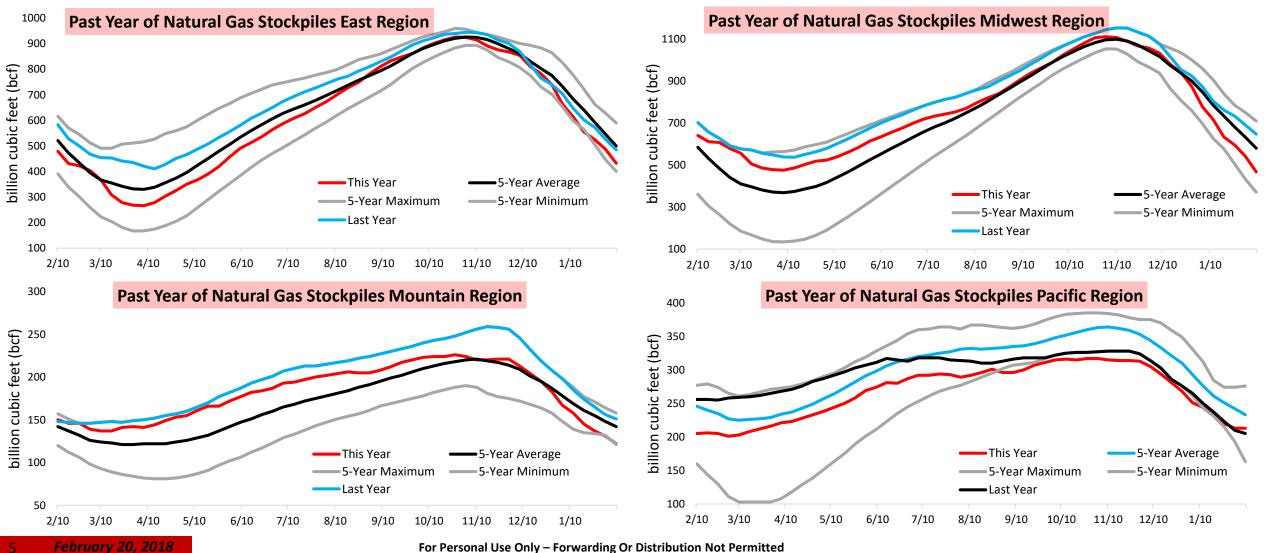


2/24 3/24 4/24 5/24 6/24 7/24 8/24 9/24 10/24 11/24 12/24 1/24



Storage Dynamics: SLIGHTLY BULLISH

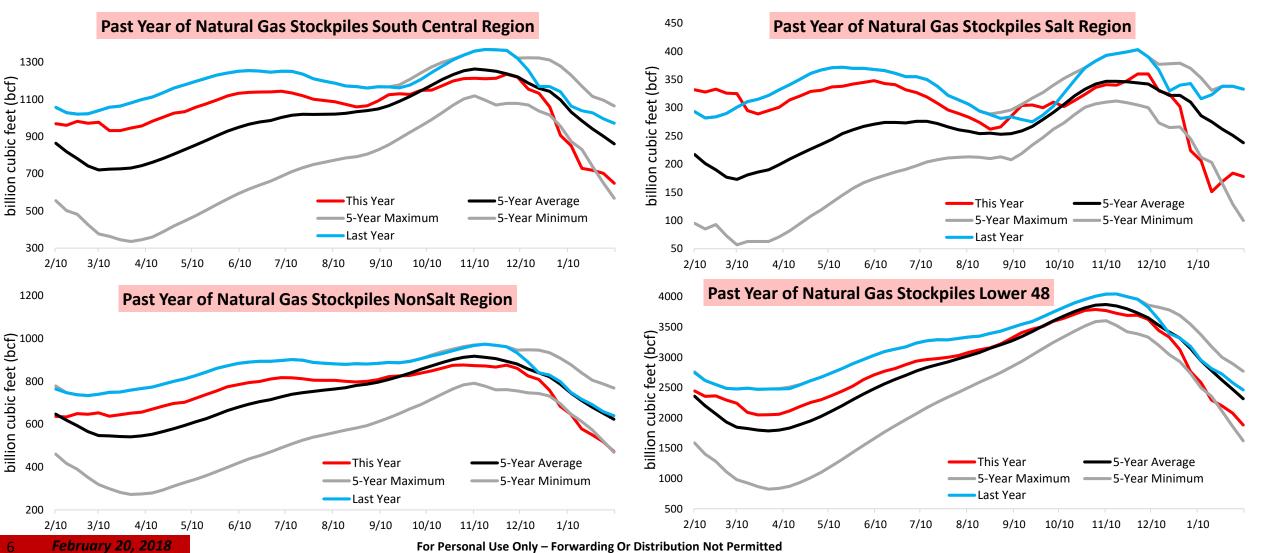
Key Takeaway: Stockpiles stabilized across the Pacific this past week as we saw the Southwest cool off, though recent cold weather could keep a bit of a strain on stockpiles there. The Mountain Region remains a focus with heating demand around average last week and storage levels right at the 5-year average. Lingering heating demand there into the next few weeks should put a strain on stockpiles as they may require more gas transported there than otherwise necessary in March.





Storage Dynamics: SLIGHTLY BULLISH

Key Takeaway: Stockpiles ticked back lower across the South Central Regions as we saw losses across both Salts and NonSalts. Storage concerns here are not nearly what they once were as we were able to inject gas back into storage across the Salts in the last mild spell, but upcoming cold in early March that could reach all the way into the South may be able to pull these stockpiles back a bit lower, keeping at least a bid under prices until consistent injections return again.



Next Slide

BESPOKE Weather Services
Current Weather: NEUTRAL

Section Summary: GWDD forecasts remain decently below seasonal averages through the next two weeks, but we should see GWDDs get back above average the first week of March. Though the short-term features significant warmth it will not be as widespread as we saw last year, and not quite as far from seasonal averages as previously feared either, as weekend GWDD losses were relatively limited. Combined with long-range cold risks and GWDD forecasts are less bearish than last week.

	Utility Gas	Utility Gas Weighted Heating Degree Days											
	Region	19 Feb	20 Feb	21 Feb	22 Feb	23 Feb	24 Feb	25 Feb	Total	Diff from Avg.			
New England	1	29 29 28 28 30 27 26	15 14 14 15 20 22	9 8 9 12 19	20 21 20 25	28 28 30	24 24	21	146	-91 -38.4%			
Mid Atlantic	2	27 27 25 25 27 25 25	10 10 10 12 16 19	5 5 9 12 16	20 21 20 24	25 26 26	19 20	17	123	-97 -44.09%			
E N Central	3	20 19 18 20 25 26 26	9 11 14 17 23 29	24 27 26 31 30	32 32 33 32	26 29 29	22 24	25	158	-79 -33.33%			
W N Central	4	29 29 28 30 33 37 37	34 38 39 42 42 42		42 41 40 39	34 33 33	31 30	32	249	12 5.06%			
S Atlantic	5	12 12 11 11 14 12 12	3 2 2 3 6 6	0 0 1 2 4	4 5 5 9	8 9 9	5 6	4	36	-67 -65.05%			
E S Central	6	2 3 3 3 7 6 8	0 0 0 0 2 5	1 2 2 6 6	7 9 9 11	3 5 6	2 3	6	21	-110 -83.97%			
W S Central	7	1 1 1 1 3 5 5	1 1 3 4 6 8	13 14 12 13 11		8 9 8	5 6	7	50	-27 -35.06%			
Mountain	8	33 33 32 31 30 30 29	43 43 39 38 35 32	42 41 38 35 34		33 31 30	31 30	30	248	79 46.75%			
Pacific	9						21 19	19	164	54 49.09%			
Cont. US	CONUS	21 20 19 20 22 21 22	16 16 17 18 20 22	20 20 20 22 22	24 24 23 24	22 22 22	19 19	19	141	-18 -11.32%			

Bespoke Gas Weighted Degree Day (GWDD) Forecasts

GWDDs	2/20	2/21	2/22	2/23	2/24	2/25	2/26	2/27	2/28	3/1	3/2	3/3	3/4	3/5	3/6	Total
BWS Forecast	18.5	22	26	23.5	22	22	23	24	24	24	25	26	26	27	27	360.0
Old Forecast	19.5	22	26	25	23	23.5	23.5	23	22.5	23	24.5	25	25	24	24	353.5
2017	15	15	13	15	17	22	27	24	19	16	23	27	27	24	20	304.0
5-yr Avg	25.2	24.2	24.2	26.2	26.4	27.6	30.6	29.8	27.2	26	27.8	30	29.2	28	26.6	409.0
1981-2010 Avg	25.4	24.7	24.9	25.4	26.2	26.9	27.2	26.9	26.5	25.6	25.1	25.9	25.7	24.6	24.4	385.3

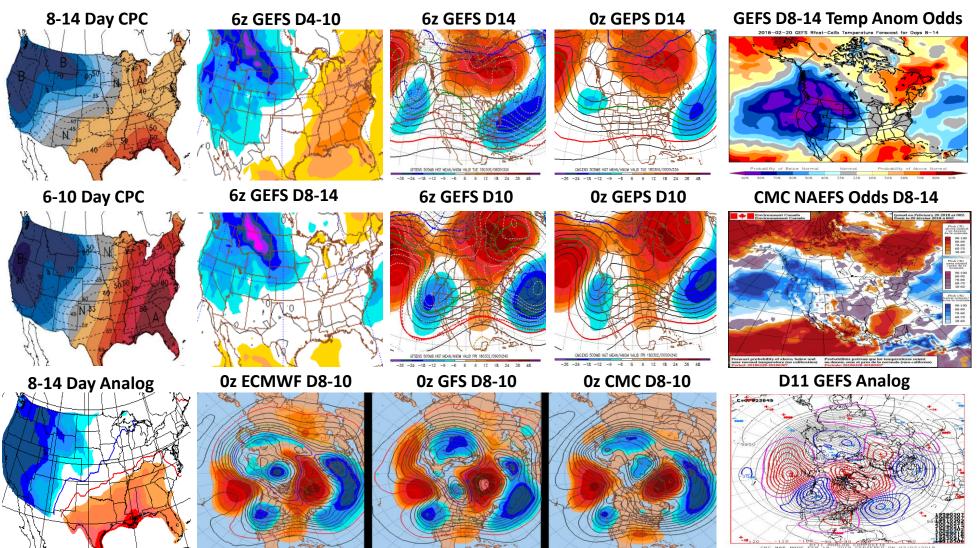
sks and GWDD forecasts are less bearish than last week.														
	Historic GWDDs													
	2/26	2/27	2/28	3/1	3/2	3/3	3/4	3/5	3/6	3/7	3/8	3/9	3/10	3/1
2017	27	24	19	16	23	27	27	24	20	18	15	16	23	28
2016	25	22	16	20	23	26	25	23	20	16	12	11	10	13
2015	37	41	40	36	32	29	29	35	36	28	23	20	19	16
2014	36	37	36	32	33	39	38	32	30	26	23	23	17	14
2013	28	25	25	26	28	29	27	26	27	26	26	22	19	19
2012	26	25	24	21	22	23	23	25	22	16	16	21	21	17
2011	30	26	23	25	25	26	23	21	23	26	24	22	20	20
2010	30	29	27	26	27	27	26	26	24	23	21	19	18	17
2009	22	23	28	31	33	33	29	22	18	16	16	20	20	25
2008	26	30	32	24	22	22	23	25	27	28	28	28	25	23
2007	26	26	25	26	25	26	28	26	31	29	27	24	18	16
2006	30	28	25	22	23	27	27	25	24	24	23	18	17	17
2005	29	28	28	29	31	31	29	25	22	17	22	29	29	25
2004	28	27	24	18	17	19	19	16	16	18	20	21	21	21
2003	39	36	32	29	29	34	33	30	30	32	27	26	32	30
2002	24	30	33	31	30	31	36	35	26	20	18	17	24	27
2001	24	27	31	31	28	26	26	27	29	27	25	26	26	25
2000	14	15	18	17	20	23	21	18	17	15	11	12	19	23
1999	24	21	20	20	21	22	25	26	26	31	32	30	30	29
1998	19	19	21	21	23	25	25	25	25	24	24	23	29	34
1997	26	21	21	21	19	23	24	24	25	26	22	21	19	18
1996	20	22	27	34	31	32	32	25	25	33	38	38	34	27
1995	24	24	24	29	33	33	29	26	23	24	25	30	28	22
1994 1993	34 38	37 38	34	29 31	28 26	26	21	19	19	19 22	22	26 20	26 22	26 25
1993	23	22	36 19	21	16	23 16	23 16	25 15	25 15	15	20 15	16	21	27
1991	29	30	26	19	17	20	22	21	21	24	26	26	25	24
1990	34	28	27	27	24	22	26	26	25	27	26	20	16	13
1989	27	28	30	31	31	29	29	29	32	33	32	27	22	18
1988	27	23	24	23	23	23	25	27	24	20	18	18	21	22
1987	27	27	25	22	23	23	22	21	19	14	12	18	29	30
1986	25	25	30	30	25	22	21	22	23	28	31	23	16	17
1985	21	23	26	22	21	23	25	25	29	26	21	19	18	17
1984	26	29	30	32	29	28	28	27	29	31	33	35	34	31
1983	28	26	22	19	16	14	13	13	13	14	17	21	24	24
1982	33	30	27	25	24	29	30	28	30	31	32	30	24	19
1981	21	21	19	20	24	27	26	26	27	27	26	23	22	23



February 20, 2018

Current Weather: NEUTRAL

Key Takeaway: Significant warmth through the next 10 days can be expected across the eastern half of the country as a strong southeastern ridge dominates, while cold works in across the West. From there, however, a strengthening -NAO block should pressure cold across much of the country in the 11-15 Day time frame.



Discussion

Last week natural gas prices were consistently under pressure from very bearish weather forecasts as the market priced in a significant southeastern ridge that would keep the eastern third of the country far warmer than average. That has now moved into short and mediumterm forecasts, as warmth in the 4-10 Day period across the East should be quite strong. From there, though, model guidance shows an increasingly strong consensus in colder weather moving across the country under a -NAO block that crushes any southeastern ridge. The result is temperatures across the East in the 8-14 Day time frame as a whole likely ending up rather close to average, with both American and Canadian guidance agreeing on this. The first week of March should feature heating demand above average, and though the impact of that in March is certainly not what it was back in February it should at least help to cancel out some of the very bearish warm weather that the market priced in this past week. Even on 8-10 Day operational guidance we already see agreement across models that the strong -NAO block will be collapsing any southeastern ridging and sliding that weakly into the middle of the country as colder weather begins to slide in across the East Coast, eventually connecting with cold across the Great Plains to turn much of the country colder than average.

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Above images courtesy of the Climate Prediction Center

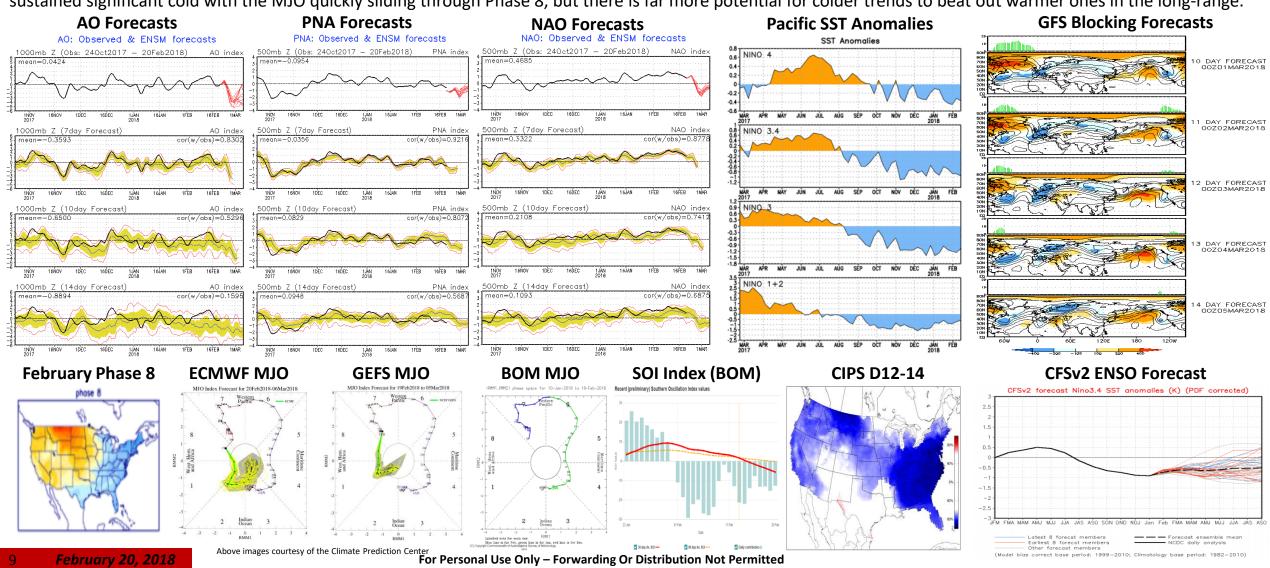


Next Slide

Weather Trends: **SLIGHTLY BULLISH**

BESPOKE Weather Services

Section Summary: Models continue to show a long-range pattern that holds significantly more cold risks than we had seen last week, as a strongly negative AO will combine with a strengthening negative NAO to push cold weather across Canada south into the United States. The Pacific does not look particularly favorable for sustained significant cold with the MJO quickly sliding through Phase 8, but there is far more potential for colder trends to beat out warmer ones in the long-range.



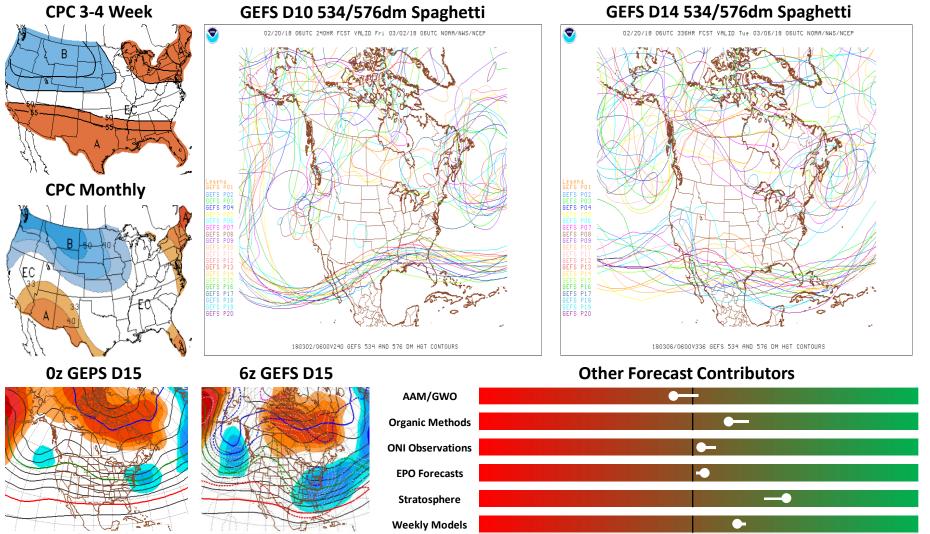
Model volatility continues to remain guite high as



BESPOKE Weather Services

Weather Trends: **SLIGHTLY BULLISH**

Key Takeaway: CPC forecasts have begun to pick up on the potential for more significant cold into March with the forming –NAO block, as they forecast cold focused across the Midwest and Great Plains but demonstrate occasional cold shots into the Southeast and Ohio River Valley will be increasingly possible moving forward too.



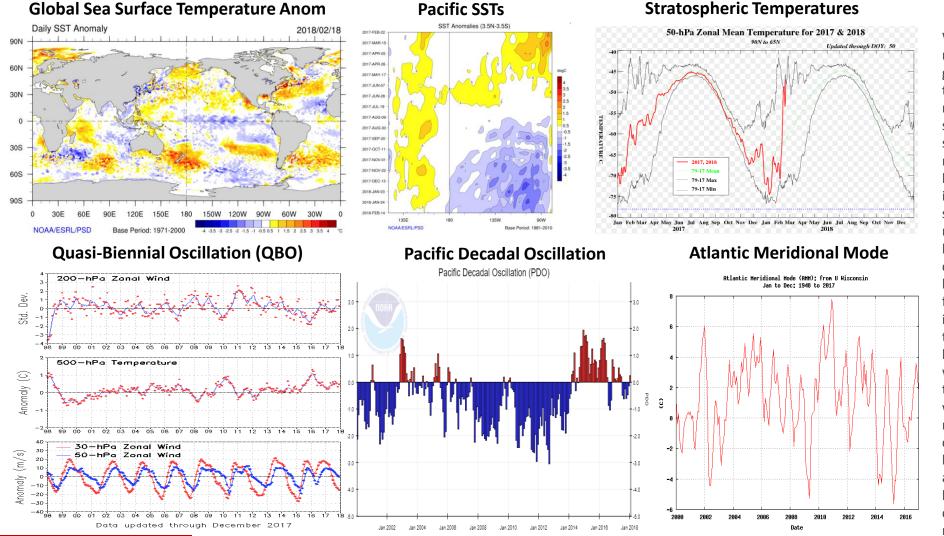
Discussion

models struggle to determine the exact orientation of blocking that sets up in the 11-15 Day time frame, but the consensus for colder than average weather continues to increase. GEFS members all favor a complete breakdown of ridging across the Southeast with a strong upper level low likely to set up across the Canadian Maritimes which will help colder weather spread in across the Ohio River Valley and into the East. Through the week we expect models to continue picking up on this, leading the first week of March to end up trending colder than average. This is shown best on the combined GEFS and GEPS 500mb output on the bottom left, where we see shockingly strong agreement between the two models on how the pattern is likely to develop through Day 15. Each show a trough across the East Coast thanks to a strong -NAO blocking regime that sets up and propagates down across much of Canada. This should not only break down any ridging in the southeast but also allow for cold bottled up across Canada to spill across the country and pull heating demand nationally below average. Exactly how strong this cold eventually is able to get and where it is oriented remains a bit uncertain, and models may bounce around with that as strong blocking does tend to increase uncertainties in the long-range, but the bias is certainly towards adding more heating demand in long-range forecasts through the week.

Seasonal Trends: SLIGHTLY BULLISH

Next Slide

Section Summary: Forecasts for the month of March have a decent amount of cold risk focused primarily across the Midwest. There remain uncertainties across the East as to how much cold can build, and we should see weather-driven demand ease into late March and April. However, with neutral ENSO conditions likely coming on by early summer we continue to see risks for cooling demand to impress by May and June, keeping seasonal weather expectations a bit more on the bullish side.



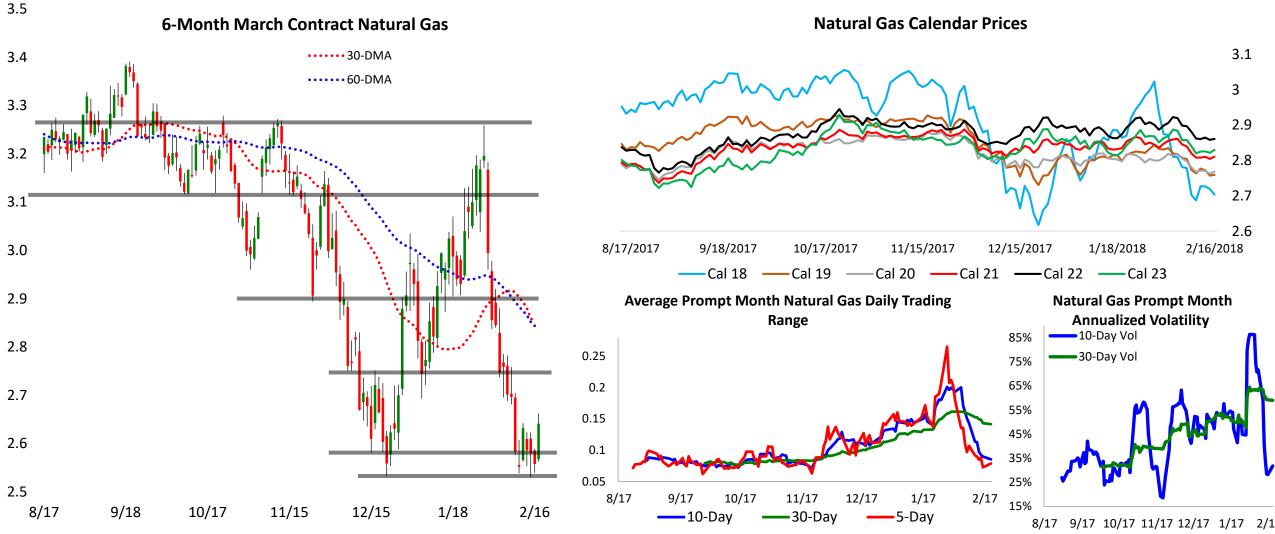
Discussion

Weak La Nina conditions continue to persist across the middle of the Pacific, though these are forecast to gradually decrease in intensity as we move through the spring and into the summer. Meanwhile, we have recently observed a very significant sudden stratospheric warming event which has split the stratospheric polar vortex and should have impacts on northern hemispheric weather patterns through at least the next few weeks. Though, per usual, the impacts across North America are delayed from this stratospheric warming event, it has increased cold risks through the month of March where significant blocking across Canada and Greenland should trap cold air across portions of the United States. This keeps cold risks in the forecast through at least the first half of March, and potentially a bit longer. Later in March into April we do expect the base Nina state to take back over which should eliminate late season heating demand and ease the bullish impact of weather through the shoulder season, at least temporarily. However, we would expect that if the weak La Nina breaks down and we return to ENSO. neutral conditions that some of the signaling on our climate models for late spring and early summer could be correct in indicating significant cooling demand arriving across the South, with a warmer over colder bias for May into June. This would keep weatherdriven demand a bit above average and support natural gas prices after what may be a boring April.



Market Technicals (Price): SLIGHTLY BULLISH

Section Summary: March natural gas prices bounced off \$2.55 support finally and broke above the \$2.62 level overnight last night, seeming to put the \$2.7-\$2.75 level back in play overhead. Despite weak losses last week the rest of the natural gas curve was relatively firm as the market remained tight, seeming to provide room for prices to rally off any colder weather additions as well. Volatility has fallen off and trading ranges are smaller, but the technical bias appears bullish for now.

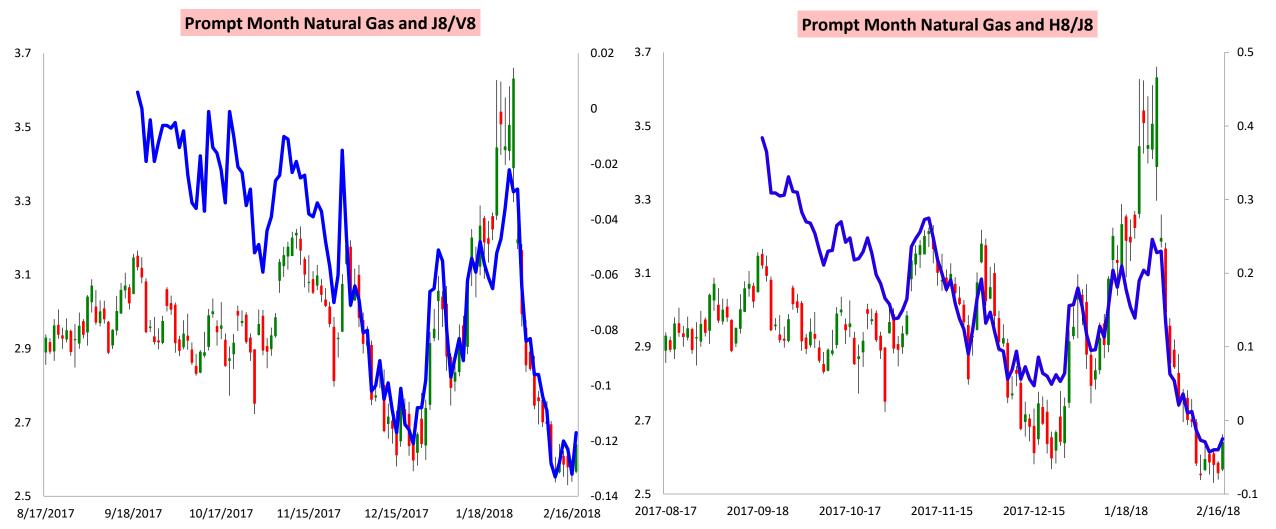


Market Technicals (Spreads): NEUTRAL

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Next Slide

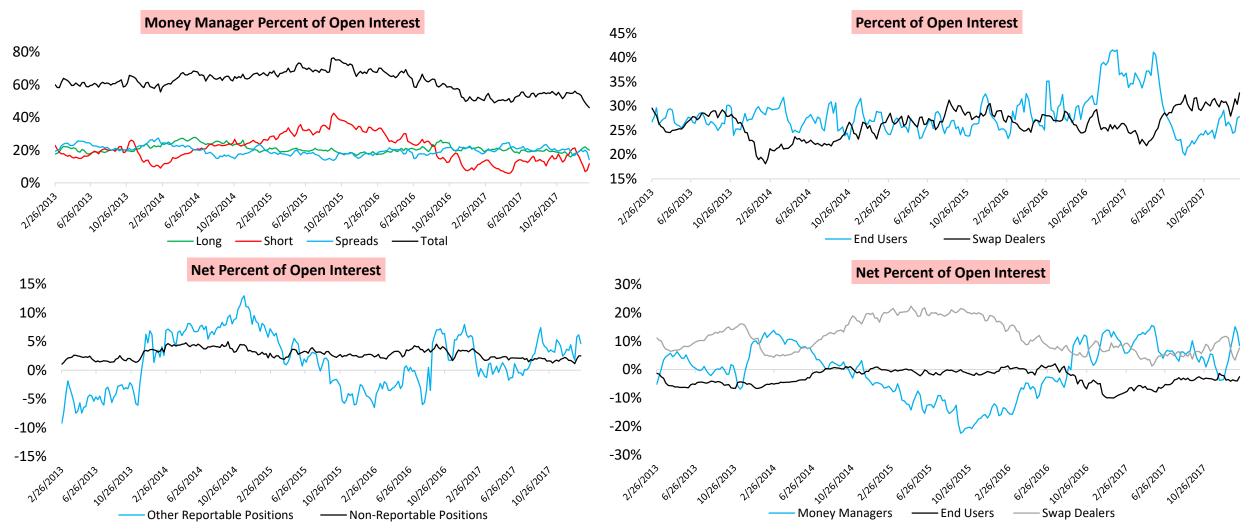
Key Takeaway: H/J has weakly begun to recover on some bullish weather risks, though it remains in contango. More noticeably, J/V has moved back out of its more narrow range recently, which would seem to allow for more upside if that were to rally on bullish weather concerns as well. Storage levels do remain below average, and if either production growth lags or weather appears to be a bit more supportive we could still see this spread recover decently in the short-term.





Market Technicals (Positioning): **SLIGHTLY BEARISH**

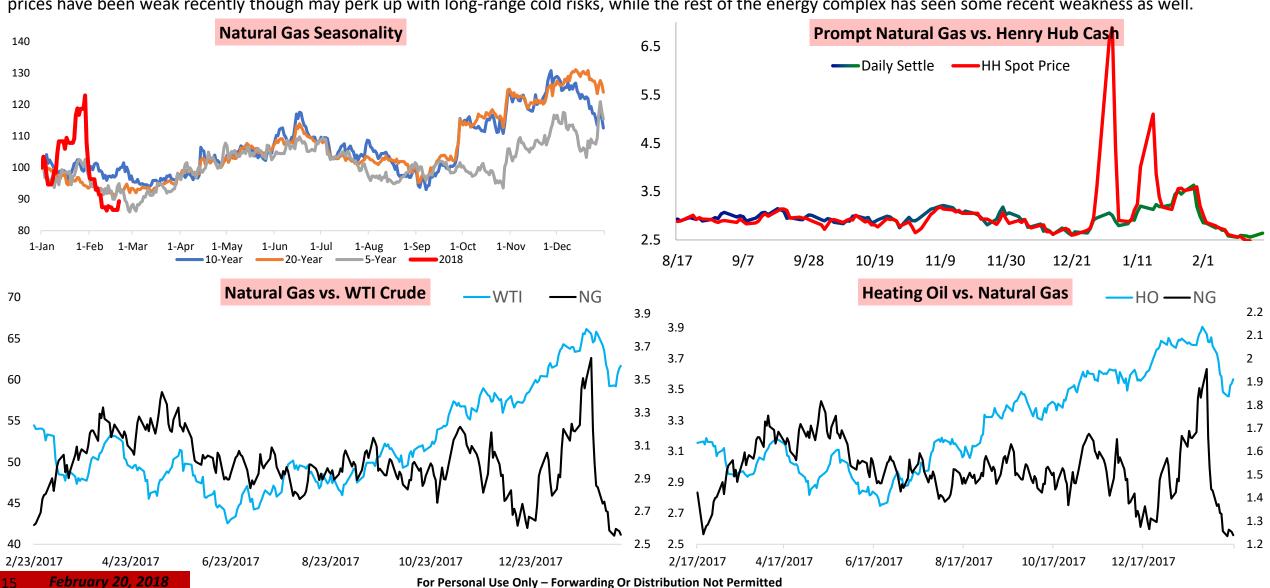
Key Takeaway: Despite selling over the last few weeks we have not seen short interest by money managers tick up that much, seemingly indicating that they could gain further short exposure should we see more bearish fundamental or weather-driven developments. Their net long positions have decreased recently, as one would expect with recent selling, but many longs may remain trapped at these lower levels, which would open up downside on any further bearish trends.





Market Technicals (Other): NEUTRAL

Key Takeaway: Seasonally natural gas prices rally a bit into the end of February before selling again in March, leading to a rather mixed technical picture here. Cash prices have been weak recently though may perk up with long-range cold risks, while the rest of the energy complex has seen some recent weakness as well.



Bespoke Weather Services, LLC believes all information contained in this report to be accurate, but we do not guarantee its accuracy. None of the information in this report or any opinions expressed constitutes a solicitation of the purchase or sale of any securities or commodities.

Key:

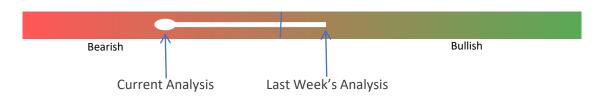
CFSv2: American climate model guidance

CPC: Climate Prediction Center

Analog: Previously occurring weather pattern that has similarities to the current one

GEFS: Global Ensemble Forecasting System, American modeling guidance

Teleconnections: Atmospheric indices that measure expected orientation both of upper and lower levels of the atmosphere (ie. MJO, NAO, AO, PNA, etc.)



MJO: Madden/Julian Oscillation, a measure of global convection (storminess) placement

GWDDs: Gas Weighted Degree Days (calculated by combining Population Weighted Cooling Degree Days (PWCDDs) with Utility Gas Weighted Heating Degree Days (UGWHDDs)

EIA Forecasts: Our forecast for the weekly change in natural gas stockpiles, going out three or four weeks

Note: All above information is part of this informational key, and is not updated daily.