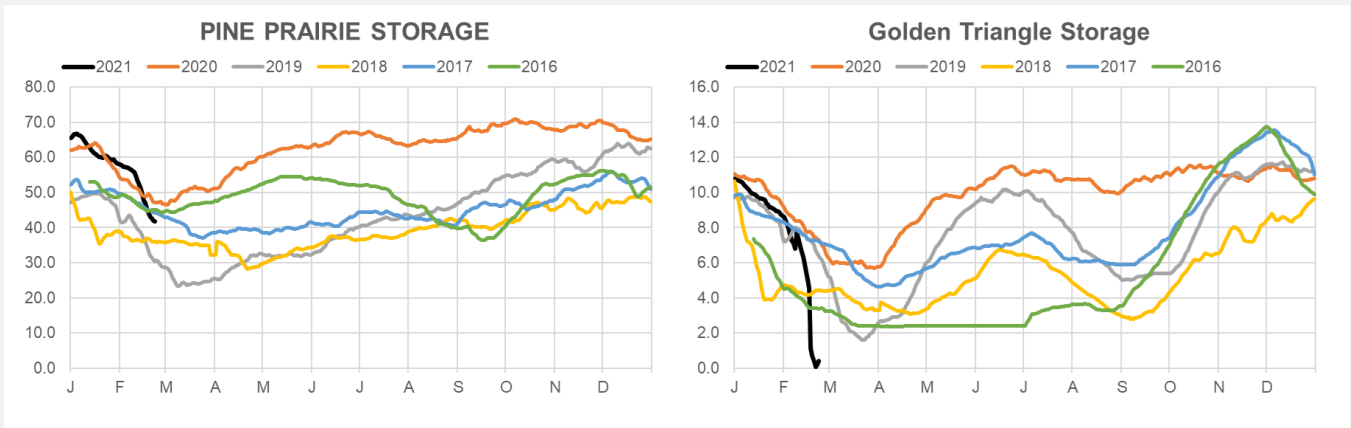


We are coming off the second-largest storage draw on record. The 338 draw was within expectations, and after a wild month of price volatility the market brushed off the draw. Interestingly, salt storage drew 83 Bcf which was the largest draw from this category on record. The previous record was a 78 Bcf draw for the week ending Jan 5, 2018, which was the week we drew 359 across the L48.

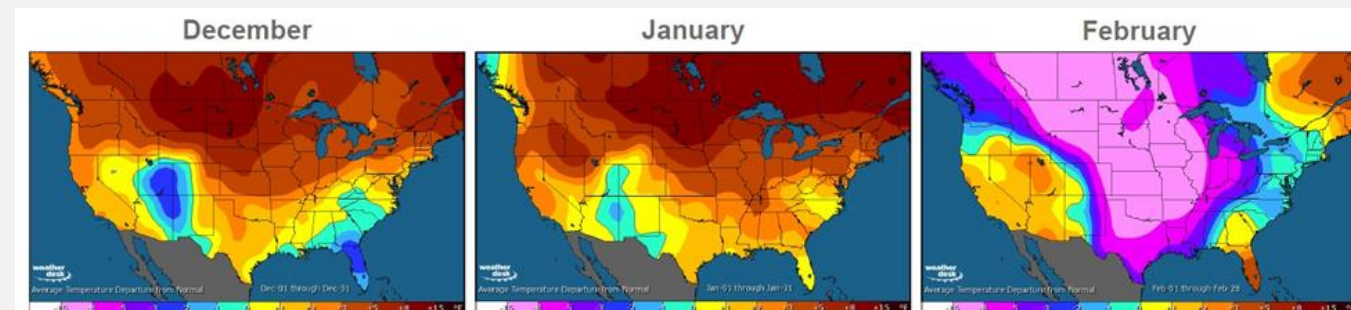
According to the US Govt, there are 38 salt storage facilities across the US. There are two in the Midwest, two in the East, and the rest in the South Central region. The total working gas capacity is 488 Bcf, with max deliverability of 36 Bcf/d. We did not get anywhere close to the max deliverability, but the value of the salt storage assets is only recognized when you have a cold event like this, i.e. a major cold event in the back end of winter.

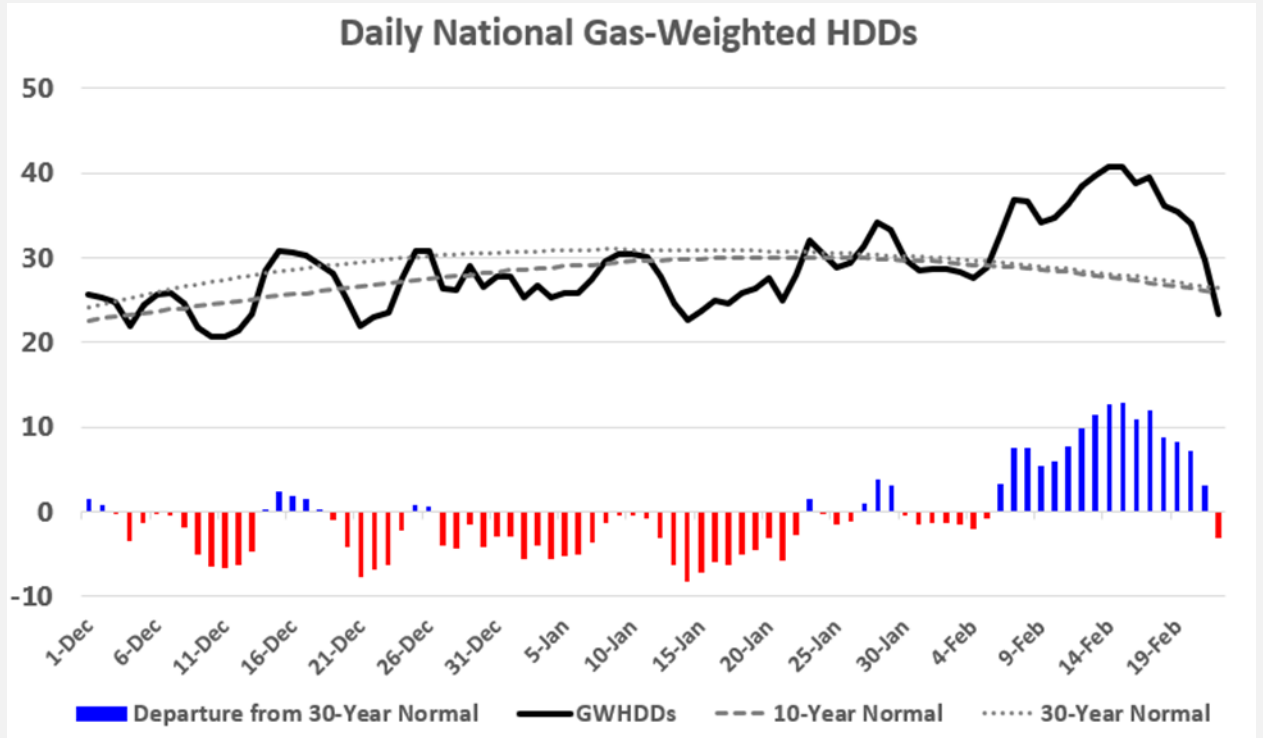
[\[The natural gas storage facilities file is attached\]](#)

We have daily visibility to two salt storage facilities through the scrapes – Pine Prairie and Golden Triangle. As can be seen, both exercised their high deliverability (especially Golden Triangle).

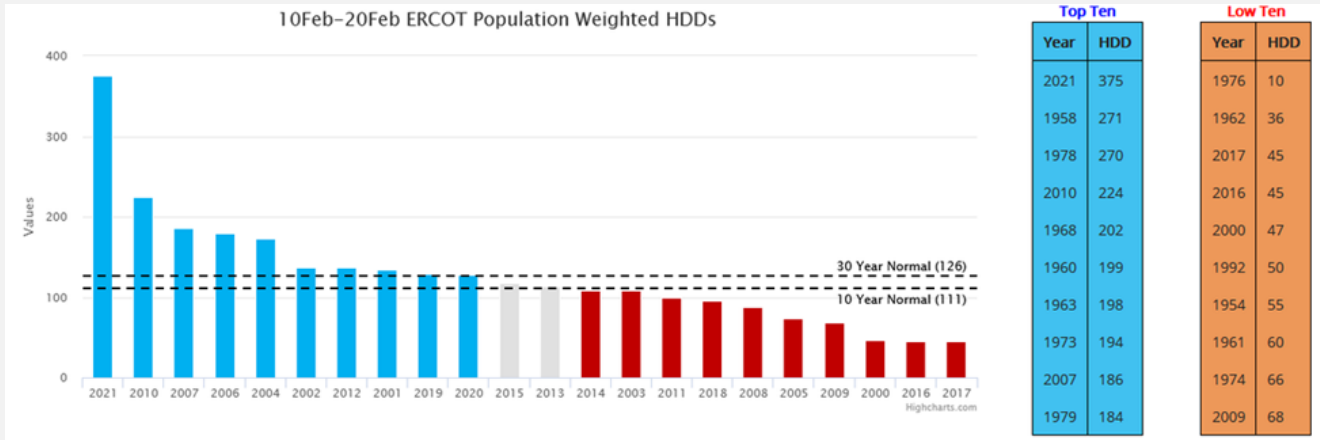


For the rest of the report, we will focus on forward-looking weather after having generally a warm winter, except for the Feb episode. This chart and map from Maxar shows how this winter has trended. Taking out the Feb 10-20 extreme weather event, and this would have been one of the warmest winters on record.



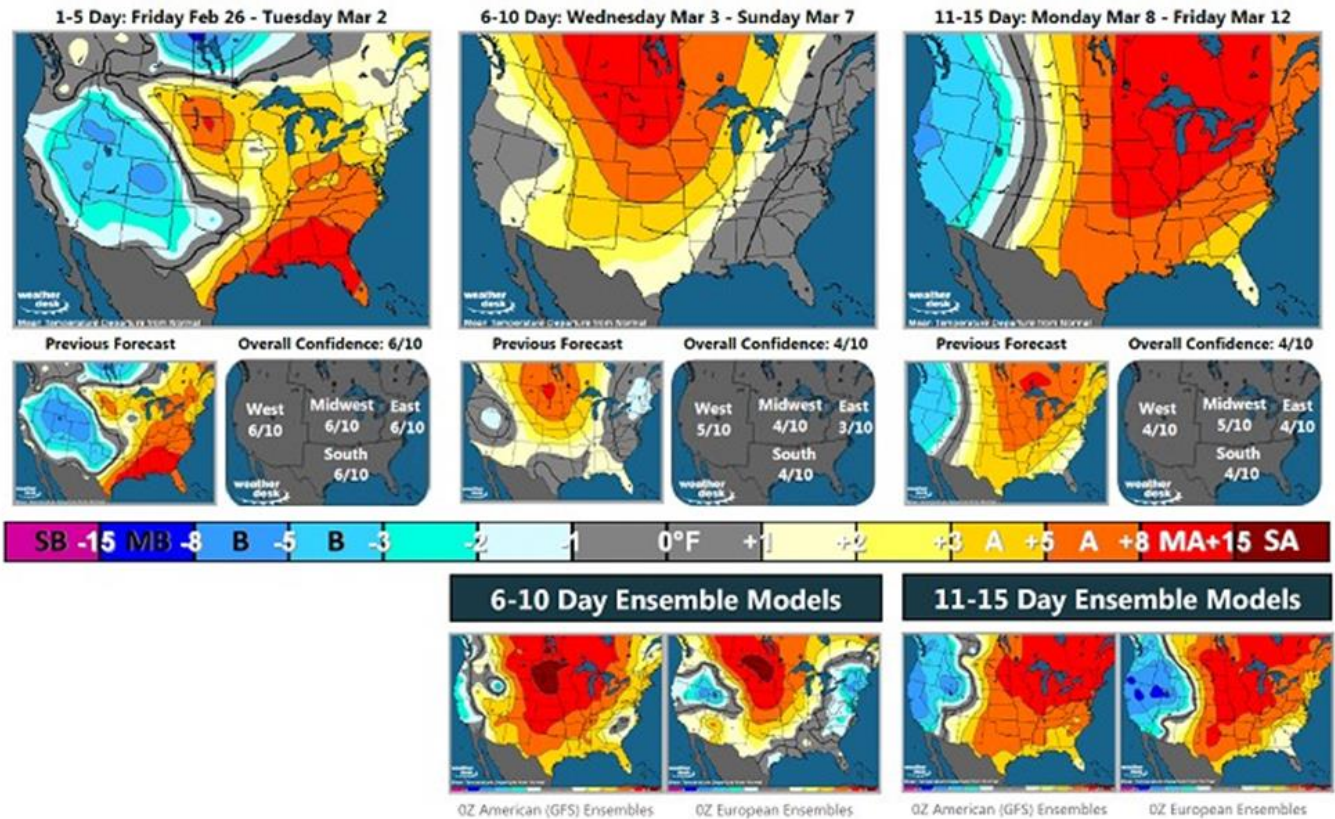


The graphic below shows just how the Feb 10-20 window was by far the coldest on record for mid-Feb. 2010 was the only other recent year that was comparable, but even that comparison is a stretch.



Let's look forward to March and beyond.

Weather looks to be making one last bearish move to end winter. While March is not as key, it still does matter if it is strong to one side or the other. This is especially true this winter with end-of-season storage projections showing a significant deficit to recent years. In terms of GWHDDs, we see well below normal demand on the way over the next 15 days, more so in the GEFS Ensemble than the Euro Ensemble.

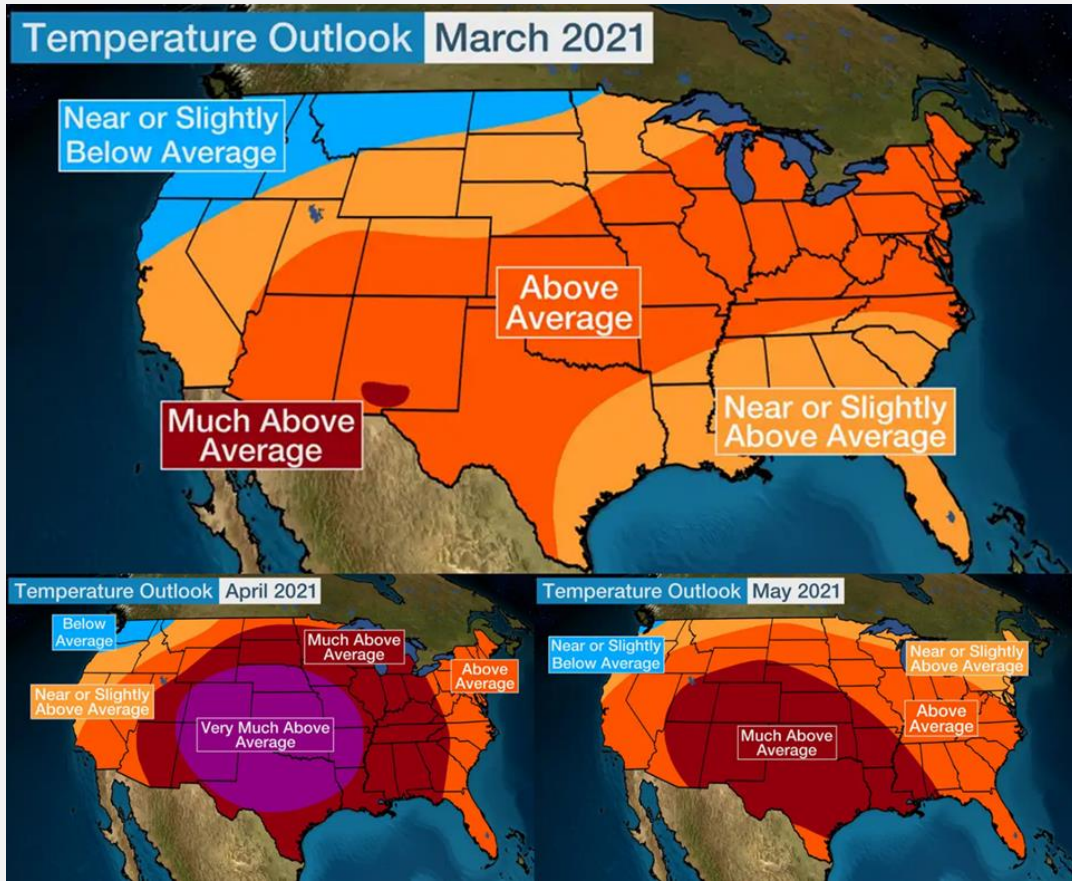


According to The Weather Company, the March-April-May could trend increasingly warmer than average across a large part of the United States. The La Nina state looks likely to persist, and the hotter climate regime is hard to bet against for early summer.

Temperatures in March are predicted to be above average from the Southwest and Southern Plains eastward to the Ohio Valley and Northeast. Most other areas could see an overall temperature trend for the month that winds up right around what is typical for this time of year.

There is some risk to this forecast. It has the potential to trend colder in later updates, especially in parts of the central and western states. Historically cool February's have led to cool conditions in March.

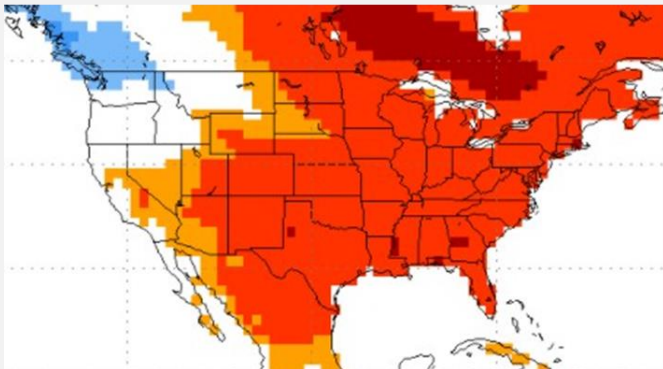
Even if the cooler temps do realize, the consensus is that April and May are warm to hot for much of the country.



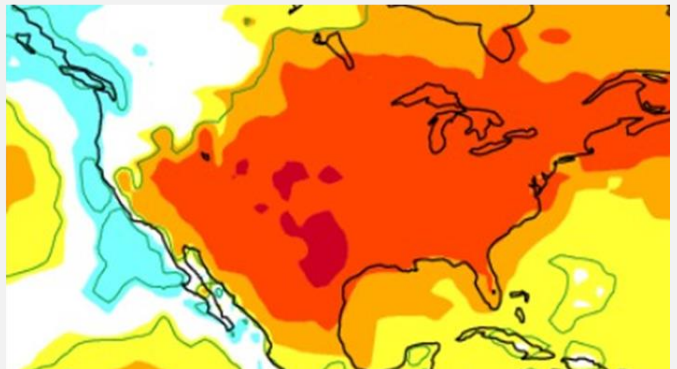
Source: The Weather Network, IBM

Below are the simulations for the same period for the CFS Outlook, and the ECMWF Outlook. Both show a very consistent outlook for the spring that could lead to some early cooling degree days (and tighter balances)

March to May  
CFS Outlook



March to May  
ECMWF Outlook



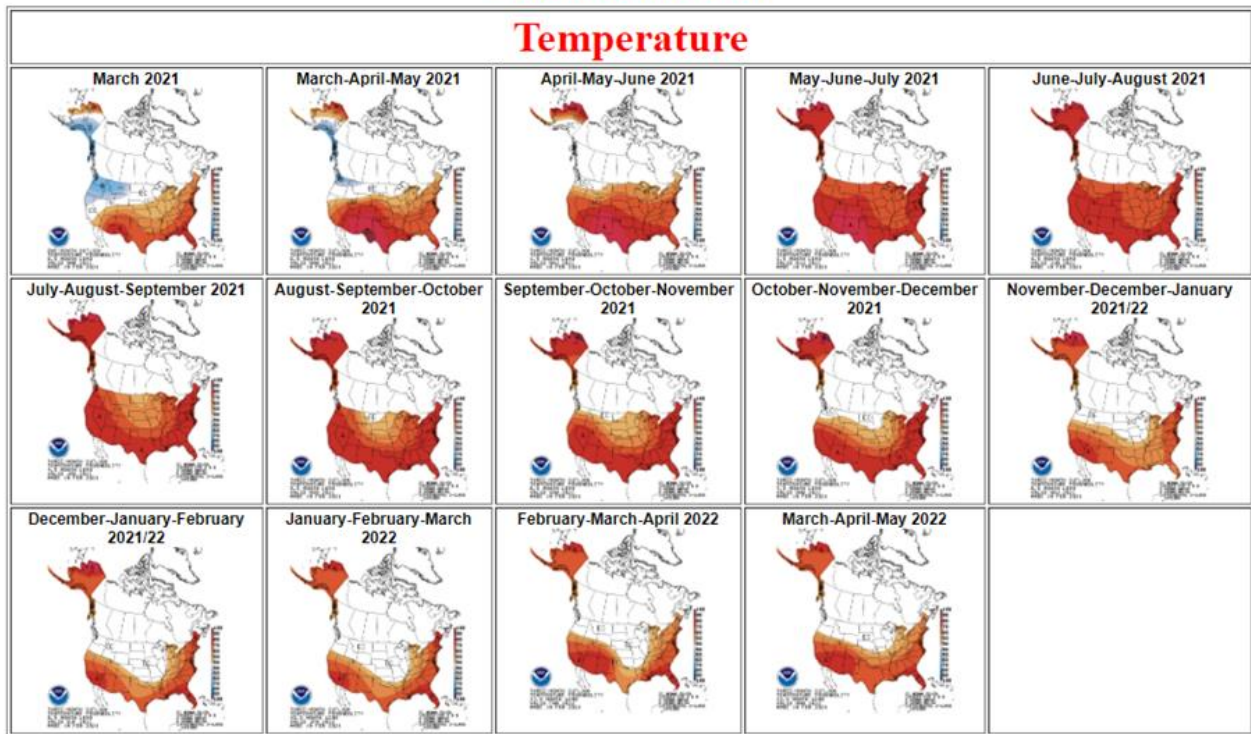
Lastly I wanted to point the readers to the longer term outlook posted by the Climate Prediction Center. The view for Mar-Apr-May is similar to the above, and the months beyond that show red across the board.

[Climate Prediction Center - Official Long-Lead Forecasts \(noaa.gov\)](https://www.noaa.gov/climate-prediction-center-official-long-lead-forecasts)

## Experimental Unofficial Long-Lead Forecasts : Two-Class Probabilities

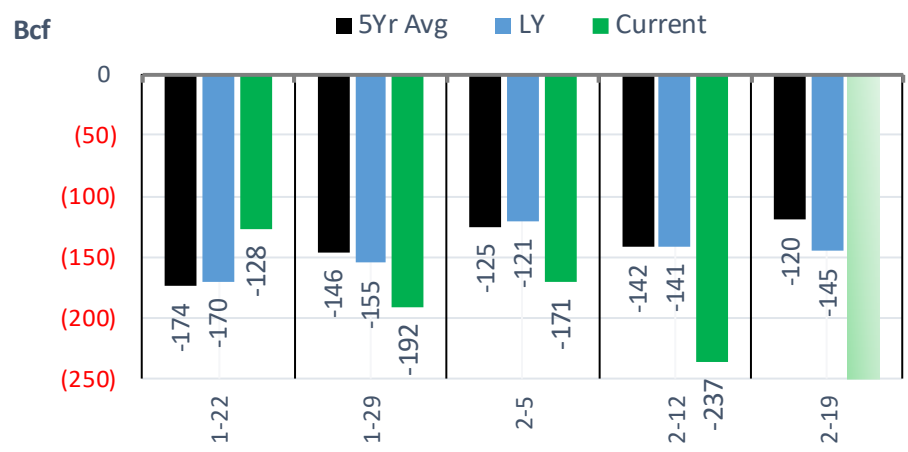
Issued: Feb 18 2021

### Temperature

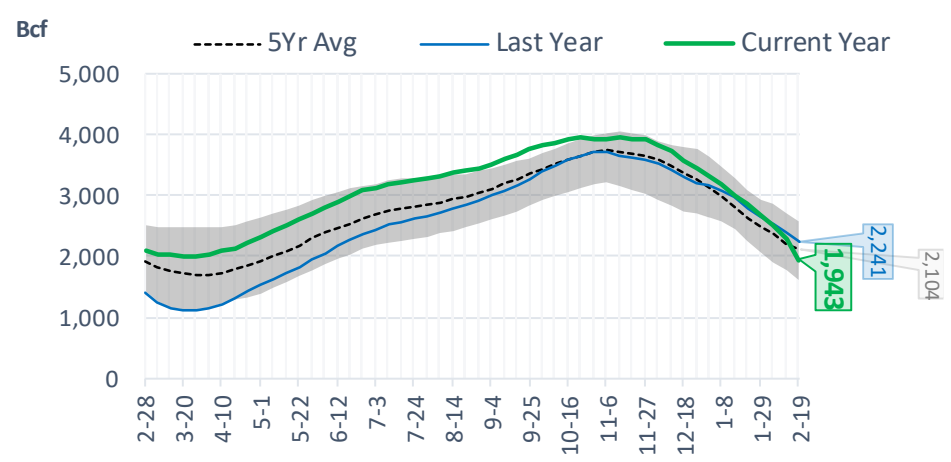


## EIA Storage Report

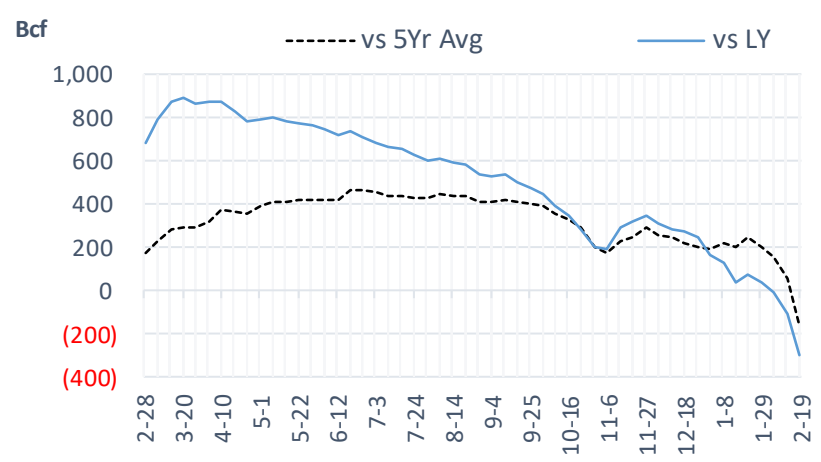
### Total Lower 48 YoY Weekly Change



### Total Lower 48 Storage Levels



### Total Lower 48 LY Surplus/Deficit

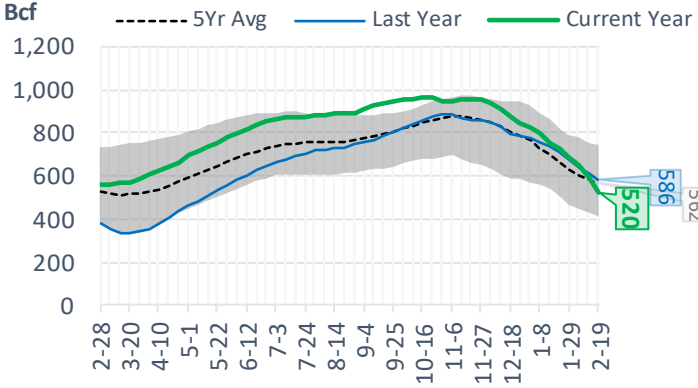


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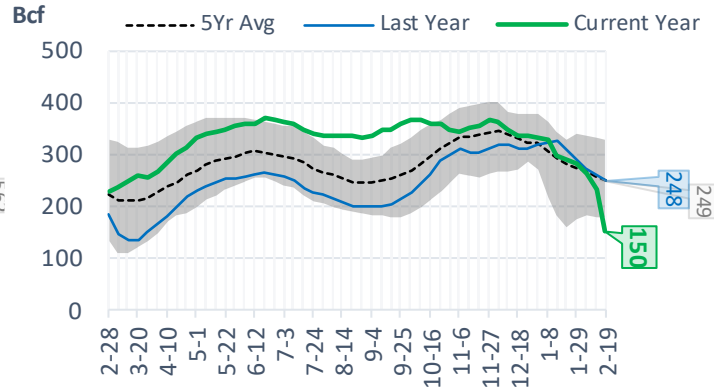
## Natural Gas Storage Stats - Last 5 Weeks

Week Ending	Current 19-Feb	Week - 1 12-Feb	Week - 2 5-Feb	Week - 3 29-Jan	Week - 4 22-Jan	Week - 5 15-Jan
<b>Total Lower 48 Storage Level</b>	<b>1943</b>	2281	2518	2689	2881	3009
<b>Weekly Change</b>	<b>-338</b>	-237	-171	-192	-128	-187
<b>vs LY</b>	<b>-298</b>	-105	-9	+41	+78	+36
<b>vs 5Yr Avg</b>	<b>-161</b>	+57	+152	+198	+244	+198
<b>S. Central Salt Storage Level</b>	<b>150</b>	233	261	281	288	296
<b>Weekly Change</b>	<b>-83</b>	-28	-20	-7	-8	-31
<b>vs LY</b>	<b>-98</b>	-27	-11	-5	-18	-30
<b>vs 5Yr Avg</b>	<b>-99</b>	-25	-8	+9	+8	+3
<b>S. Central NonSalt Storage Level</b>	<b>520</b>	593	654	689	726	755
<b>Weekly Change</b>	<b>-73</b>	-61	-35	-37	-29	-44
<b>vs LY</b>	<b>-66</b>	-20	+13	+18	+17	+13
<b>vs 5Yr Avg</b>	<b>-42</b>	+14	+50	+60	+64	+56
<b>Midwest Storage Level</b>	<b>508</b>	589	666	719	780	828
<b>Weekly Change</b>	<b>-81</b>	-77	-53	-61	-48	-51
<b>vs LY</b>	<b>-97</b>	-66	-37	-16	+4	+3
<b>vs 5Yr Avg</b>	<b>-29</b>	+11	+40	+49	+62	+55
<b>East Storage Level</b>	<b>424</b>	485	529	582	641	679
<b>Weekly Change</b>	<b>-61</b>	-44	-53	-59	-38	-47
<b>vs LY</b>	<b>-72</b>	-54	-48	-27	-14	-23
<b>vs 5Yr Avg</b>	<b>-16</b>	+3	+4	+20	+36	+26
<b>Mountain Storage Level</b>	<b>123</b>	137	150	158	170	176
<b>Weekly Change</b>	<b>-14</b>	-13	-8	-12	-6	-12
<b>vs LY</b>	<b>+12</b>	+17	+21	+20	+25	+22
<b>vs 5Yr Avg</b>	<b>+4</b>	+12	+18	+18	+22	+20
<b>Pacific Storage Level</b>	<b>218</b>	244	257	261	275	275
<b>Weekly Change</b>	<b>-26</b>	-13	-4	-14	0	-3
<b>vs LY</b>	<b>+21</b>	+45	+53	+51	+62	+51
<b>vs 5Yr Avg</b>	<b>+21</b>	+41	+48	+43	+50	+39

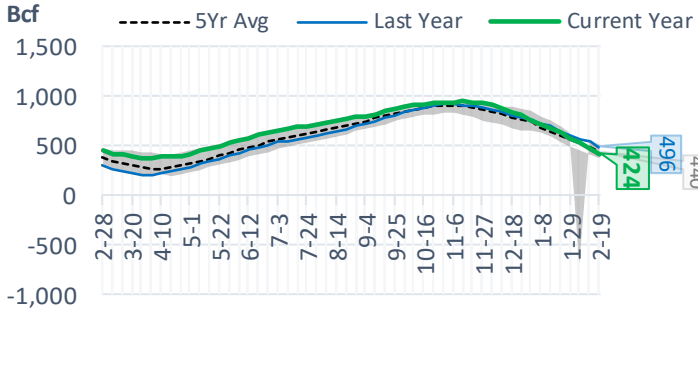
## NonSalt Storage Levels



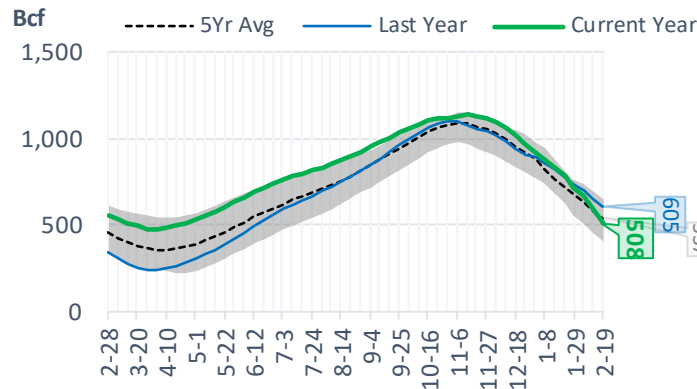
## Salt Storage Levels



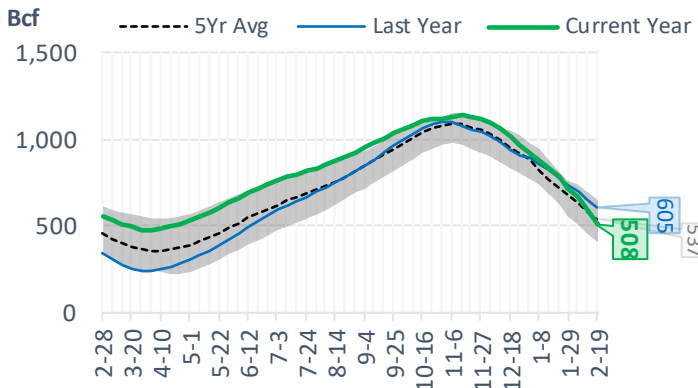
## East Storage Levels



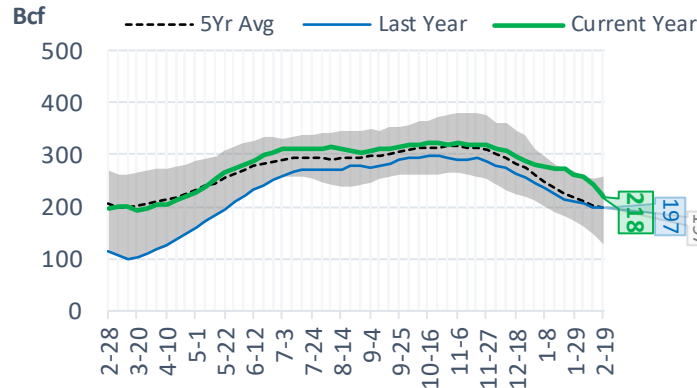
## Midwest Storage Levels



## Midwest Storage Levels



## Pacific Storage Levels





## EIA Storage Week Balances

	22-Jan	29-Jan	5-Feb	12-Feb	19-Feb	26-Feb	WoW	vs. 4W
<b>Lower 48 Dry Production</b>	<b>91.5</b>	<b>91.8</b>	<b>91.8</b>	<b>91.3</b>	<b>77.5</b>	<b>85.9</b>	▲ 8.4	▼ -2.2
<b>Canadian Imports</b>	<b>5.9</b>	<b>6.4</b>	<b>6.3</b>	<b>6.3</b>	<b>7.8</b>	<b>6.2</b>	▼ -1.6	▼ -0.5
L48 Power	27.8	28.7	28.9	28.8	30.3	25.3	▼ -4.9	▼ -3.8
L48 Residential & Commercial	41.6	47.5	46.6	52.2	59.6	41.6	▼ -18.0	▼ -9.9
L48 Industrial	22.4	25.0	23.0	25.2	25.4	25.5	▲ 0.2	▲ 0.9
L48 Lease and Plant Fuel	5.0	5.1	5.1	5.0	4.3	4.7	▲ 0.5	▼ -0.1
L48 Pipeline Distribution	3.1	3.5	3.4	3.6	4.0	3.0	▼ -1.0	▼ -0.6
<b>L48 Regional Gas Consumption</b>	<b>99.9</b>	<b>109.7</b>	<b>107.0</b>	<b>114.9</b>	<b>123.6</b>	<b>100.2</b>	▼ -23.4	▼ -13.6
<b>Net LNG Exports</b>	<b>10.4</b>	<b>10.0</b>	<b>10.7</b>	<b>10.7</b>	<b>4.9</b>	<b>7.8</b>	▲ 2.9	▼ -1.3
<b>Total Mexican Exports</b>	<b>6.1</b>	<b>6.6</b>	<b>6.2</b>	<b>6.4</b>	<b>4.9</b>	<b>5.8</b>	▲ 0.8	▼ -0.2
<b>Implied Daily Storage Activity</b>	<b>-19.0</b>	<b>-28.0</b>	<b>-25.7</b>	<b>-34.4</b>	<b>-48.1</b>	<b>-21.6</b>	26.4	
<b>EIA Reported Daily Storage Activity</b>	<b>-18.3</b>	<b>-27.4</b>	<b>-24.4</b>	<b>-33.9</b>	<b>-48.3</b>			
<b>Daily Model Error</b>	<b>-0.7</b>	<b>-0.6</b>	<b>-1.2</b>	<b>-0.6</b>	<b>0.2</b>			

## Monthly Balances

	2Yr Ago Feb-19	LY Feb-20	Dec-17	Jan-18	Dec-20	Jan-21	MTD Feb-21	MoM	vs. LY
<b>Lower 48 Dry Production</b>	<b>87.9</b>	<b>93.6</b>	<b>78.6</b>	<b>77.0</b>	<b>91.9</b>	<b>91.7</b>	<b>86.3</b>	▼ -5.5	▲ 9.3
<b>Canadian Imports</b>	<b>4.9</b>	<b>5.3</b>	<b>5.6</b>	<b>5.9</b>	<b>5.8</b>	<b>6.3</b>	<b>6.5</b>	▲ 0.3	▲ 0.7
L48 Power	27.5	30.2	25.2	25.3	28.1	28.7	28.2	▼ -0.5	▲ 2.9
L48 Residential & Commercial	45.3	40.2	42.8	48.9	40.0	44.4	49.7	▲ 5.3	▲ 0.8
L48 Industrial	23.6	25.2	24.8	23.8	24.0	23.4	25.0	▲ 1.7	▲ 1.3
L48 Lease and Plant Fuel	4.9	5.2	4.7	4.3	5.1	5.1	4.8	▼ -0.3	▲ 0.4
L48 Pipeline Distribution	3.3	3.2	2.7	3.2	3.1	3.3	3.5	▲ 0.2	▲ 0.3
<b>L48 Regional Gas Consumption</b>	<b>104.5</b>	<b>104.0</b>	<b>100.1</b>	<b>105.5</b>	<b>100.3</b>	<b>104.9</b>	<b>111.2</b>	▲ 6.3	▲ 5.7
<b>Net LNG Exports</b>	<b>4.1</b>	<b>8.5</b>	<b>3.0</b>	<b>2.2</b>	<b>11.0</b>	<b>10.5</b>	<b>8.3</b>	▼ -2.2	▲ 6.1
<b>Total Mexican Exports</b>	<b>4.9</b>	<b>5.2</b>	<b>4.1</b>	<b>4.2</b>	<b>5.8</b>	<b>6.1</b>	<b>5.8</b>	▼ -0.4	▲ 1.6
<b>Implied Daily Storage Activity</b>	<b>-20.8</b>	<b>-18.8</b>	<b>-22.8</b>	<b>-29.1</b>	<b>-19.5</b>	<b>-23.5</b>	<b>-32.5</b>		
<b>EIA Reported Daily Storage Activity</b>									
<b>Daily Model Error</b>									

Source: Bloomberg, analytix.ai

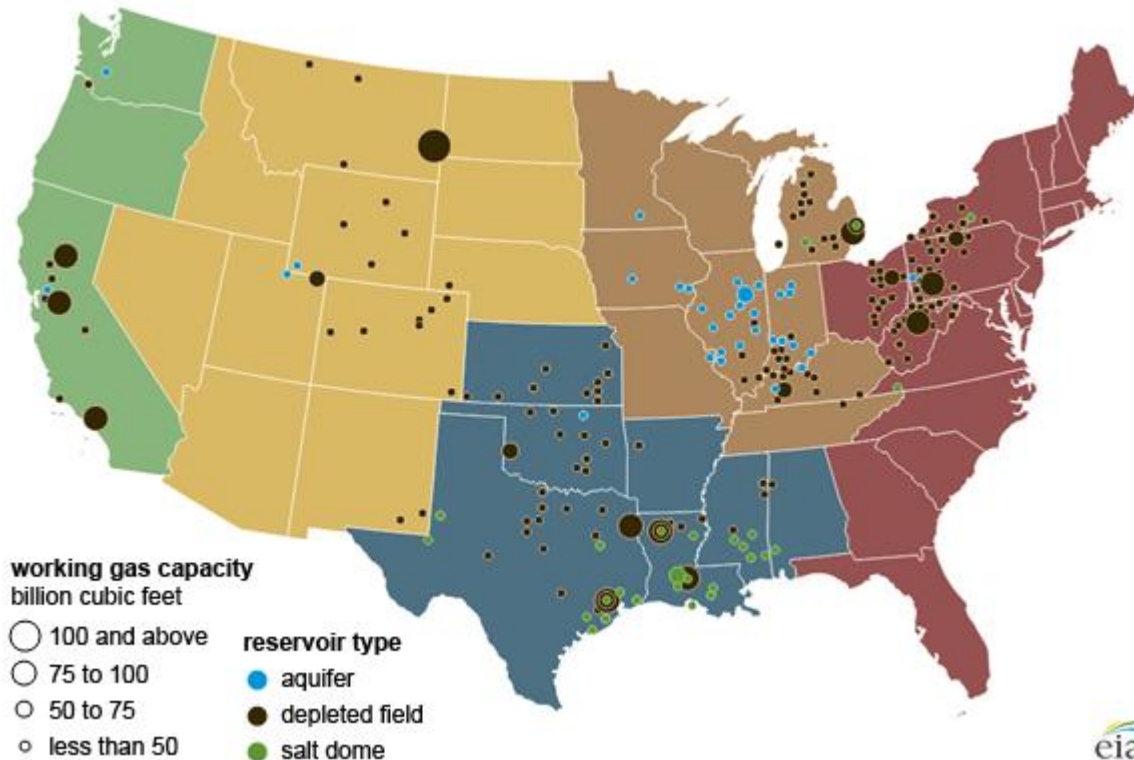
## Regional S/D Models Storage Projection

Week Ending 26-Feb

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-21.9	0.6	-21.4	-150
East	-9.2	3.6	-5.6	-39
Midwest	-6.6	-0.4	-7.0	-49
Mountain	2.2	-2.6	-0.4	-3
South Central	-7.2	0.3	-6.8	-48
Pacific	-1.1	-0.4	-1.5	-11

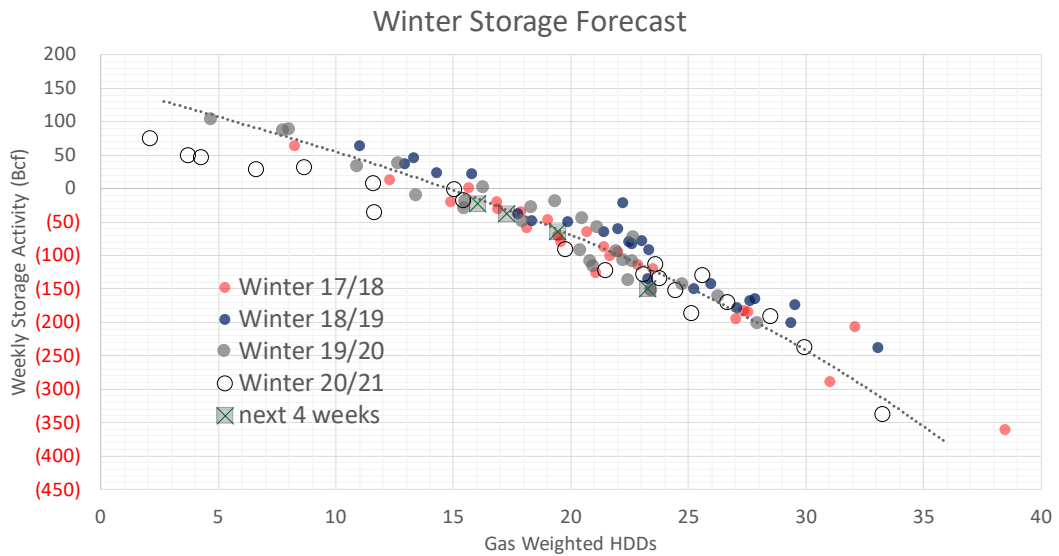
\*Adjustment Factor is calculated based on historical regional deltas

U.S. underground natural gas storage facilities by type (July 2015)



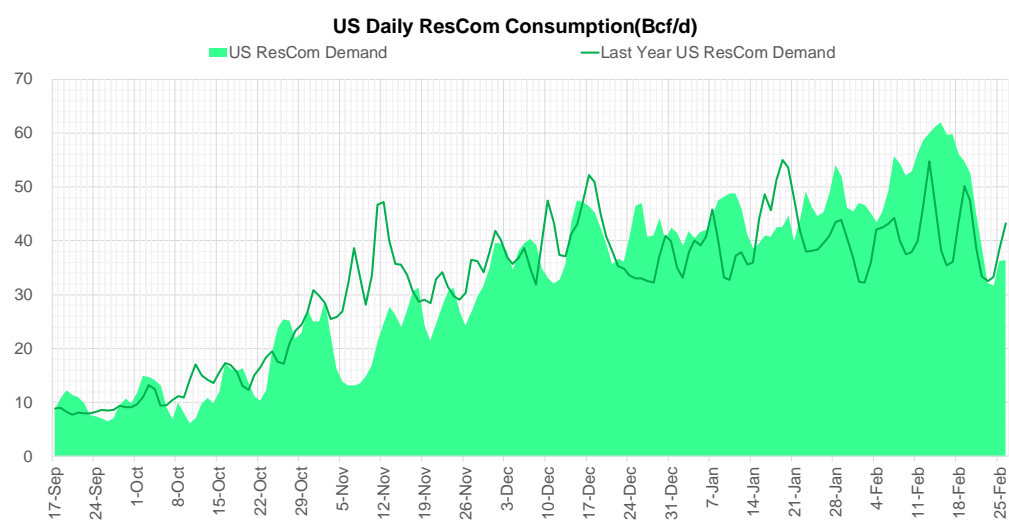
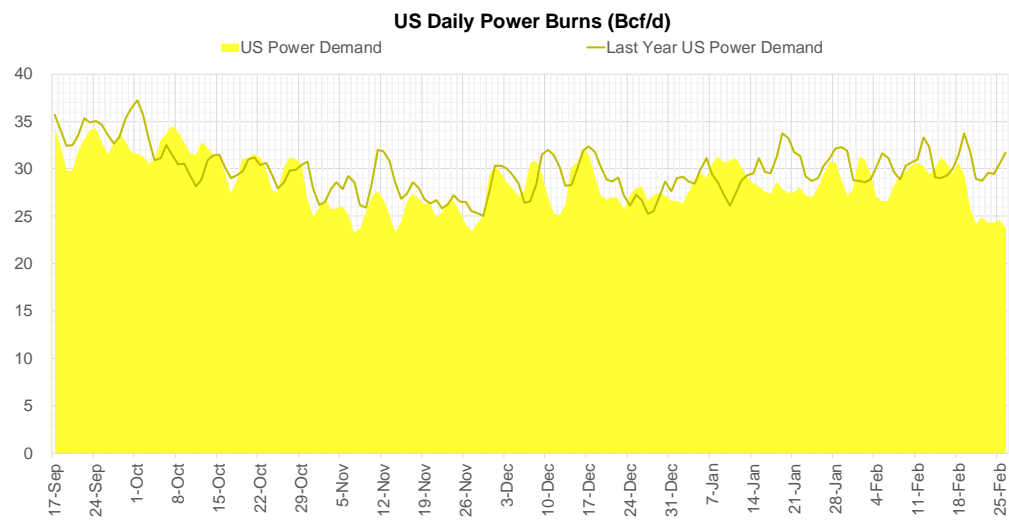
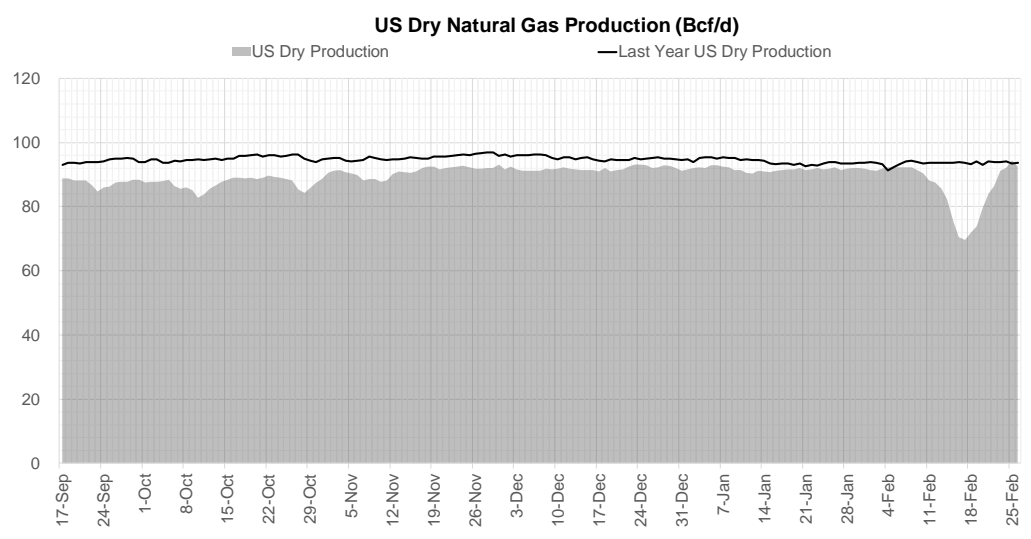
## Weather Model Storage Projection

Next report and beyond		
Week Ending	Temp	Week Storage Projection
05-Mar	19.5	-64
12-Mar	17.3	-36
19-Mar	16.0	-23



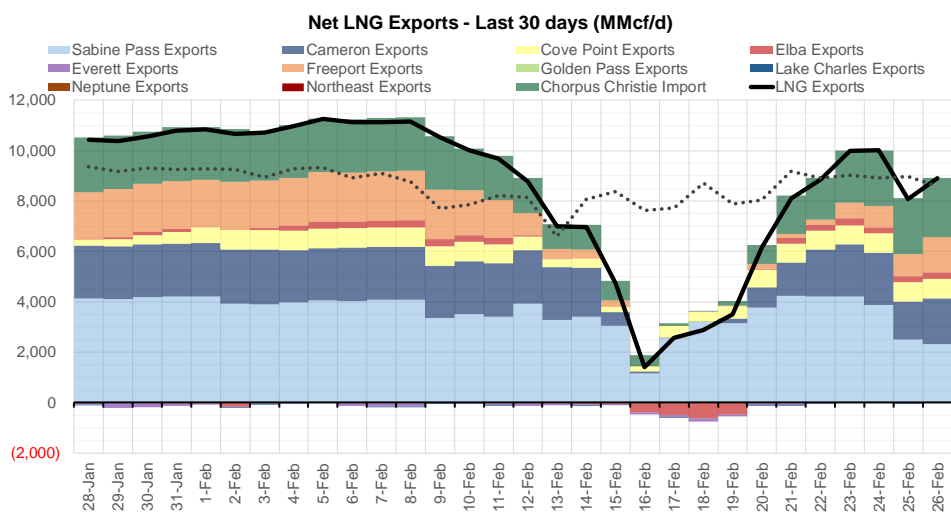
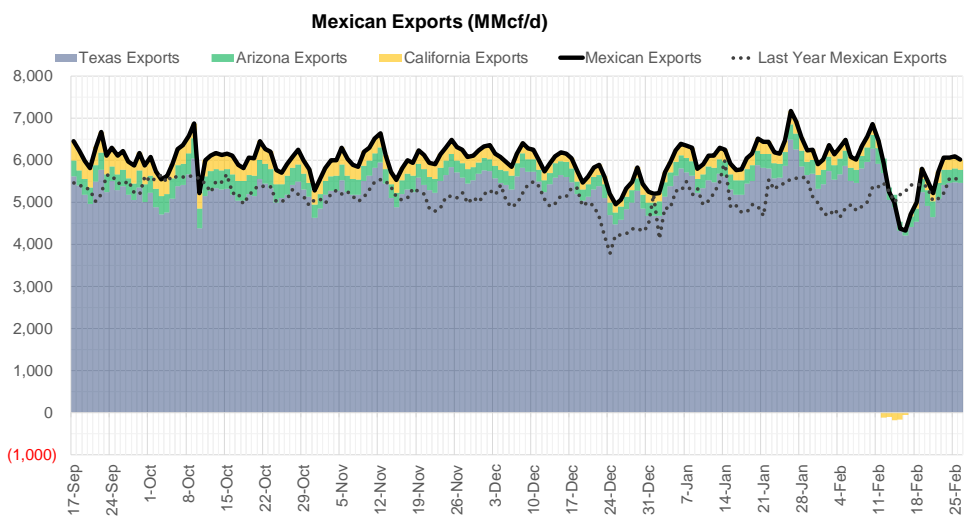
Note: this is not our official end of season forecast. This chart signifies where storage levels end with 10-year normal weather and current market tightness relative to last year

## Supply – Demand Trends



Source: Bloomberg

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Source: Bloomberg

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## Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

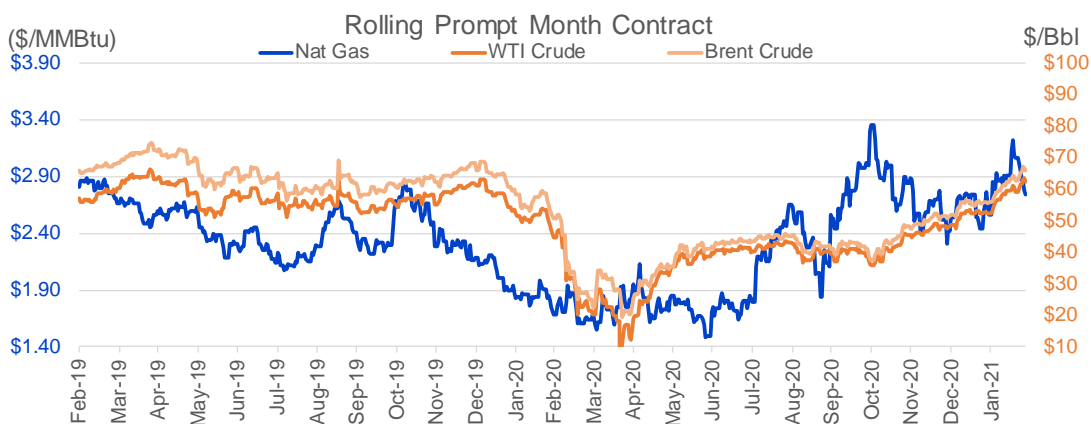
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
4	2021	C	3.25	26251	4	2021	C	3.00	55908
4	2021	C	3.00	14757	4	2021	C	4.00	53285
4	2021	P	2.50	7740	10	2021	C	4.00	41308
10	2021	C	5.00	7582	4	2021	P	2.50	40770
8	2021	C	3.50	5708	4	2021	C	3.25	32457
8	2021	C	4.00	5051	10	2021	C	3.25	28011
5	2021	C	3.00	4917	4	2021	P	2.00	27831
4	2021	P	2.80	4783	6	2021	C	4.00	27776
4	2021	P	2.25	4455	8	2021	C	4.00	27373
5	2021	C	3.25	4194	7	2021	C	4.00	26797
10	2021	C	4.00	3827	4	2021	C	3.50	25221
5	2021	C	3.50	3814	5	2021	P	2.50	24771
5	2021	C	4.00	3504	5	2021	C	3.00	24392
5	2021	P	2.50	3380	4	2021	P	2.75	22655
4	2021	C	3.10	3082	5	2021	C	4.00	21673
4	2021	P	2.60	2796	4	2021	C	2.75	21182
5	2021	C	2.75	2650	4	2021	C	5.00	20483
5	2021	P	2.60	2627	4	2021	P	2.25	20270
4	2021	C	2.75	2395	8	2021	P	2.25	19933
4	2021	P	2.30	2379	10	2021	C	5.00	19646
6	2021	C	2.75	2266	5	2021	C	3.50	19478
7	2021	C	2.75	2200	10	2021	C	3.50	19158
8	2021	C	2.75	2200	8	2021	C	3.50	19135
9	2021	C	2.75	2200	6	2021	P	2.50	18916
10	2021	C	2.75	2200	9	2021	P	2.00	18596
5	2021	P	2.40	2162	5	2021	C	3.25	18261
4	2021	P	2.75	2092	5	2021	P	2.00	18182
4	2021	C	3.35	2014	6	2021	C	3.50	18103
5	2021	P	2.25	1928	10	2021	P	2.00	18007
4	2021	C	3.50	1916	4	2022	C	3.00	17683
3	2022	C	5.00	1900	10	2021	C	3.00	17316
6	2021	P	2.50	1875	10	2021	P	2.50	17202
4	2021	C	4.75	1800	5	2021	P	2.25	17024
3	2022	C	4.00	1750	12	2021	C	4.00	16832
5	2021	P	2.15	1648	11	2021	C	4.00	16200
10	2021	C	3.50	1600	6	2021	P	2.00	15688
5	2021	P	2.35	1535	4	2021	C	2.50	15340
5	2021	C	3.10	1528	4	2021	C	3.75	15239
10	2021	C	3.25	1500	7	2021	P	2.00	15156
6	2021	P	2.75	1482	9	2021	C	3.50	15146
4	2021	P	2.70	1470	4	2021	P	2.60	15096
9	2021	C	3.25	1400	8	2021	P	2.00	15057
4	2021	P	2.40	1226	6	2021	P	2.25	14918
10	2021	P	2.90	1201	7	2021	C	3.50	14673
8	2021	C	3.25	1184	6	2021	C	3.00	14203
4	2021	C	3.15	1114	8	2021	P	2.50	13633
6	2021	C	3.10	1100	6	2021	C	3.25	13613
4	2021	C	2.50	1050	8	2021	C	3.25	13580
5	2021	C	2.50	1004	9	2021	C	4.00	13457
					9	2021	P	1.9	13396

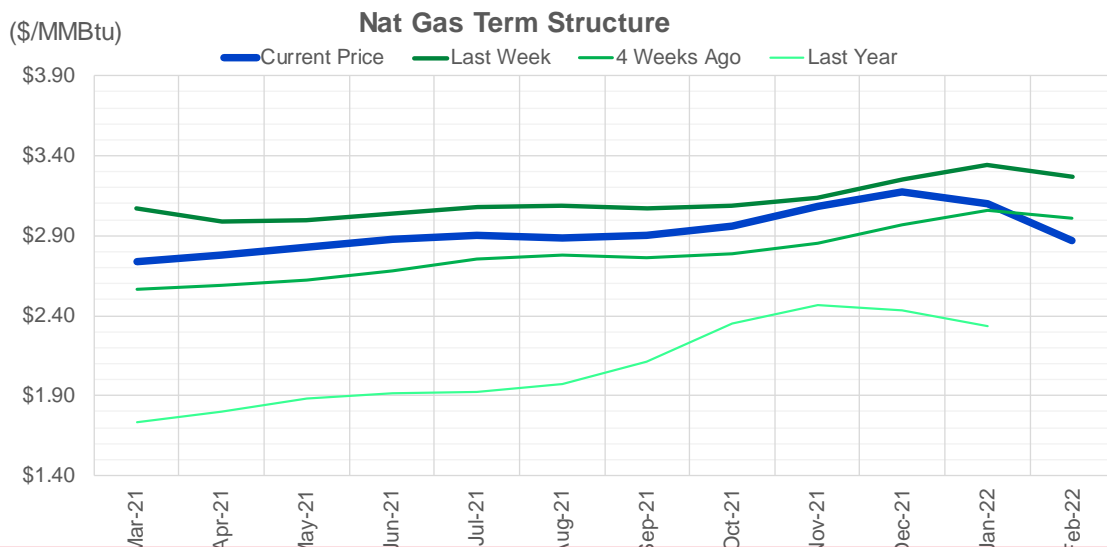
Source: CME, Nasdaq, ICE

## Nat Gas Futures Open Interest CME, ICE and Nasdaq Combined

CME Henry Hub Futures (10,000 MMBtu)				ICE Henry Hub Futures Contract Equivalent (10,000 MM			
	Current	Prior	Daily Change	FOR JUNE 26	Current	Prior	Daily Change
APR 21	184636	341	184295	APR 21	100237	72285	27952
MAY 21	210599	183127	27472	MAY 21	95502	99657	-4155
JUN 21	77557	209455	-131898	JUN 21	69462	95704	-26241
JUL 21	71239	76586	-5347	JUL 21	74060	69784	4276
AUG 21	45225	71110	-25885	AUG 21	76489	73986	2502
SEP 21	92695	45372	47323	SEP 21	70171	76394	-6223
OCT 21	130959	92123	38836	OCT 21	90996	70052	20944
NOV 21	52932	129703	-76771	NOV 21	55739	91912	-36174
DEC 21	45377	51392	-6015	DEC 21	56652	55440	1212
JAN 22	64676	45355	19321	JAN 22	55273	56269	-996
FEB 22	22089	64040	-41951	FEB 22	40046	55466	-15420
MAR 22	38069	23731	14338	MAR 22	44046	39928	4118
APR 22	36614	37698	-1084	APR 22	43249	43852	-603
MAY 22	18010	36668	-18658	MAY 22	36067	43347	-7280
JUN 22	12680	17796	-5116	JUN 22	34476	36079	-1603
JUL 22	7623	12754	-5131	JUL 22	34807	34556	252
AUG 22	7688	7669	19	AUG 22	33805	34859	-1055
SEP 22	8351	7646	705	SEP 22	34714	33855	859
OCT 22	20080	8287	11793	OCT 22	40841	34785	6056
NOV 22	8479	21007	-12528	NOV 22	32091	40915	-8824
DEC 22	8561	8420	141	DEC 22	37129	32114	5016
JAN 23	5973	8537	-2564	JAN 23	19852	37208	-17357
FEB 23	2163	5958	-3795	FEB 23	17980	19718	-1738
MAR 23	3704	2164	1540	MAR 23	19886	17859	2027
APR 23	4927	3704	1223	APR 23	16002	19818	-3815
MAY 23	2917	4922	-2005	MAY 23	15473	15858	-386
JUN 23	881	2913	-2032	JUN 23	14745	15316	-571
JUL 23	968	877	91	JUL 23	14449	14569	-120
AUG 23	725	964	-239	AUG 23	14791	14209	581
SEP 23	557	721	-164	SEP 23	14004	14551	-547

Source: CME, ICE






	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22
<b>Current Price</b>	<b>\$2.740</b>	<b>\$2.775</b>	<b>\$2.827</b>	<b>\$2.877</b>	<b>\$2.900</b>	<b>\$2.888</b>	<b>\$2.902</b>	<b>\$2.960</b>	<b>\$3.081</b>	<b>\$3.173</b>	<b>\$3.098</b>	<b>\$2.871</b>
Last Week	\$3.069	\$2.991	\$3.001	\$3.038	\$3.079	\$3.087	\$3.073	\$3.084	\$3.135	\$3.252	\$3.343	\$3.272
vs. Last Week	-\$0.329	-\$0.216	-\$0.174	-\$0.161	-\$0.179	-\$0.199	-\$0.171	-\$0.124	-\$0.054	-\$0.079	-\$0.245	-\$0.401
4 Weeks Ago	\$2.564	\$2.592	\$2.625	\$2.683	\$2.752	\$2.775	\$2.766	\$2.790	\$2.850	\$2.972	\$3.060	\$3.008
vs. 4 Weeks Ago	\$0.176	\$0.183	\$0.202	\$0.194	\$0.148	\$0.113	\$0.136	\$0.170	\$0.231	\$0.201	\$0.038	-\$0.137
Last Year	\$1.684	\$1.732	\$1.799	\$1.881	\$1.918	\$1.926	\$1.973	\$2.113	\$2.348	\$2.462	\$2.431	\$2.338
vs. Last Year	\$1.056	\$1.043	\$1.028	\$0.996	\$0.982	\$0.962	\$0.929	\$0.847	\$0.733	\$0.711	\$0.667	\$0.533

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jan21/Apr21	\$/MMBtu	0.273	▼ -0.251	▲ 0.148	▲ 0.607
NatGas Mar21/Apr21	\$/MMBtu	-0.114	▼ -0.036	▼ -0.086	▼ -0.324
NatGas Oct21/Nov21	\$/MMBtu	0.058	▲ 0.007	▼ -0.002	▼ -0.011
NatGas Apr21/Oct21	\$/MMBtu	0.162	▲ 0.779	▲ 0.485	▼ -0.062
WTI Crude	\$/Bbl	62.41	▲ 3.170	▲ 10.210	▲ 17.650
Brent Crude	\$/Bbl	66.05	▲ 3.140	▲ 10.170	▲ 15.530
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	187.88	▲ 5.590	▲ 27.840	▲ 38.820
Propane, Mt. Bel	cents/Gallon	0.91	▼ -0.002	▲ 0.041	▲ 0.519
Ethane, Mt. Bel	cents/Gallon	0.27	▼ -0.004	▲ 0.030	▲ 0.123
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▼ -0.100
Coal, PRB	\$/MMBtu	0.70			

Source: CME, Bloomberg



## Baker Hughes Rig Counts

Rotary Rig Count						Baker Hughes 
2/26/2021						
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago	
Oil	309	4	305	-369	678	
Gas	92	1	91	-18	110	
Miscellaneous	1	0	1	-1	2	
Directional	18	2	16	-28	46	
Horizontal	359	2	357	-349	708	
Vertical	25	1	24	-11	36	
Canada Breakout	This Week	+/-	Last Week	+/-	Year Ago	
Oil	92	-8	100	-71	163	
Gas	71	-1	72	-6	77	
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago	
Ardmore Woodford	0	0	0	-4	4	
Arkoma Woodford	0	0	0	-1	1	
Barnett	1	0	1	0	1	
Cana Woodford	9	0	9	-12	21	
DJ-Niobrara	7	0	7	-13	20	
Eagle Ford	29	0	29	-39	68	
Granite Wash	0	0	0	-1	1	
Haynesville	46	0	46	3	43	
Marcellus	31	1	30	-7	38	
Mississippian	0	0	0	-2	2	
Permian	208	4	204	-203	411	
Utica	7	0	7	-4	11	
Williston	14	0	14	-39	53	