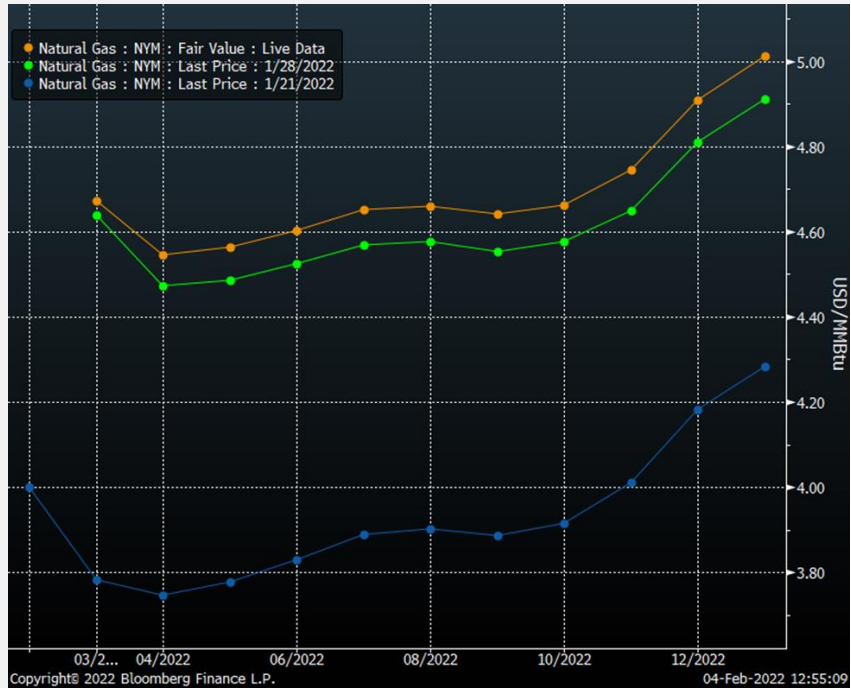


Natural gas futures have been extremely volatile this past week. Weather outlooks have been driving the conversation throughout these price moves. Not only did the March contract make some violent moves this past week, but the entire curve out to Winter 22/23 made some big shifts. The fear of a low winter storage exit has propagated through the summer and into next winter – hence some shifts higher. I think the big unknown remains to be summer production levels. After the strong production in Dec, we have only observed freeze-offs that have ruined the party.



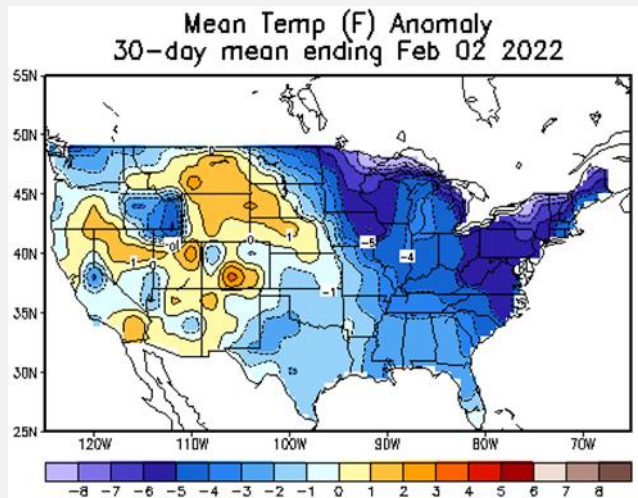
Drop me a line @ het@analytix.ai and I can share my updated winter/summer balances.

With weather driving all conversations these past few weeks, we reached out to Brian Lovern of Bespoke weather to give us more insight into what is to come.



Email Brian additional questions: brian@bespokeweather.com

After the 2nd warmest December on record, the pattern has flipped into colder mode over the last few weeks, producing the coldest January the nation has seen since January 2014, with the focus of cold being in the eastern part of the U.S. over the last 30 days.

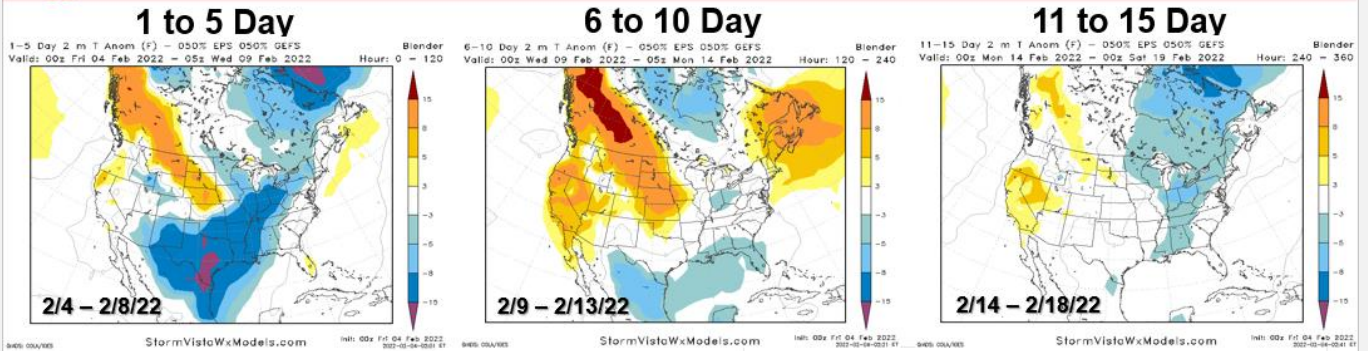


As we look ahead into the remainder of February, it is a tricky forecast, as the data has been quite volatile, but there are reasons to believe the pattern evolves into a more variable one, perhaps closer to normal in terms of national demand. The latest 15-day forecast is shown here:



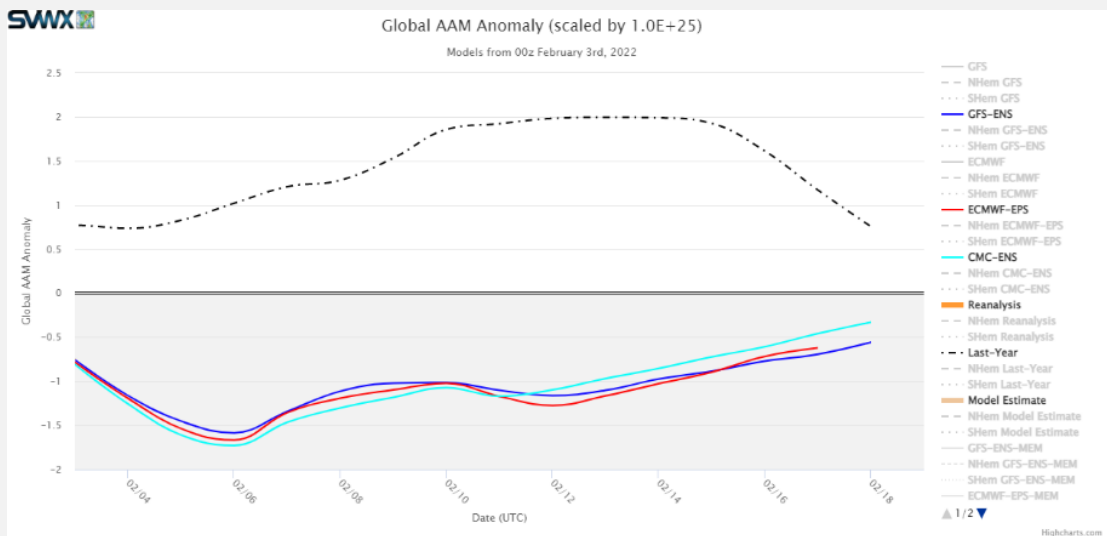
BESPOKE Weather Services

Weather-Driven Demand Forecasts

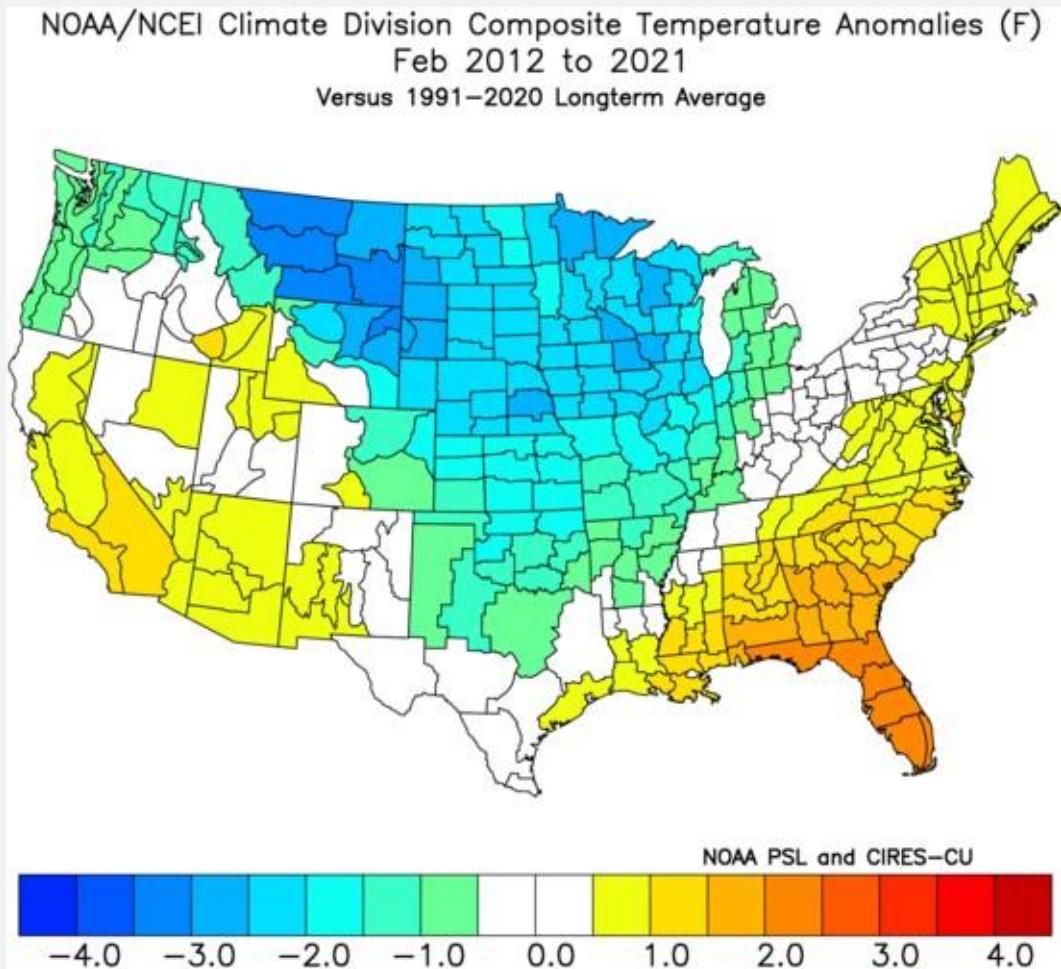


The current Texas cold stands out, but wanes over the next few days, and, as can be seen, the level of cold is not what we have been seeing for the last few weeks, though the next 15 days, taking us a few days beyond the middle of the month, do remain on the colder side of normal.

Of note is the fact that we remain in a La Niña base state, globally, as shown by the persistence recently of negative global angular momentum anomalies, a measure of global wind, essentially, where negative anomalies equate to a tilt toward La Niña, and positive toward El Niño. Image courtesy of StormVista.

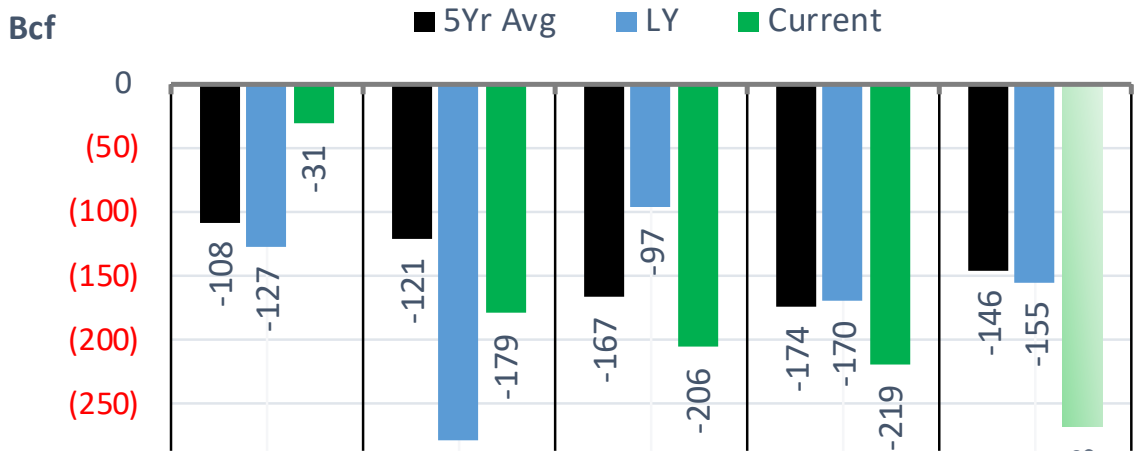


The longer this persists, the more it increases the risk of colder weather gradually relocating farther west, with the East able to turn milder. We are seeing some hint of this already in some of the modeling, with cold risks moving more toward the middle of the nation, loosening its grip in the East. Incidentally, such a pattern has been rather common in February, regardless of the ENSO state, as shown by looking at an aggregate of the last 10 Februaries.

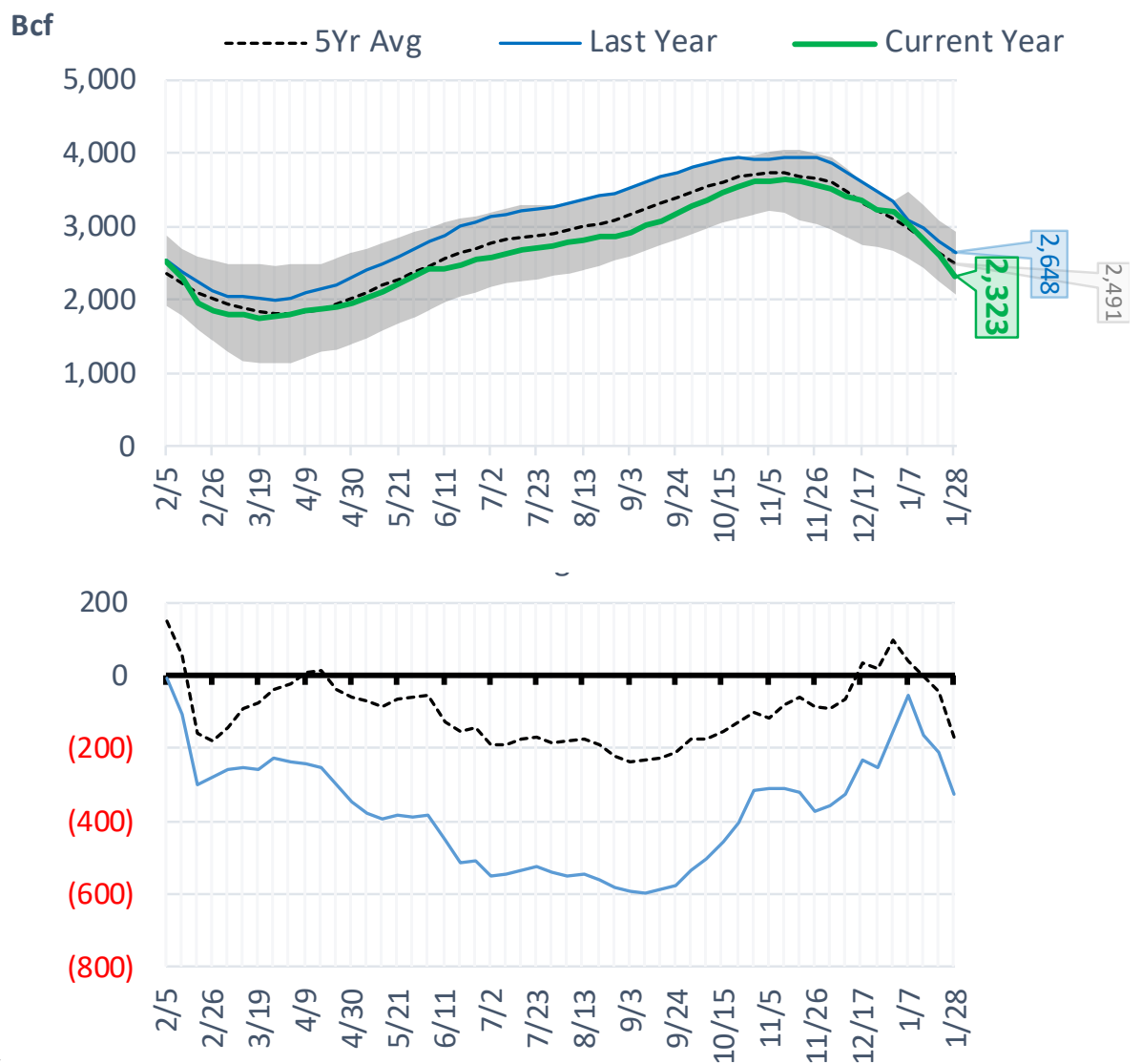


This type of pattern actually serves as our best guess as to how the back half of February will turn out, using the blend of what we see in the modeling, the La Niña state / tropical forcing signals, and recent climatology. Again, it's not as cold as we have seen, but is not a "warm" pattern, either. We shift the location of cold, and by virtue of allowing the East to turn milder, national demand would wind up closer to normal in this scenario. We again stress that confidence is below average, however, as the modeling has been volatile, and there have been hints of a return of the more classic La Niña state for a couple of weeks now, which have not yet panned out, so , as always, it will be important to keep up-to-date on the latest data as we move into the home stretch of the 2021-22 winter season.

Total Lower 48 YoY Weekly Change



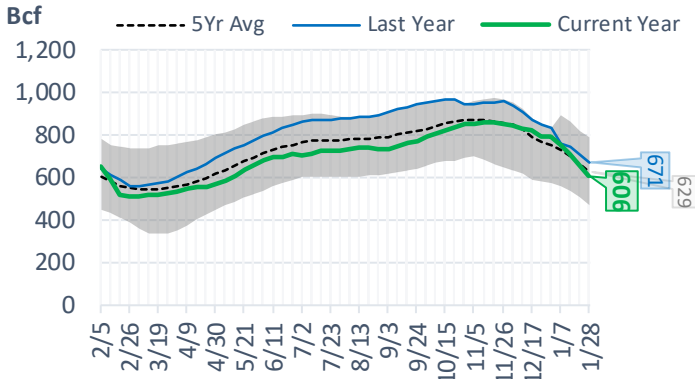
Total Lower 48 Storage Levels



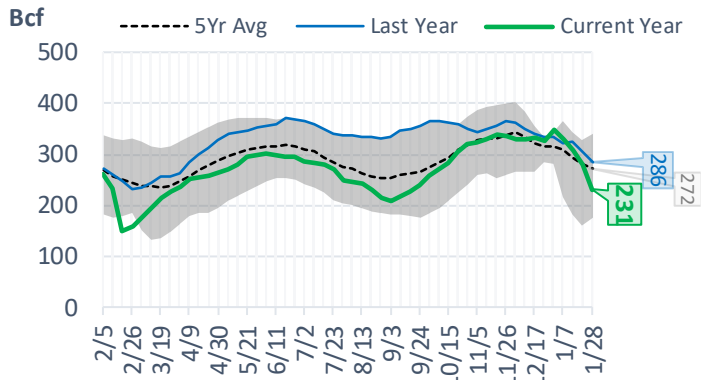
Natural Gas Storage Stats - Last 5 Weeks

Week Ending	Current 28-Jan	Week - 1 21-Jan	Week - 2 14-Jan	Week - 3 7-Jan	Week - 4 31-Dec	Week - 5 24-Dec
Total Lower 48 Storage Level	2323	2591	2810	3016	3195	3226
Weekly Change	-268	-219	-206	-179	-31	-136
vs LY	-325	-212	-163	-54	-154	-250
vs 5Yr Avg	-168	-46	-1	+38	+96	+19
S. Central Salt Storage Level	231	279	308	330	347	326
Weekly Change	-48	-29	-22	-17	+21	-8
vs LY	-55	-27	-18	+9	+14	-8
vs 5Yr Avg	-41	-1	+15	+22	+32	+11
S. Central NonSalt Storage Level	606	658	711	759	796	790
Weekly Change	-52	-53	-48	-37	+6	-30
vs LY	-65	-51	-31	-2	-37	-62
vs 5Yr Avg	-23	-4	+12	+27	+47	+21
Midwest Storage Level	616	701	770	835	893	918
Weekly Change	-85	-69	-65	-58	-25	-45
vs LY	-119	-75	-55	-26	-37	-61
vs 5Yr Avg	-54	-17	-3	+6	+20	+5
East Storage Level	541	609	669	730	767	777
Weekly Change	-68	-60	-61	-37	-10	-32
vs LY	-68	-46	-33	+3	-4	-38
vs 5Yr Avg	-21	+4	+16	+33	+39	+19
Mountain Storage Level	133	143	151	159	172	180
Weekly Change	-10	-8	-8	-13	-8	-8
vs LY	-5	-2	-3	-3	-25	-25
vs 5Yr Avg	-7	-5	-5	-6	-6	-7
Pacific Storage Level	196	201	201	204	219	235
Weekly Change	-5	0	-3	-15	-16	-12
vs LY	-14	-12	-23	-34	-64	-55
vs 5Yr Avg	-22	-24	-35	-44	-37	-30

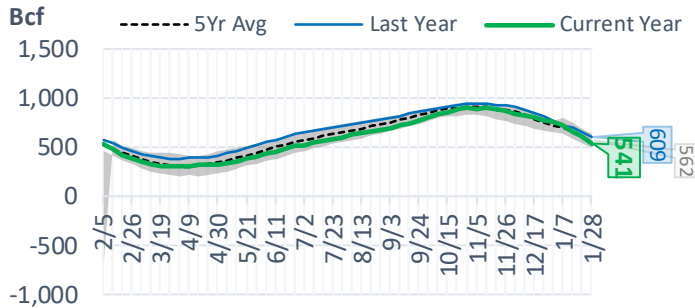
NonSalt Storage Levels



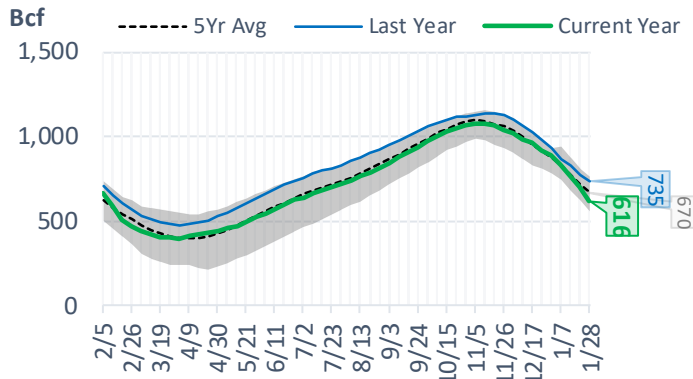
Salt Storage Levels



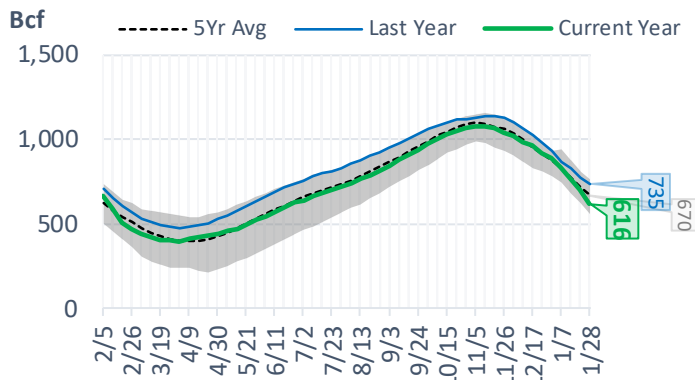
East Storage Levels



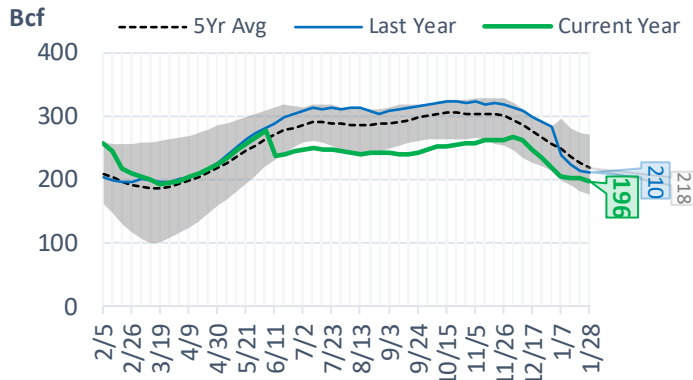
Midwest Storage Levels



Midwest Storage Levels



Pacific Storage Levels



EIA Storage Week Balances

	31-Dec	7-Jan	14-Jan	21-Jan	28-Jan	4-Feb	WoW	vs. 4W
Lower 48 Dry Production	98.4	95.0	95.0	94.7	94.5	94.7	▲ 0.2	▼ -0.1
Canadian Imports	4.2	5.7	6.5	7.0	7.1	7.1	▼ 0.0	▲ 0.5
L48 Power	26.3	29.8	30.4	30.3	32.1	29.8	▼ -2.3	▼ -0.8
L48 Residential & Commercial	31.8	42.9	46.3	47.1	52.7	48.1	▼ -4.6	▲ 0.9
L48 Industrial	23.7	27.3	26.8	28.0	27.5	29.6	▲ 2.1	▲ 2.2
L48 Lease and Plant Fuel	5.3	5.2	5.2	5.2	5.2	5.2	▲ 0.0	▼ 0.0
L48 Pipeline Distribution	2.9	3.5	3.7	3.8	4.1	3.7	▼ -0.4	▼ 0.0
L48 Regional Gas Consumption	90.1	108.7	112.4	114.3	121.6	116.4	▼ -5.2	▲ 2.2
Net LNG Exports	12.3	11.9	12.3	12.9	12.5	12.1	▼ -0.4	▼ -0.3
Total Mexican Exports	5.8	5.9	6.3	6.4	6.5	6.4	▼ -0.1	▲ 0.1
Implied Daily Storage Activity	-5.5	-25.9	-29.5	-32.0	-38.9	-33.1	5.8	
EIA Reported Daily Storage Activity	-4.4	-25.6	-29.4	-31.3	-38.3			
Daily Model Error	-1.1	-0.3	-0.1	-0.7	-0.6			

Monthly Balances

	2Yr Ago Feb-20	LY Feb-21	Oct-21	Nov-21	Dec-21	Jan-22	MTD Feb-22	MoM	vs. LY
Lower 48 Dry Production	94.2	84.3	94.3	95.6	96.9	94.9	92.5	▼ -2.4	▲ 8.2
Canadian Imports	5.3	6.4	5.4	5.3	4.8	6.7	7.2	▲ 0.5	▲ 0.8
L48 Power	30.2	27.6	30.5	29.1	28.4	30.7	29.2	▼ -1.5	▲ 1.6
L48 Residential & Commercial	40.6	48.1	12.4	27.1	32.6	48.3	44.5	▼ -3.8	▼ -3.6
L48 Industrial	25.1	21.1	21.1	24.3	25.1	27.6	26.6	▼ -1.0	▲ 5.5
L48 Lease and Plant Fuel	5.1	4.6	5.2	5.2	5.3	5.2	5.1	▼ -0.1	▲ 0.4
L48 Pipeline Distribution	3.5	3.6	2.4	2.9	3.0	3.8	3.5	▼ -0.3	▼ -0.1
L48 Regional Gas Consumption	104.5	104.9	71.6	88.7	94.4	115.7	108.8	▼ -6.9	▲ 3.8
Net LNG Exports	8.5	8.4	10.6	11.4	12.1	12.4	12.2	▼ -0.2	▲ 3.8
Total Mexican Exports	5.2	5.7	6.6	6.1	6.1	6.3	6.4	▲ 0.1	▲ 0.7
Implied Daily Storage Activity	-18.7	-28.4	10.9	-5.3	-11.0	-32.8	-27.7		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

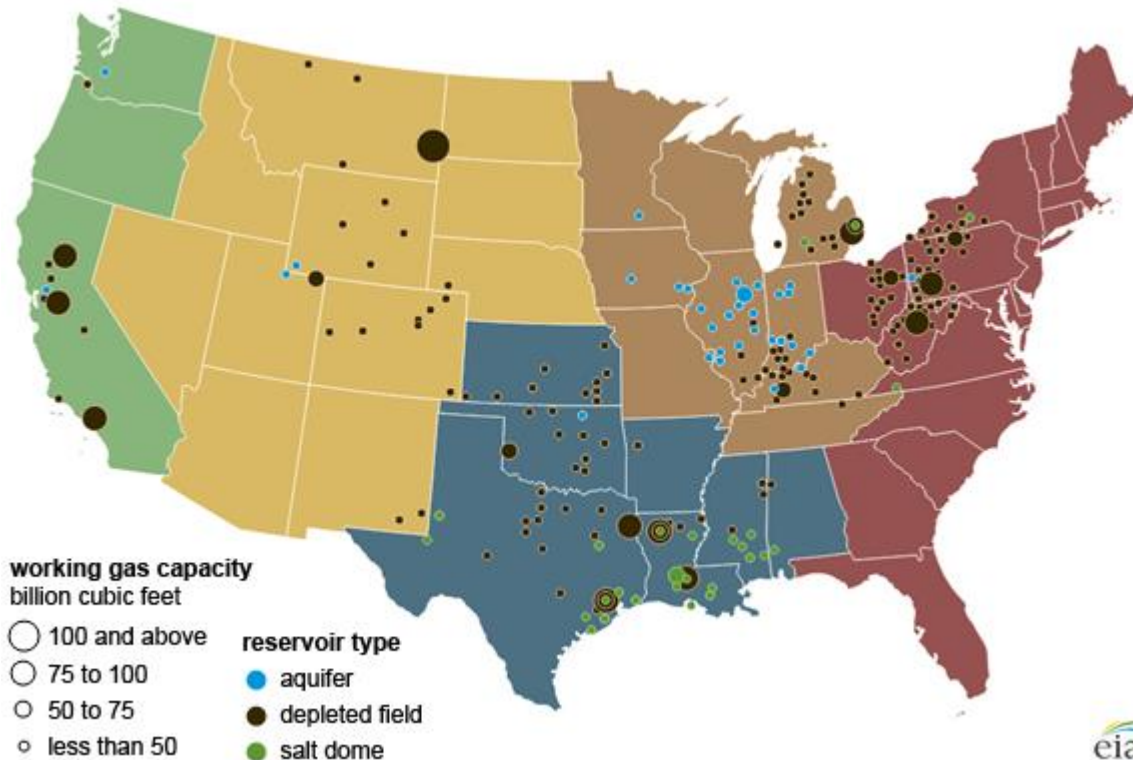
Regional S/D Models Storage Projection

Week Ending 4-Feb

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-33.2	0.7	-32.6	-228
East	-10.4	2.4	-8.0	-56
Midwest	-9.8	-1.1	-10.8	-76
Mountain	1.5	-3.1	-1.6	-11
South Central	-13.3	2.9	-10.4	-73
Pacific	-1.3	-0.4	-1.7	-12

*Adjustment Factor is calculated based on historical regional deltas

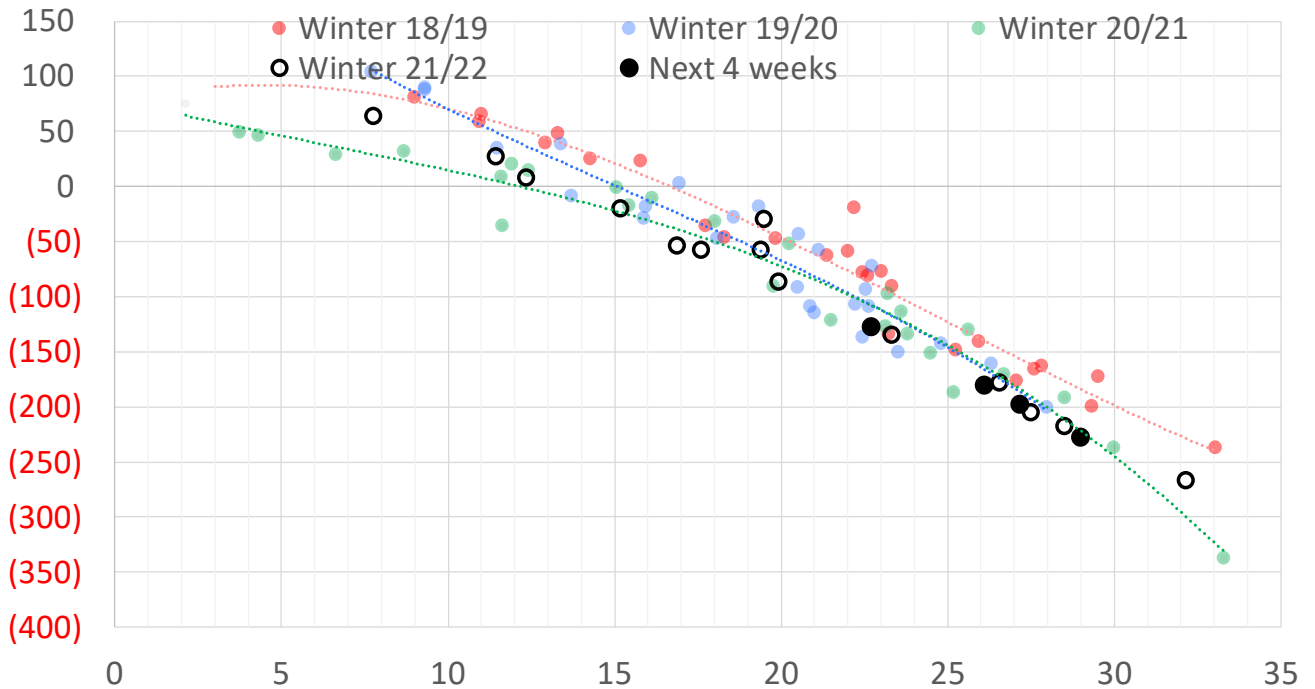
U.S. underground natural gas storage facilities by type (July 2015)



Weather Model Storage Projection

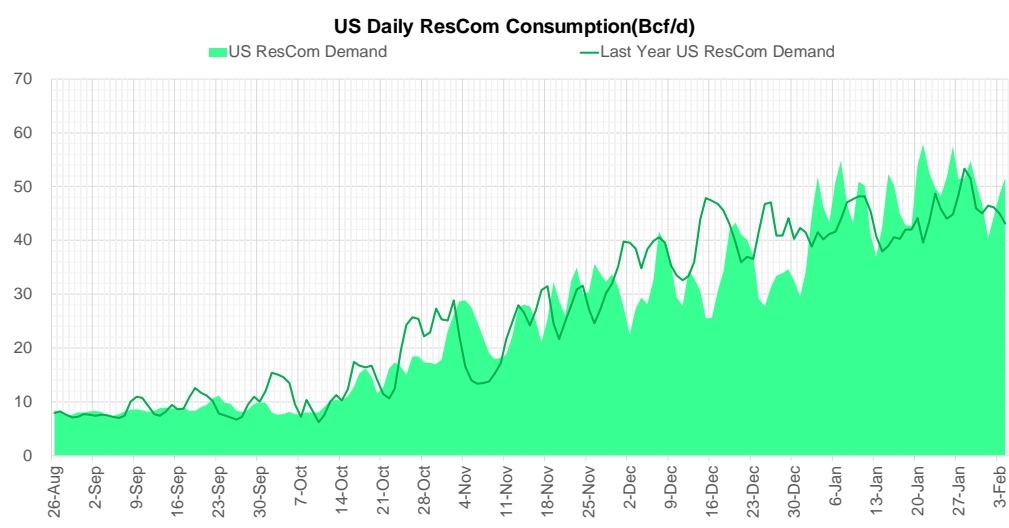
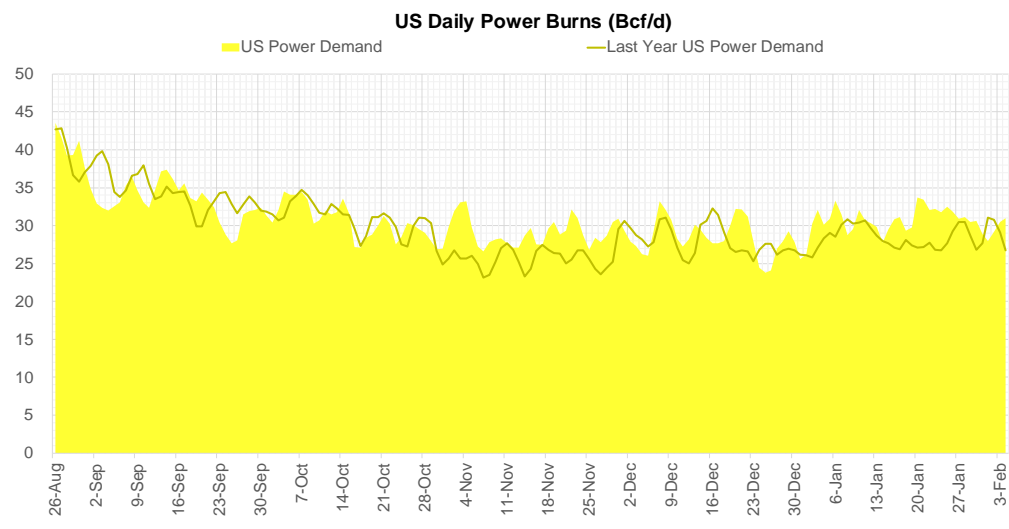
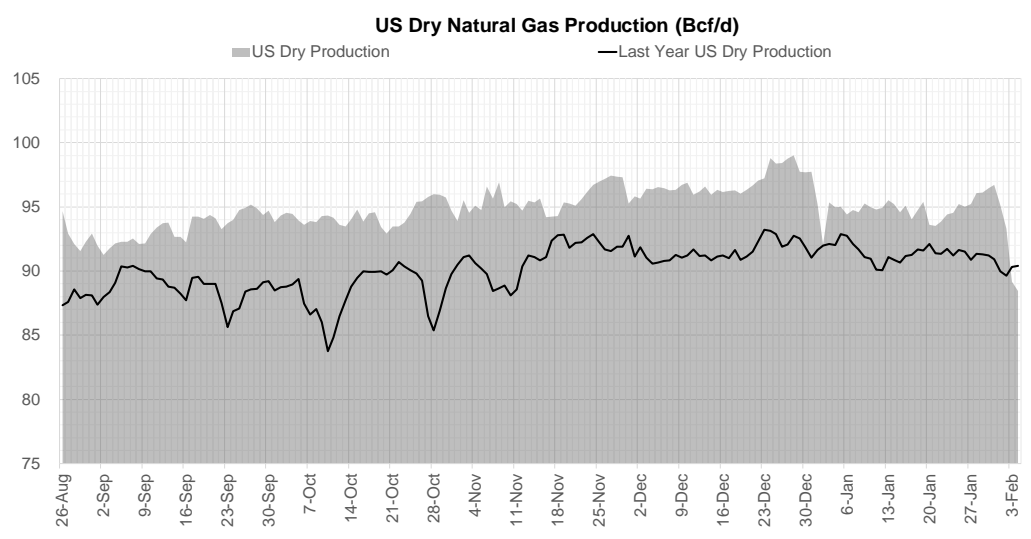
Next report and beyond		
Week Ending	GWDDs	Week Storage Projection
04-Feb	29	-228
11-Feb	27	-198
18-Feb	26	-180
25-Feb	23	-127

Weather Storage Model - Next 4 Week Forecast



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

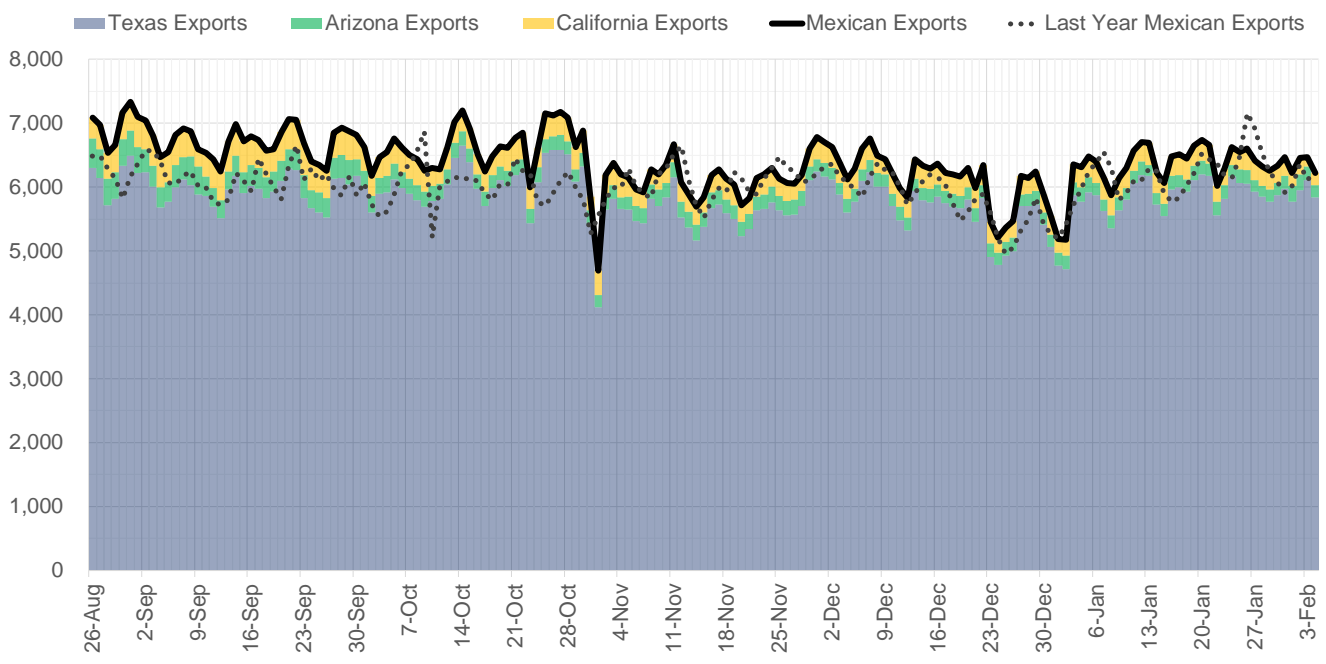
Supply – Demand Trends



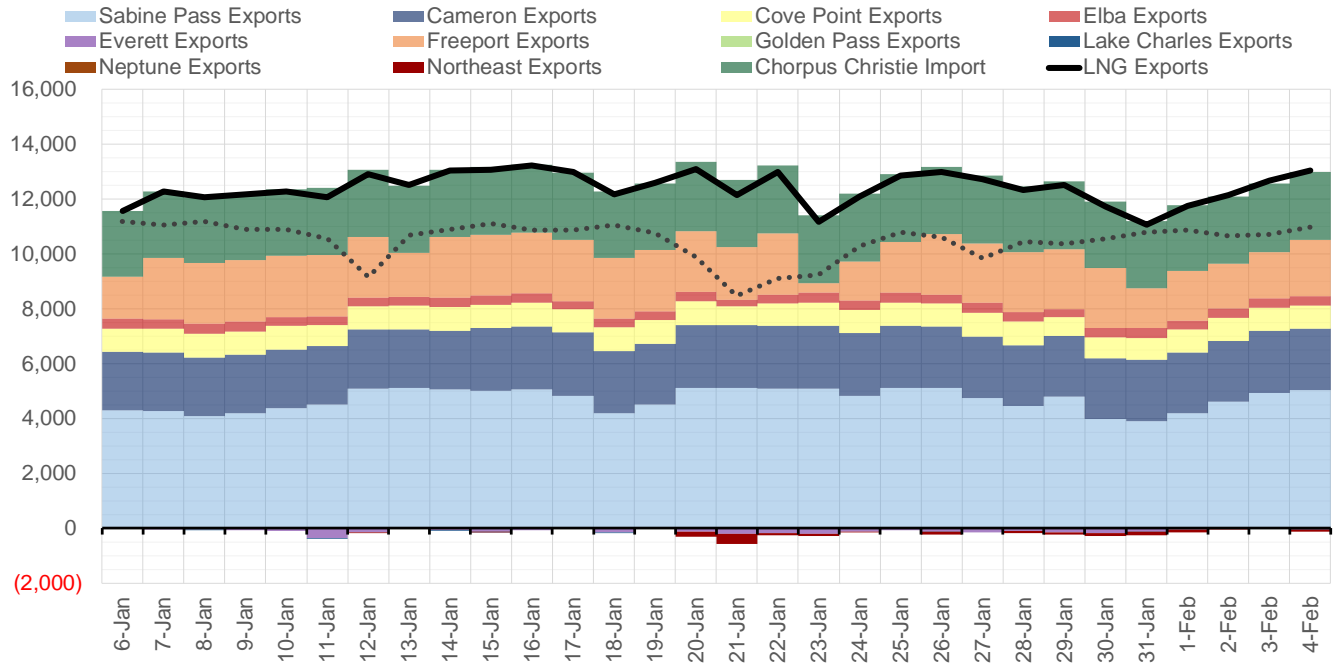
Source: Bloomberg

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Mexican Exports (MMcf/d)



Net LNG Exports - Last 30 days (MMcf/d)



Source: Bloomberg

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

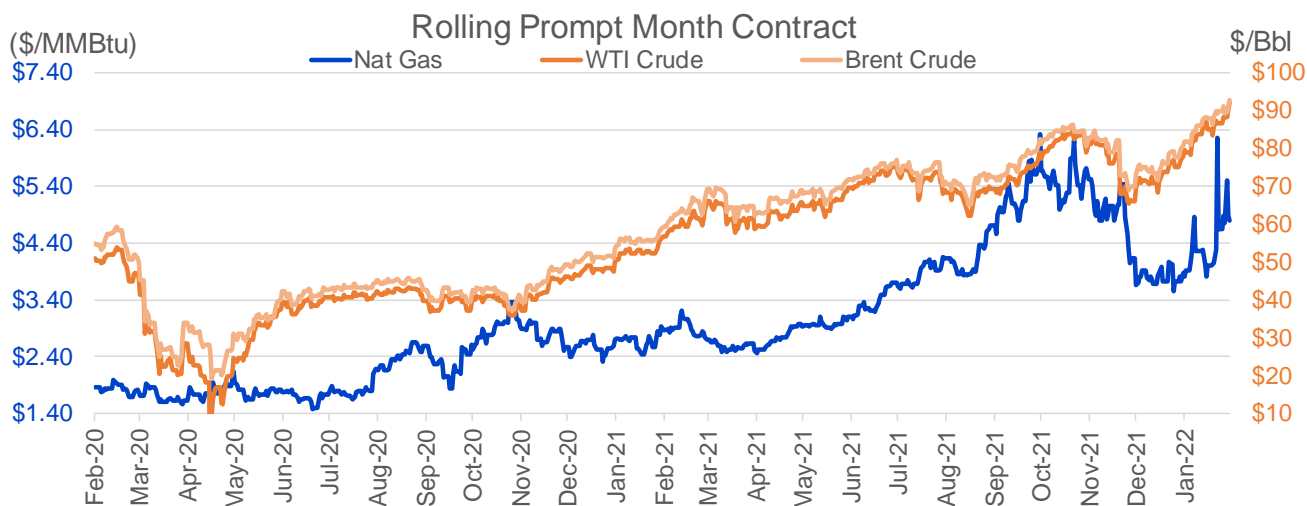
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
3	2022	P	4.00	8904	3	2022	P	3.00	43270
3	2022	C	6.00	6381	3	2022	P	4.00	36973
3	2022	P	4.50	6015	3	2022	C	10.00	34594
3	2022	P	3.50	5889	3	2022	C	5.00	33660
3	2022	P	3.90	5508	3	2022	P	3.50	31478
3	2022	C	8.00	3951	3	2022	C	6.00	29424
4	2022	P	3.00	3702	3	2022	C	8.00	28368
4	2022	P	4.00	3296	3	2022	C	7.00	24293
3	2022	C	6.25	3182	3	2022	P	2.50	24084
5	2022	P	4.00	3079	10	2022	C	6.00	23819
4	2022	C	5.50	3048	3	2022	P	4.50	23284
4	2022	P	4.25	2968	3	2022	C	4.00	23212
4	2022	C	6.00	2954	4	2022	P	3.00	23094
3	2022	P	4.25	2765	3	2022	P	3.75	22304
12	2022	C	5.00	2500	3	2022	P	3.25	20758
3	2022	P	4.75	2463	4	2022	C	3.00	19711
4	2022	C	7.00	2401	6	2022	C	5.00	19056
6	2022	C	6.00	2365	4	2022	C	5.00	18352
4	2022	P	4.50	2336	3	2022	C	4.50	18331
3	2022	C	5.00	2263	5	2022	P	3.00	17945
3	2022	P	4.40	2232	10	2022	C	5.00	17863
4	2022	C	6.25	2079	6	2022	P	3.00	17711
12	2022	P	5.00	2030	6	2022	C	6.00	17538
6	2022	P	4.00	2004	4	2022	P	2.50	17370
8	2022	C	7.50	2000	12	2022	C	5.00	17226
12	2022	C	4.60	2000	5	2022	C	5.00	16650
12	2022	C	5.10	2000	10	2022	P	3.00	16149
12	2022	P	4.50	2000	3	2022	P	3.90	15694
3	2022	P	5.00	1986	5	2022	P	2.50	15436
10	2022	P	4.50	1979	4	2022	C	6.00	15085
3	2022	P	3.75	1968	3	2022	P	5.00	15076
4	2022	C	5.00	1961	3	2022	P	2.00	14981
3	2022	C	10.00	1936	4	2022	P	4.00	14564
1	2024	C	5.00	1800	3	2022	P	2.75	14465
1	2024	C	10.00	1800	4	2022	P	3.50	14044
2	2024	C	5.00	1800	5	2022	C	6.00	14021
2	2024	C	10.00	1800	10	2022	P	2.00	13921
3	2024	C	5.00	1800	3	2022	P	2.25	13916
3	2024	C	10.00	1800	4	2022	C	4.00	13854
4	2024	C	5.00	1800	4	2022	P	3.25	13809
4	2024	C	10.00	1800	5	2022	C	3.00	13733
4	2024	C	10.00	1800	9	2022	C	6.00	13658
5	2024	C	5.00	1800	6	2022	C	3.00	13438
5	2024	C	10.00	1800	3	2022	C	3.50	13281
6	2024	C	5.00	1800	3	2022	C	3.00	13270
6	2024	C	10.00	1800	12	2022	C	6.25	13254
7	2024	C	5.00	1800	7	2022	C	3.00	13230
7	2024	C	10.00	1800	8	2022	C	3.00	13226
8	2024	C	5.00	1800	9	2022	C	3.00	13225
8	2024	C	10.00	1800	10	2022	C	3	13114

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		Current	Prior	Daily Change
MAR 22	258042	263353	-5311	MAR 22	94712	102142	-7430
APR 22	91828	93089	-1261	APR 22	76128	76756	-628
MAY 22	140931	128513	12418	MAY 22	77059	74569	2491
JUN 22	65992	65843	149	JUN 22	68489	67144	1345
JUL 22	66612	68333	-1721	JUL 22	63448	62642	806
AUG 22	41478	41680	-202	AUG 22	60937	59978	959
SEP 22	53746	52802	944	SEP 22	60956	60512	445
OCT 22	81784	80026	1758	OCT 22	67595	66354	1241
NOV 22	37331	36611	720	NOV 22	54548	54178	370
DEC 22	40099	40155	-56	DEC 22	63248	62615	633
JAN 23	57663	56403	1260	JAN 23	53736	53391	345
FEB 23	19777	18143	1634	FEB 23	42662	42371	292
MAR 23	36367	35360	1007	MAR 23	47730	47358	372
APR 23	37678	36028	1650	APR 23	47251	46638	613
MAY 23	20862	19743	1119	MAY 23	39803	39640	164
JUN 23	12590	12347	243	JUN 23	38329	37872	458
JUL 23	11502	11485	17	JUL 23	37795	37302	493
AUG 23	7552	7300	252	AUG 23	36844	36379	466
SEP 23	10757	10477	280	SEP 23	37095	36611	485
OCT 23	16390	15428	962	OCT 23	41050	40613	437
NOV 23	10160	9643	517	NOV 23	39839	39919	-80
DEC 23	12992	12785	207	DEC 23	34117	34162	-45
JAN 24	9846	9466	380	JAN 24	25691	25157	534
FEB 24	2409	2446	-37	FEB 24	18818	18491	327
MAR 24	11991	10905	1086	MAR 24	24619	24272	347
APR 24	6241	5417	824	APR 24	18130	17676	455
MAY 24	2308	2113	195	MAY 24	17920	17451	469
JUN 24	1002	978	24	JUN 24	17817	17570	247
JUL 24	619	618	1	JUL 24	18460	17961	500
AUG 24	732	730	2	AUG 24	18344	18057	287

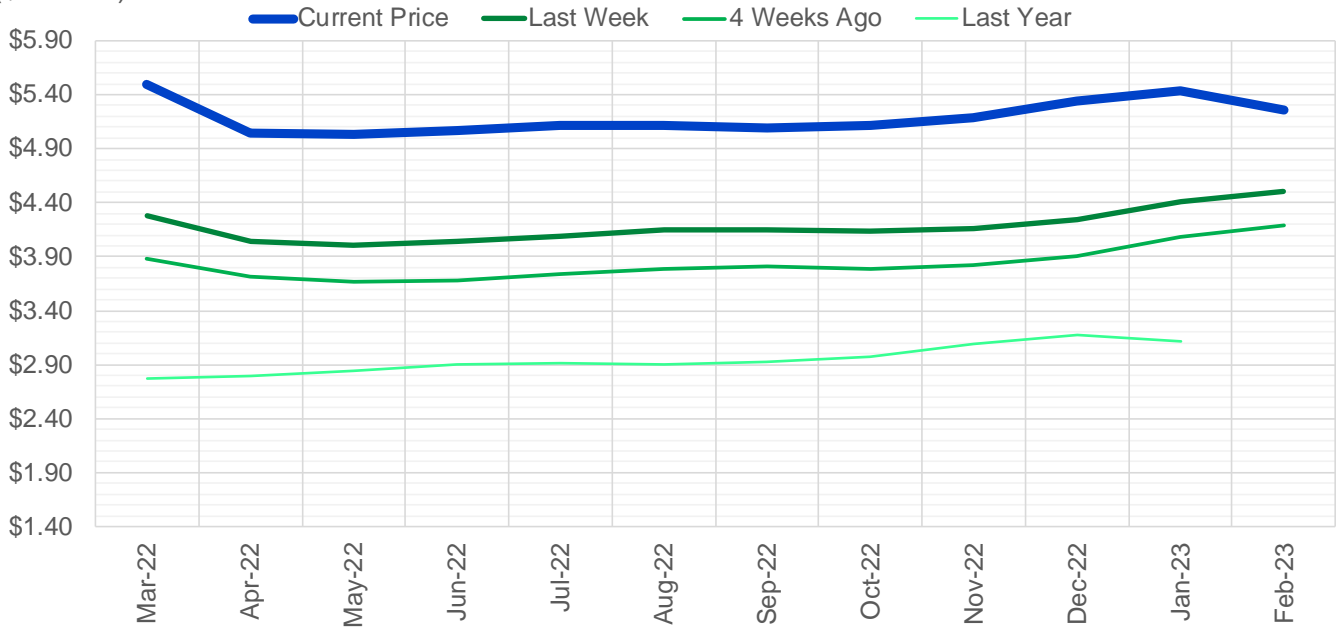
Source: CME, ICE



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(\$/MMBtu)

Nat Gas Term Structure




	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23
Current Price	\$5.501	\$5.044	\$5.038	\$5.069	\$5.112	\$5.115	\$5.093	\$5.113	\$5.186	\$5.340	\$5.440	\$5.255
Last Week	\$4.277	\$4.036	\$4.011	\$4.044	\$4.090	\$4.144	\$4.154	\$4.135	\$4.158	\$4.247	\$4.415	\$4.510
vs. Last Week	\$1.224	\$1.008	\$1.027	\$1.025	\$1.022	\$0.971	\$0.939	\$0.978	\$1.028	\$1.093	\$1.025	\$0.745
4 Weeks Ago	\$3.882	\$3.710	\$3.666	\$3.683	\$3.733	\$3.789	\$3.804	\$3.789	\$3.818	\$3.909	\$4.086	\$4.193
vs. 4 Weeks Ago	\$1.619	\$1.334	\$1.372	\$1.386	\$1.379	\$1.326	\$1.289	\$1.324	\$1.368	\$1.431	\$1.354	\$1.062
Last Year	\$2.789	\$2.772	\$2.799	\$2.843	\$2.897	\$2.911	\$2.899	\$2.920	\$2.977	\$3.093	\$3.176	\$3.117
vs. Last Year	\$2.712	\$2.272	\$2.239	\$2.226	\$2.215	\$2.204	\$2.194	\$2.193	\$2.209	\$2.247	\$2.264	\$2.138

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224	▲ 0.000	▲ 0.000	▲ 2.209
NatGas Oct21/Nov21	\$/MMBtu	0.361	▲ 0.000	▲ 0.000	▲ 0.307
NatGas Oct21/Jan22	\$/MMBtu	-1.817	▲ 0.000	▲ 0.000	▼ -2.067
NatGas Apr22/Oct22	\$/MMBtu	0.096	▼ -0.030	▼ -0.060	▲ 0.090
WTI Crude	\$/Bbl	90.27	▲ 3.660	▲ 10.810	▲ 34.040
Brent Crude	\$/Bbl	91.11	▲ 1.770	▲ 9.120	▲ 32.270
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	283.95	▲ 4.500	▲ 36.180	▲ 113.900
Propane, Mt. Bel	cents/Gallon	1.28	▲ 0.123	▲ 0.179	▲ 0.438
Ethane, Mt. Bel	cents/Gallon	0.43	▲ 0.052	▲ 0.069	▲ 0.158
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▲ 0.000
Coal, PRB	\$/MMBtu	0.70			

Source: CME, Bloomberg

The risk of trading futures and options and other derivatives involves a substantial risk of loss and is not suitable for all persons. Each person must consider whether a particular trade, combination of trades, or strategy is suitable for that person's financial means and objectives. Past results are not necessarily indicative of future results. This communication may contain links to third party websites which are not under the control of and are not maintained by ION Energy Group, and ION Energy Group is not responsible for their content.

Baker Hughes Rig Counts

Rotary Rig Count					
2/4/2022					
Baker Hughes 					
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago
Oil	497	2	495	198	299
Gas	116	1	115	24	92
Miscellaneous	0	0	0	-1	1
Directional	34	-2	36	16	18
Horizontal	555	2	553	201	354
Vertical	24	3	21	4	20
Canada Breakout	This Week	+/-	Last Week	+/-	Year Ago
Oil	136	1	135	41	95
Gas	82	0	82	6	76
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago
Arkoma Woodford	1	-1	2	1	0
Barnett	2	0	2	1	1
Cana Woodford	25	-1	26	16	9
DJ-Niobrara	12	0	12	5	7
Eagle Ford	50	0	50	22	28
Granite Wash	5	1	4	5	0
Haynesville	54	0	54	7	47
Marcellus	33	-1	34	3	30
Mississippian	1	0	1	1	0
Permian	294	1	293	96	198
Utica	12	1	11	5	7
Williston	31	4	27	19	12