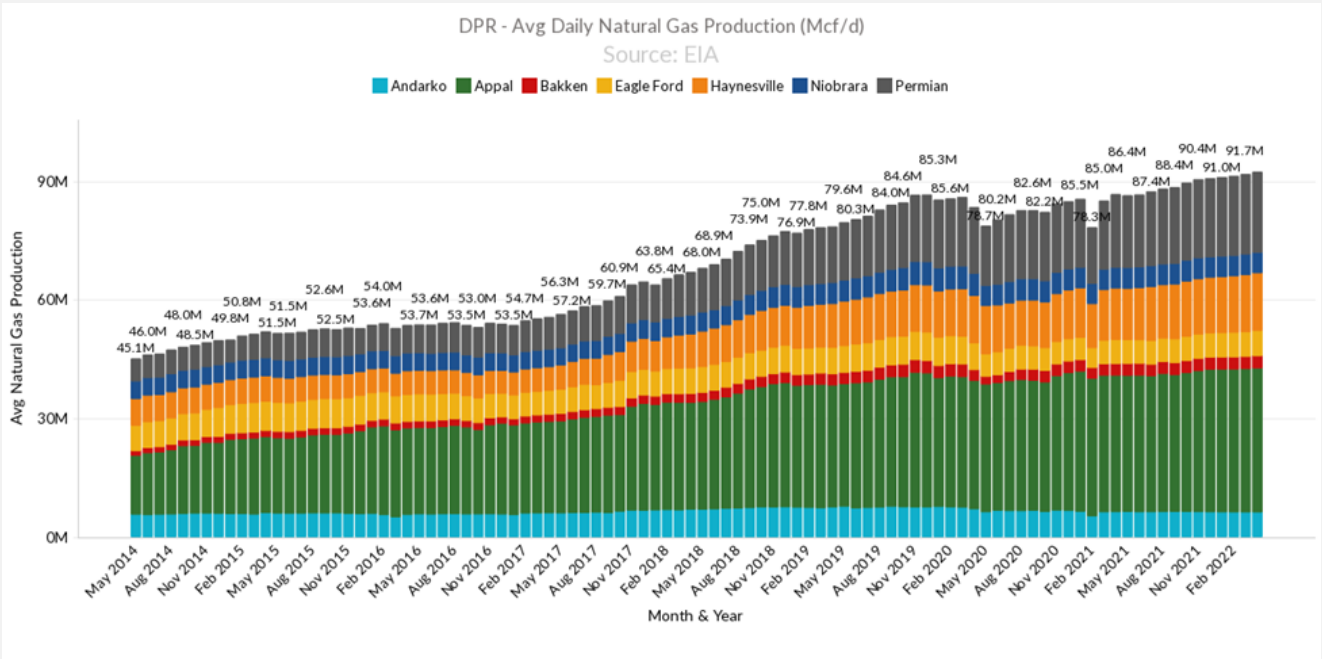


This past week, the EIA released their latest drilling productivity report (DPR) which includes their forecast for March and April.

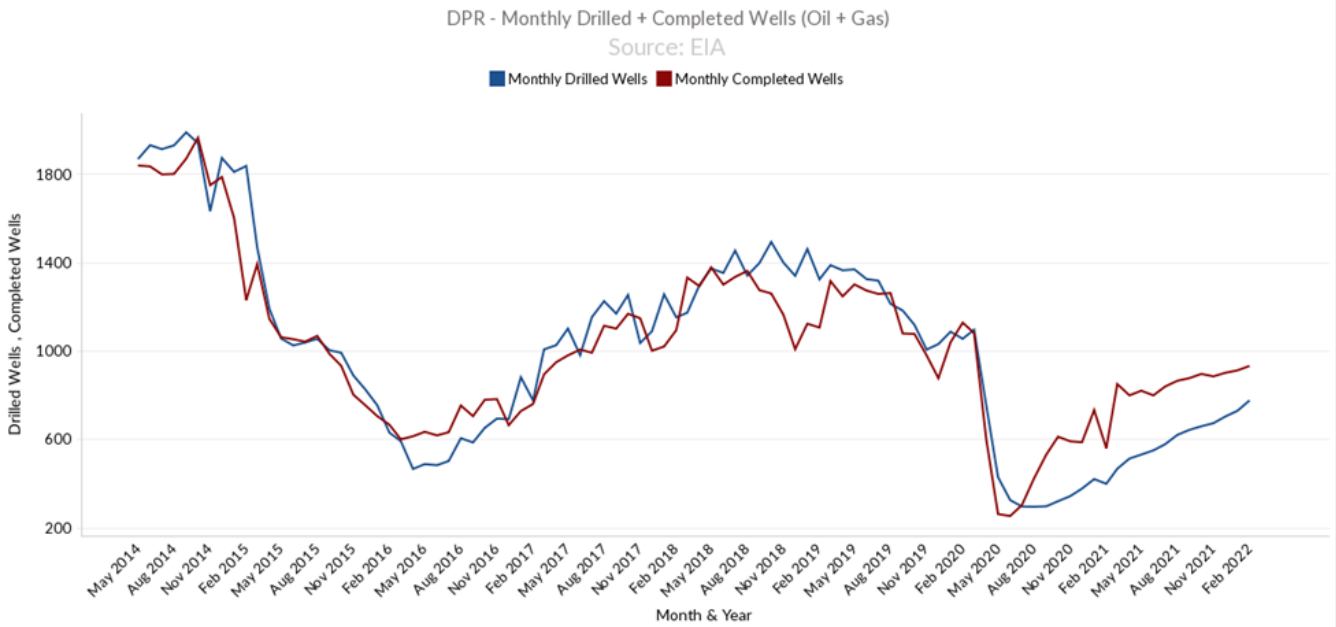
The DPR revised natural gas shale production slightly higher in March to 91.73 Bcf/d (slightly higher than the previous March estimate of 91.68 Bcf/d). April natural gas production levels are slightly higher at 92.33 Bcf/d. Speaking to analysts at the EIA, we gather that these are wellhead gas estimates (ie. not dry gas volumes) and there are no adjustments for freeze-offs made to the forward-looking volumes.



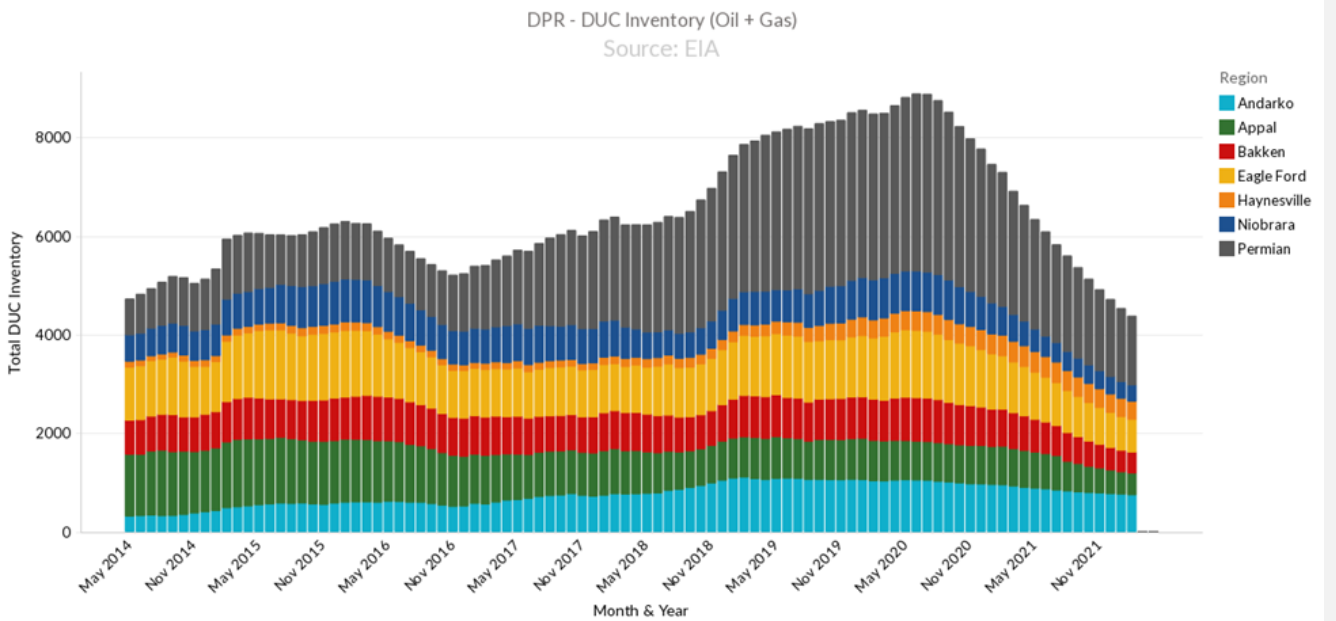
***All the DPR charts come from our EIA DPR dashboard which lets you filter by region, date, and download the raw data. Drop me a line at het@analytix.ai to check it out**

The two biggest gas-focused regions, Appalachia and Haynesville, are expected to see big hikes in April. Appalachia will grow by 186 MMcf/d to 36.48 Bcf/d, and the Haynesville Shale will rise by 173 MMcf/d to 14.60 Bcf/d. Meanwhile, the Permian will grow by 120 MMcf/d to 20.28 Bcf/d, and the Eagle Ford by 94 MMcf/d to 6.382 Bcf/d.

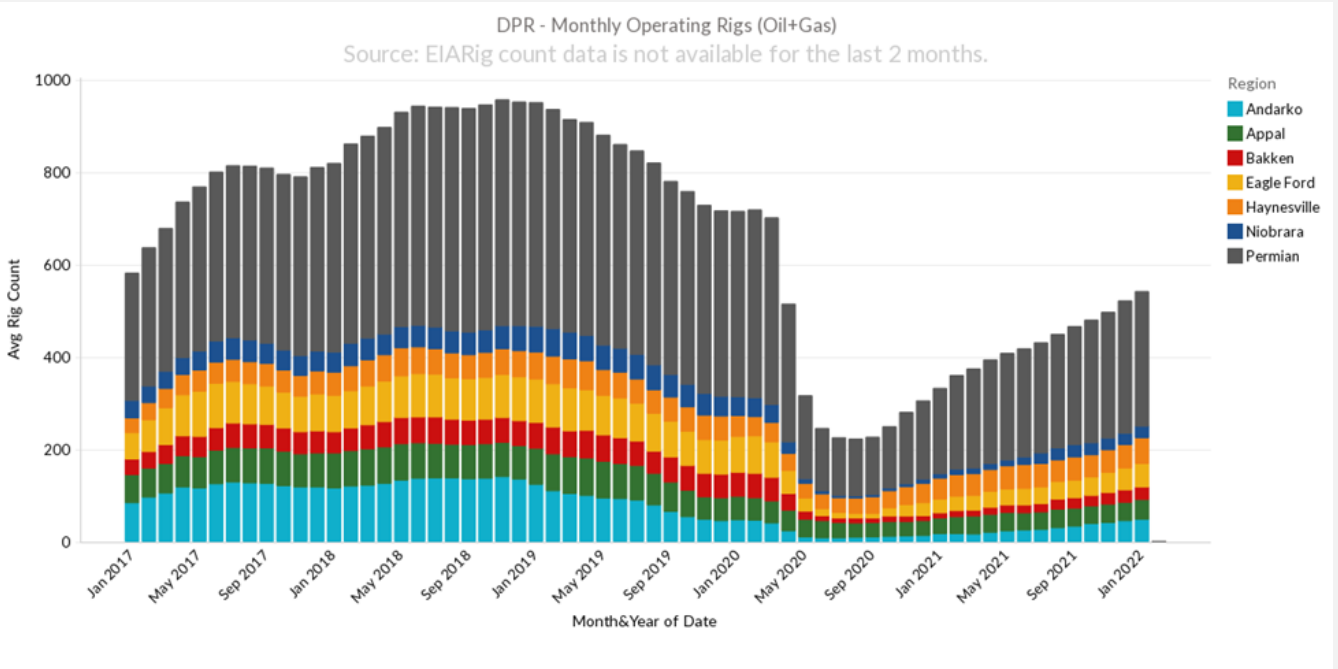
The growth is occurring amid increasing drilling activity and spending hikes with front-month crude oil futures trading above \$100/b. That being said, the short-term production gains would still heavily rely on DUCs. The chart below clearly shows that there is a gap between monthly completed wells and drilled well. This reliance on DUCs started with the onset of COVID and dropping energy prices. In Oct 2020, drilled well made up only 52% of total completed wells. Today with increasing energy prices, producers are starting to deploy rigs (but only to specific regions) and drill at a faster rate. Today, that number has trended up to 82% of completed wells being drilled.



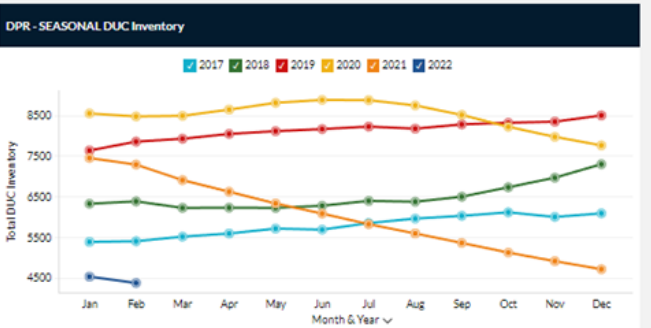
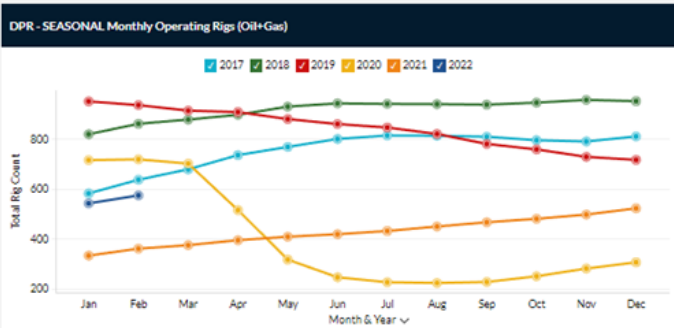
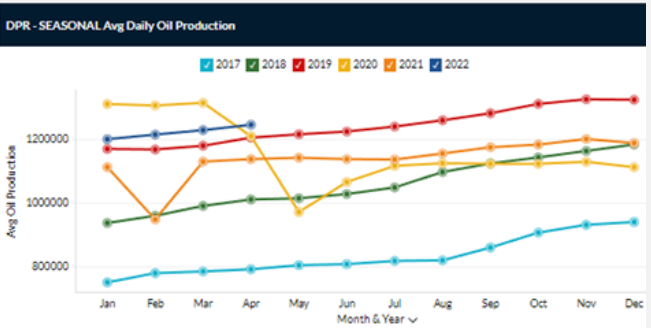
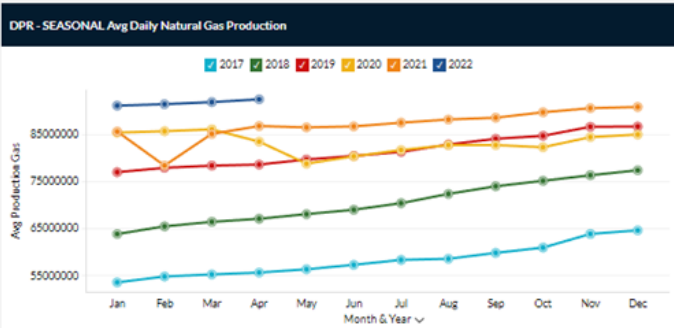
Luckily we had a large inventory off DUCs to manage the number of completed wells required each month to keep production somewhat stable, but as can be seen, the level of DUC is falling off fast. The biggest drawdown in DUC is seen in the Permian which currently has 1396 DUCs from 3590 in June 2020.



While the active drilling rig count is steadily growing, the pace of bringing new production online is still being constrained workforce (frac crews) and supply chain issues. At the moment all those resources are going to oil-focused regions where netback is much better.

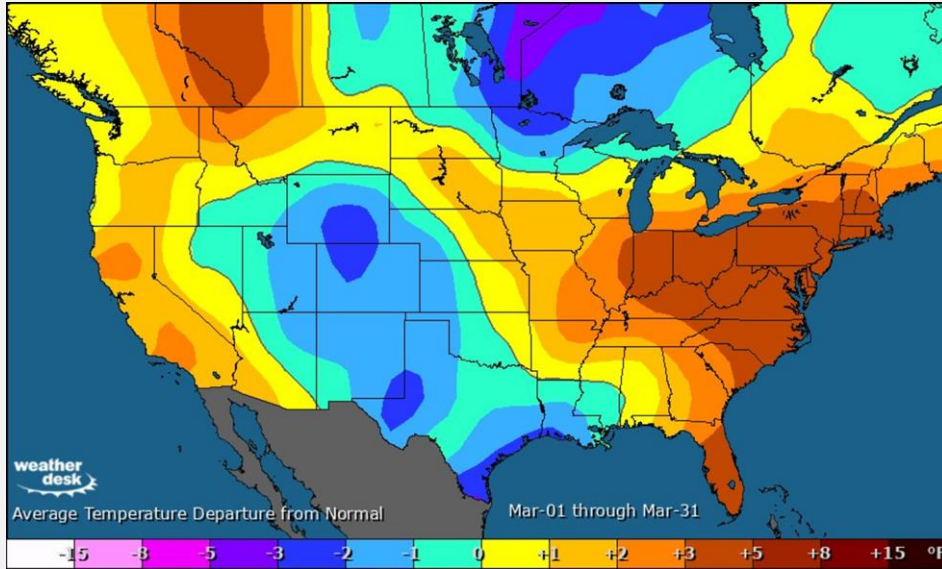


All the data can be seen in seasonality charts by region in the dashboard.

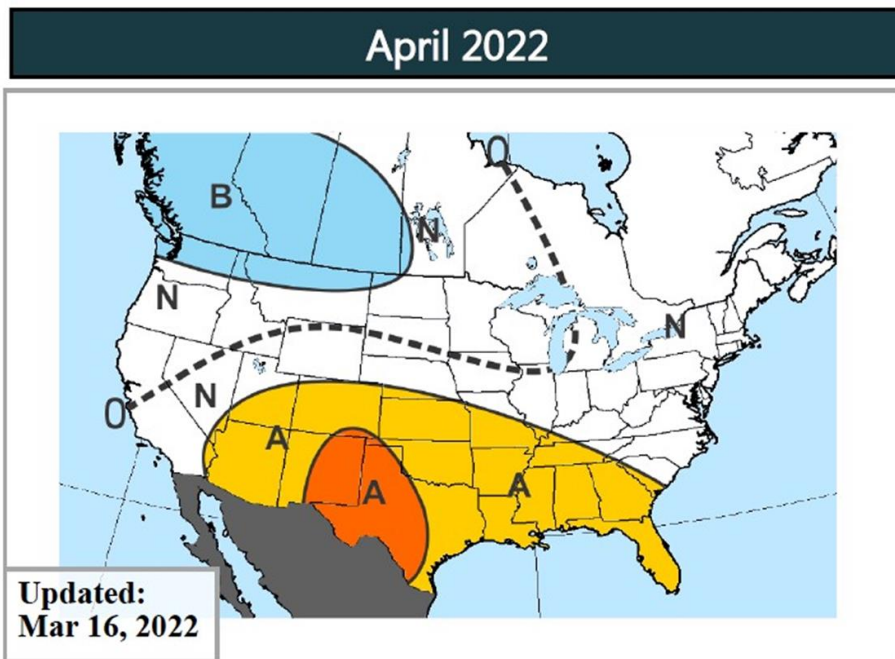


Here are some weather bits from Maxar’s Weather segment on enelyst:

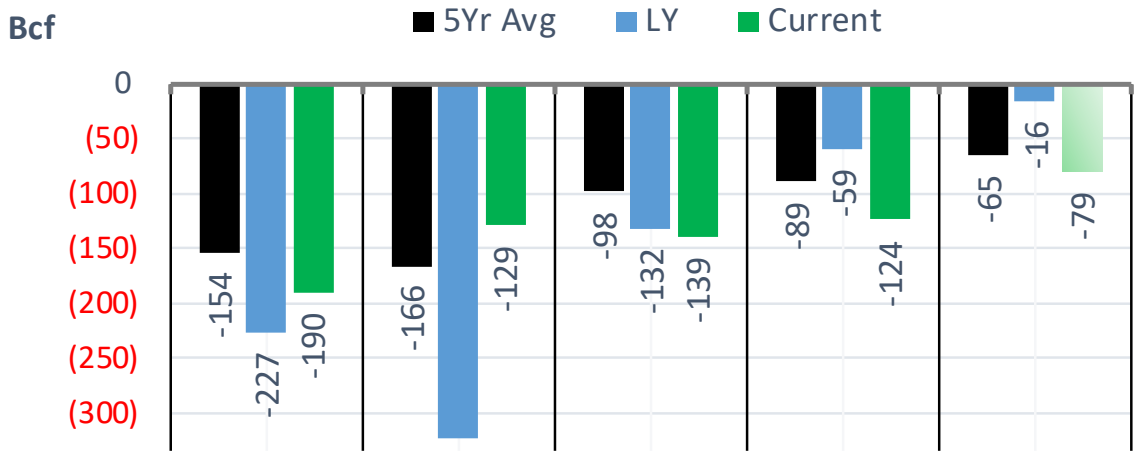
March is forecast to total 550 GWHDDs, which is lower than normal (10-year is 591; 30-year is 620) and would rank as the 9th warmest back to 1950. Last year was slightly warmer than is currently forecast this month, ranking 7th warmest on record with 539 GWHDDs.



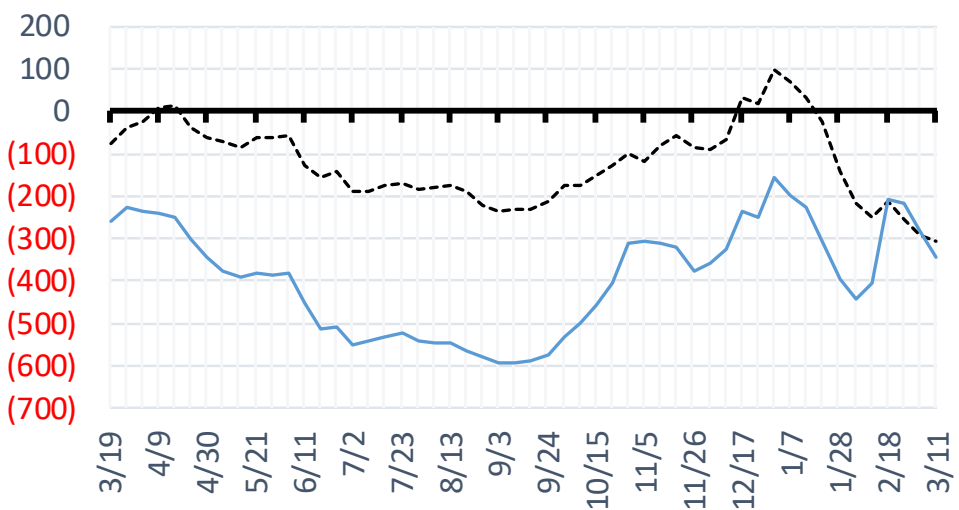
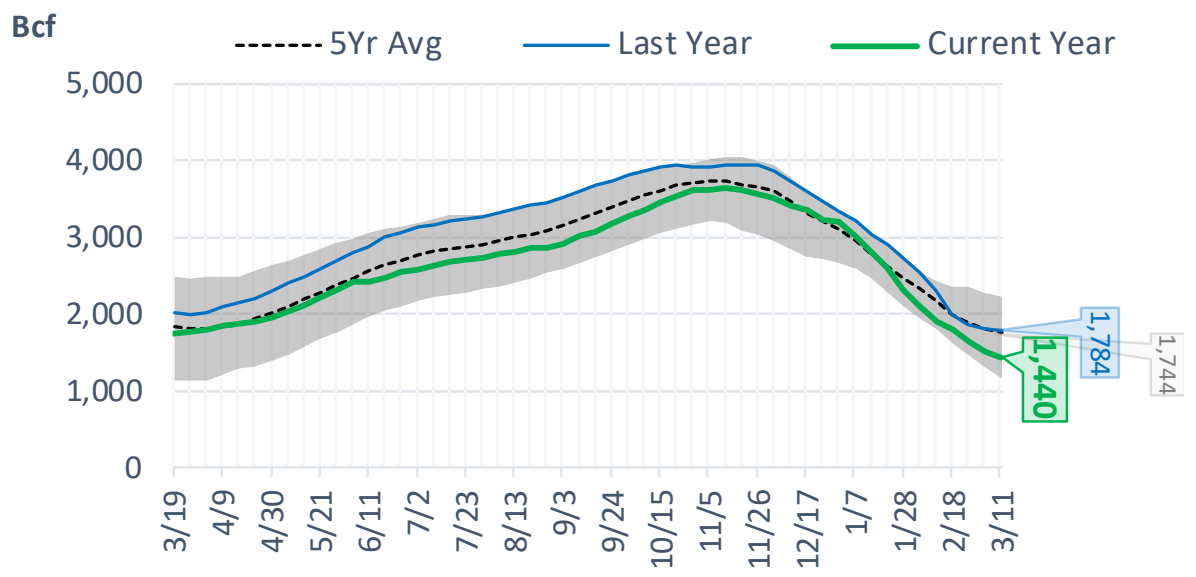
The April outlook has not changed. Maxar is still calling for a warm and dry month in those drought-affected areas from the Southwest to Texas.



Total Lower 48 YoY Weekly Change



Total Lower 48 Storage Levels

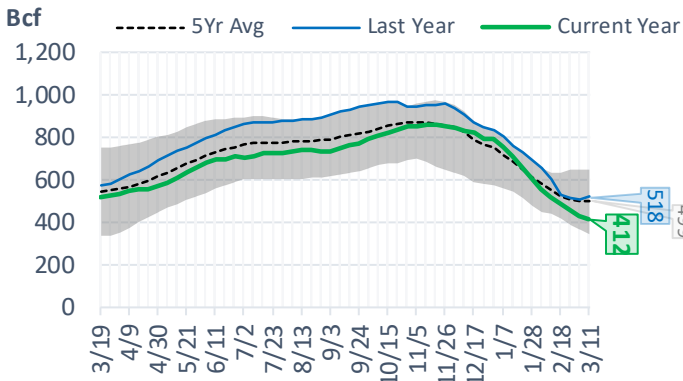


The risk person

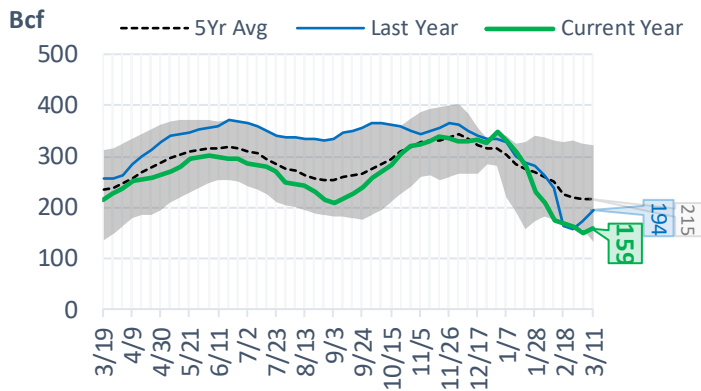
Natural Gas Storage Stats - Last 5 Weeks

Week Ending	Current 11-Mar	Week - 1 4-Mar	Week - 2 25-Feb	Week - 3 18-Feb	Week - 4 11-Feb	Week - 5 4-Feb
Total Lower 48 Storage Level	1440	1519	1643	1782	1911	2101
Weekly Change	-79	-124	-139	-129	-190	-222
vs LY	-344	-281	-216	-209	-404	-441
vs 5Yr Avg	-304	-290	-255	-214	-251	-215
S. Central Salt Storage Level	159	151	163	168	173	207
Weekly Change	+8	-12	-5	-5	-34	-24
vs LY	-35	-23	+5	+6	-64	-57
vs 5Yr Avg	-56	-65	-57	-58	-76	-53
S. Central NonSalt Storage Level	412	431	457	487	516	556
Weekly Change	-19	-26	-30	-29	-40	-50
vs LY	-106	-78	-55	-43	-86	-103
vs 5Yr Avg	-87	-68	-52	-34	-35	-26
Midwest Storage Level	337	364	404	450	496	552
Weekly Change	-27	-40	-46	-46	-56	-64
vs LY	-91	-80	-67	-70	-104	-122
vs 5Yr Avg	-86	-85	-77	-65	-69	-66
East Storage Level	290	317	358	396	435	485
Weekly Change	-27	-41	-38	-39	-50	-56
vs LY	-41	-38	-31	-37	-56	-52
vs 5Yr Avg	-43	-48	-39	-32	-36	-27
Mountain Storage Level	87	93	96	105	114	121
Weekly Change	-6	-3	-9	-9	-7	-12
vs LY	-27	-21	-22	-20	-25	-30
vs 5Yr Avg	-14	-10	-13	-10	-10	-12
Pacific Storage Level	155	162	164	176	177	181
Weekly Change	-7	-2	-12	-1	-4	-15
vs LY	-45	-44	-47	-46	-69	-77
vs 5Yr Avg	-19	-16	-19	-15	-25	-29

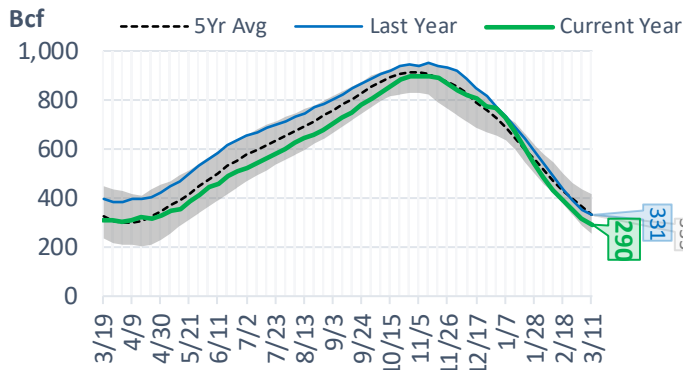
NonSalt Storage Levels



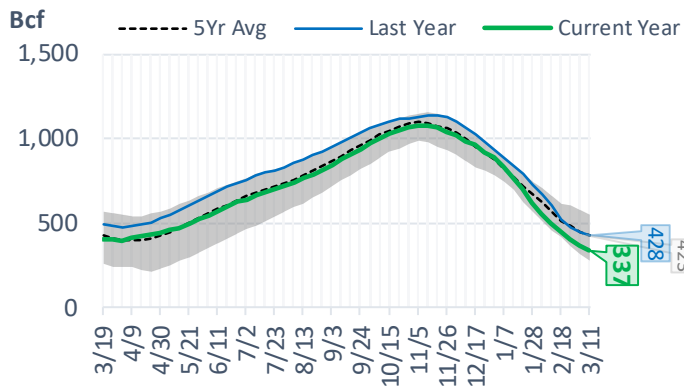
Salt Storage Levels



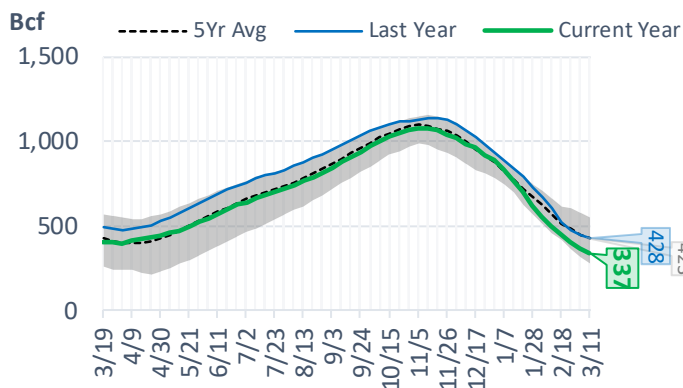
East Storage Levels



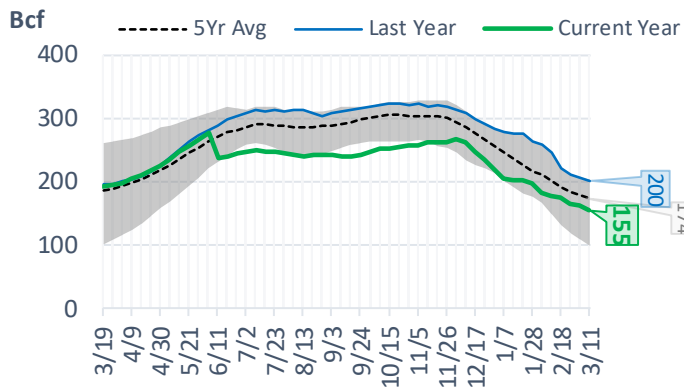
Midwest Storage Levels



Midwest Storage Levels



Pacific Storage Levels



EIA Storage Week Balances

	11-Feb	18-Feb	25-Feb	4-Mar	11-Mar	18-Mar	WoW	vs. 4W
Lower 48 Dry Production	91.5	95.6	94.2	94.1	94.7	93.6	▼ -1.1	▼ -1.1
Canadian Imports	7.1	6.2	6.4	5.9	5.2	5.3	▲ 0.1	▼ -0.7
L48 Power	29.4	26.8	27.3	28.2	26.6	26.5	▼ -0.2	▼ -0.8
L48 Residential & Commercial	45.8	40.3	41.4	38.6	33.6	31.9	▼ -1.7	▼ -6.6
L48 Industrial	24.6	26.1	26.2	23.7	23.2	21.2	▼ -2.0	▼ -3.6
L48 Lease and Plant Fuel	5.0	5.2	5.1	5.1	5.2	5.1	▼ -0.1	▼ -0.1
L48 Pipeline Distribution	3.5	3.2	3.2	3.3	3.1	3.0	▼ -0.1	▼ -0.2
L48 Regional Gas Consumption	108.3	101.6	103.2	98.9	91.7	87.7	▼ -4.0	▼ -11.2
Net LNG Exports	12.4	13.0	11.7	12.5	12.8	12.9	▲ 0.1	▲ 0.4
Total Mexican Exports	6.1	6.1	6.1	6.4	6.6	6.5	▼ 0.0	▲ 0.3
Implied Daily Storage Activity	-28.2	-18.9	-20.5	-17.9	-11.2	-8.3	2.9	
EIA Reported Daily Storage Activity	-27.1	-18.4	-19.9	-17.7	-11.3			
Daily Model Error	-1.0	-0.4	-0.6	-0.2	0.1			

Monthly Balances

	2Yr Ago Mar-20	LY Mar-21	Nov-21	Dec-21	Jan-22	Feb-22	MTD Mar-22	MoM	vs. LY
Lower 48 Dry Production	94.2	91.3	95.7	96.2	94.3	93.5	94.2	▲ 0.8	▲ 2.9
Canadian Imports	4.1	4.8	5.3	4.8	6.7	6.6	5.2	▼ -1.4	▲ 0.5
L48 Power	28.3	24.5	29.2	28.5	30.7	28.2	26.5	▼ -1.7	▲ 2.0
L48 Residential & Commercial	27.6	28.9	28.4	33.8	49.1	43.0	32.4	▼ -10.6	▲ 3.5
L48 Industrial	22.3	19.3	23.0	22.9	26.4	25.6	22.2	▼ -3.3	▲ 3.0
L48 Lease and Plant Fuel	5.1	5.0	5.3	5.3	5.2	5.1	5.1	▲ 0.0	▲ 0.2
L48 Pipeline Distribution	2.9	2.8	2.9	3.2	3.9	3.4	3.1	▼ -0.3	▲ 0.3
L48 Regional Gas Consumption	86.2	80.4	88.8	93.7	115.2	105.3	89.4	▼ -15.9	▲ 9.0
Net LNG Exports	8.5	11.1	11.4	12.1	12.4	12.4	12.7	▲ 0.3	▲ 1.6
Total Mexican Exports	5.4	6.5	6.1	6.2	6.3	6.2	6.6	▲ 0.4	▲ 0.1
Implied Daily Storage Activity	-1.9	-2.0	-5.3	-11.0	-32.9	-23.8	-9.2		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

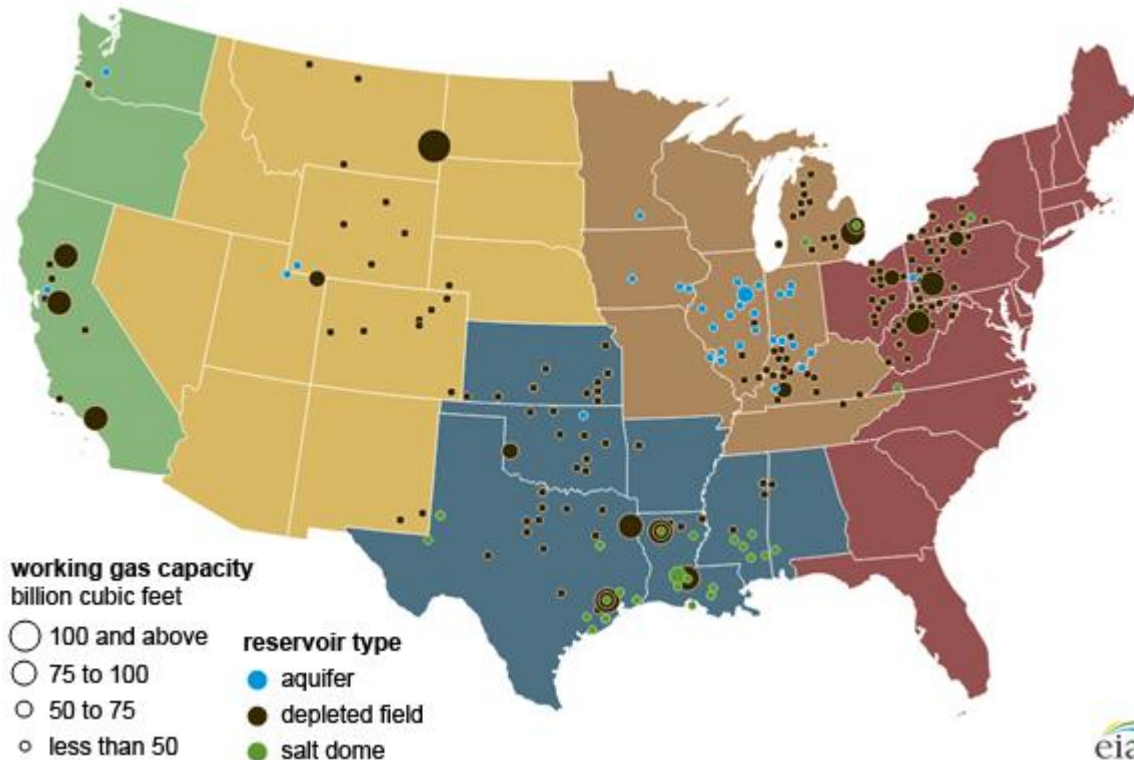
Regional S/D Models Storage Projection

Week Ending 18-Mar

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-7.9	0.0	-7.9	-55
East	-5.8	2.2	-3.6	-25
Midwest	-2.2	-0.2	-2.4	-17
Mountain	3.6	-3.8	-0.2	-1
South Central	-4.4	2.2	-2.2	-15
Pacific	0.9	-0.4	0.5	4

*Adjustment Factor is calculated based on historical regional deltas

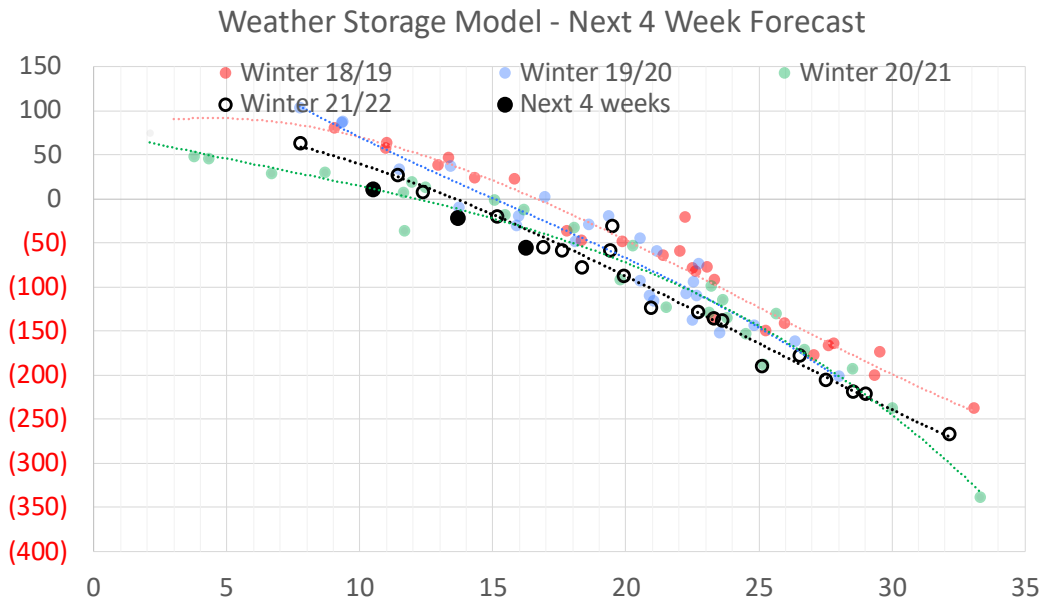
U.S. underground natural gas storage facilities by type (July 2015)



Weather Model Storage Projection

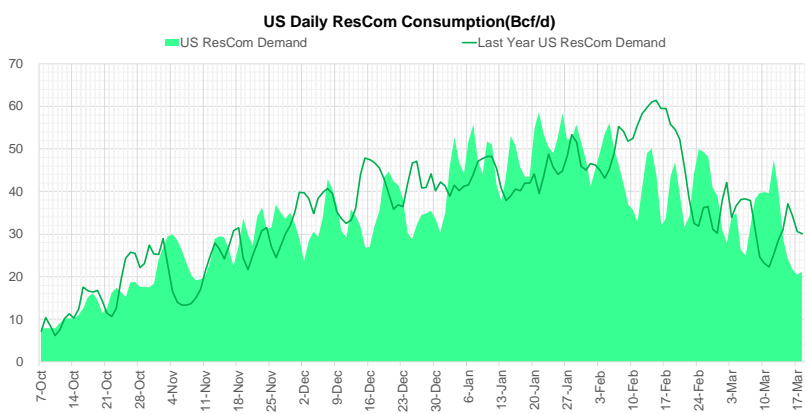
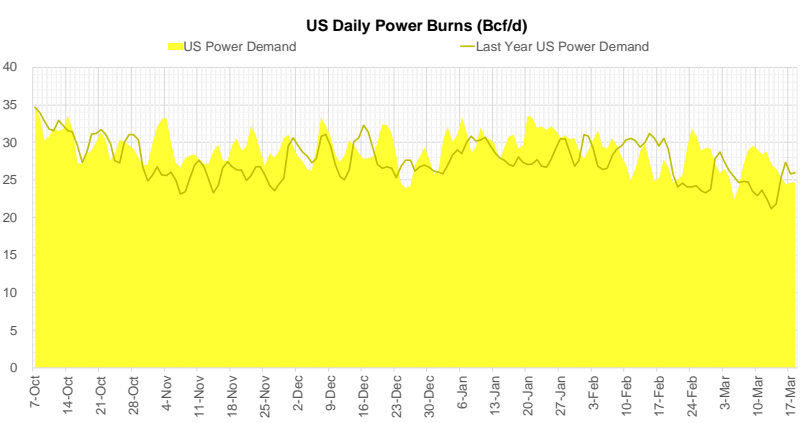
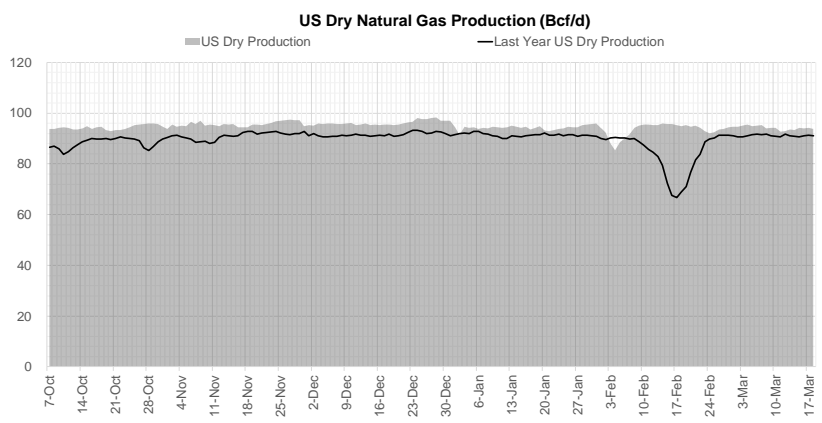
Next report
and beyond

Week Ending	GWDDs	Week Storage Projection
18-Mar	16	-55
25-Mar	10	11
01-Apr	14	-21
08-Apr	#N/A	#N/A



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

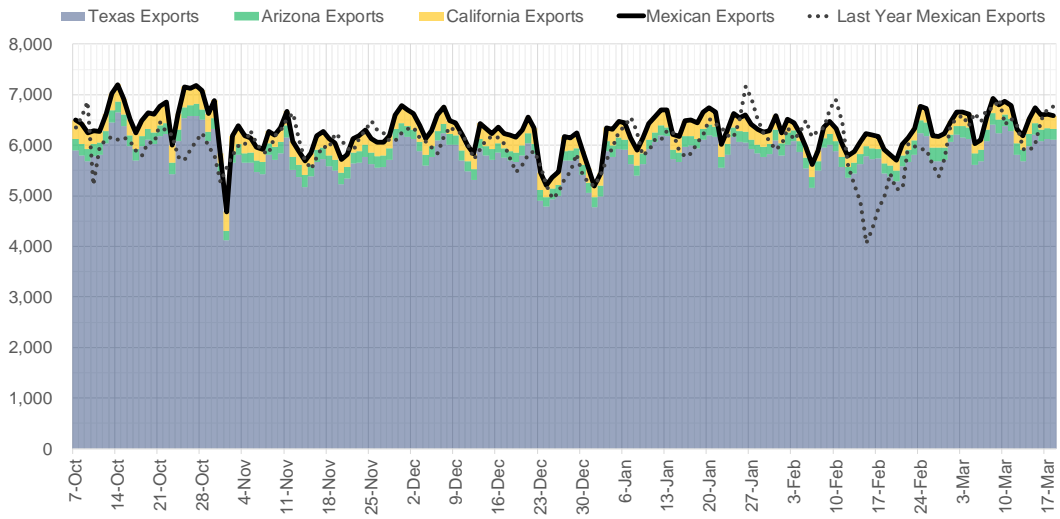
Supply – Demand Trends



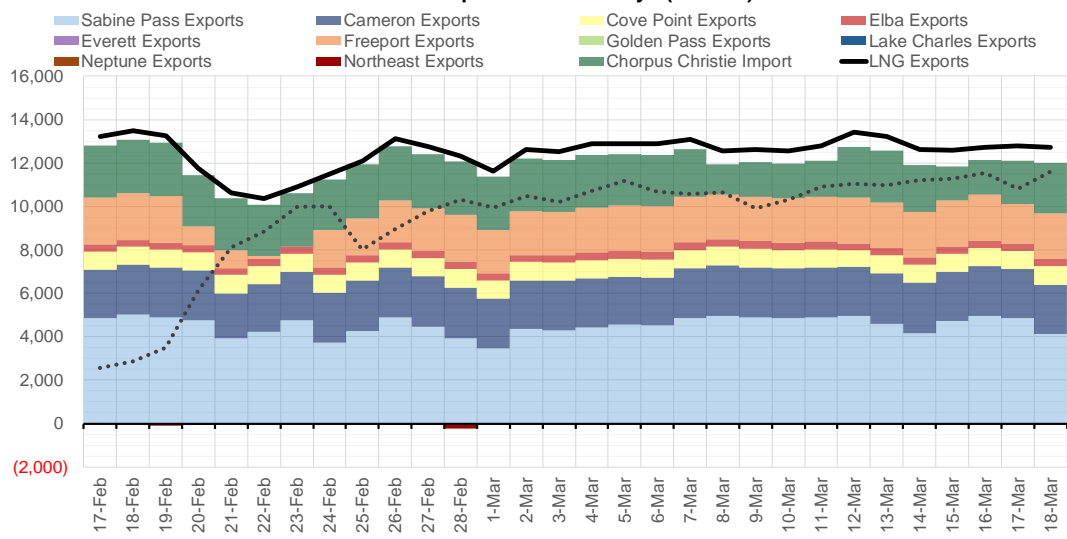
Source: Bloomberg

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.

Mexican Exports (MMcf/d)



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



Source: 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.

Nat Gas Options Volume and Open Interest CME and ICE data combined

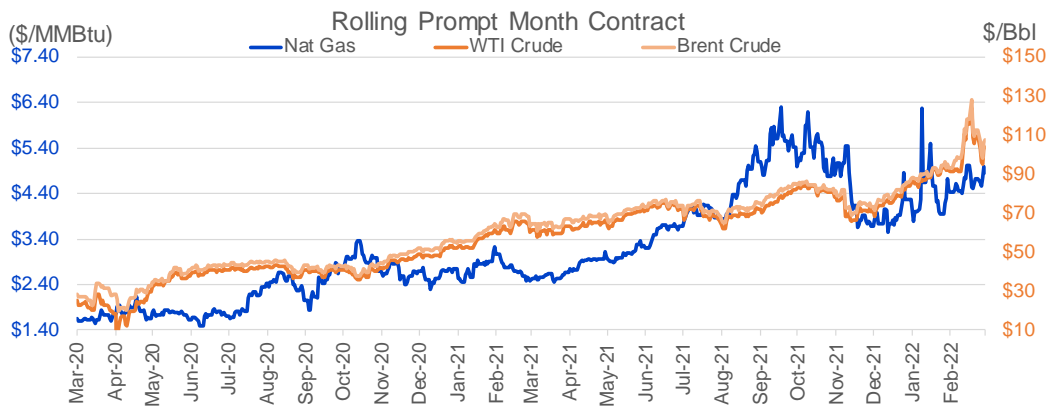
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
4	2022	C	5.00	8342	4	2022	P	3.50	34519
4	2022	C	5.25	4809	4	2022	C	5.00	33796
5	2022	P	4.00	4347	4	2022	C	4.75	30326
4	2022	C	5.50	4325	4	2022	P	3.00	28951
5	2022	P	4.25	3480	10	2022	C	6.00	27336
10	2022	C	6.00	2924	10	2022	C	5.00	26214
12	2022	P	5.00	2886	4	2022	P	4.00	25222
12	2022	P	5.25	2886	4	2022	P	3.75	24212
4	2022	C	5.10	2864	6	2022	C	6.00	23036
4	2022	P	4.25	2521	5	2022	P	3.00	22965
4	2022	P	4.00	2085	5	2022	C	5.00	22704
4	2022	C	4.90	2044	5	2022	P	4.00	22419
4	2022	C	6.00	1791	4	2022	C	6.00	22187
6	2022	C	7.00	1777	7	2022	C	6.00	21424
4	2022	C	5.75	1629	5	2022	C	6.00	20751
5	2022	C	6.00	1594	9	2022	C	6.00	20372
5	2022	P	4.50	1590	5	2022	P	2.50	19898
7	2022	P	4.00	1534	8	2022	C	6.00	19497
5	2022	P	4.75	1407	5	2022	P	3.50	19430
4	2022	P	4.50	1389	6	2022	P	4.00	19065
7	2022	C	6.00	1342	4	2022	P	4.50	18857
5	2022	C	5.25	1209	10	2022	P	3.00	18647
8	2022	C	6.00	1013	6	2022	C	5.00	18344
10	2022	P	4.00	1010	4	2022	C	5.50	18319
11	2022	P	4.00	1000	12	2022	C	5.00	17968
12	2022	P	4.00	1000	6	2022	P	3.00	17945
4	2022	P	4.40	969	4	2022	C	4.50	17754
5	2022	C	5.00	905	5	2022	P	2.75	17685
5	2022	C	6.50	904	4	2022	C	3.00	17511
5	2022	P	3.25	900	4	2022	P	2.50	17245
4	2022	C	7.00	872	4	2022	P	4.25	16760
6	2022	C	6.00	809	10	2022	C	7.00	16457
4	2022	P	4.10	805	7	2022	P	3.25	16411
12	2022	C	6.00	802	12	2022	C	6.00	15470
8	2022	C	5.00	801	9	2022	P	2.50	15386
7	2022	C	7.50	778	4	2022	C	8.00	15346
8	2022	P	4.00	749	6	2022	P	3.50	15149
6	2022	C	5.00	730	8	2022	P	3.00	15091
7	2022	P	4.50	728	4	2022	P	3.25	14884
7	2022	C	8.00	700	7	2022	P	3.00	14639
9	2022	P	4.00	700	10	2022	P	2.00	14421
6	2022	P	4.00	688	5	2022	C	7.00	14404
10	2022	C	5.25	610	1	2023	C	5.00	14379
1	2023	C	5.00	600	5	2022	P	3.75	14124
2	2023	C	5.00	600	6	2022	C	4.50	14048
3	2023	C	5.00	600	9	2022	P	2.75	13933
3	2023	C	20.00	600	6	2022	P	3.75	13867
6	2022	C	7.50	568	5	2022	C	3.00	13733
4	2022	C	8.00	563	7	2022	C	5.00	13555
					8	2022	C	7	13480

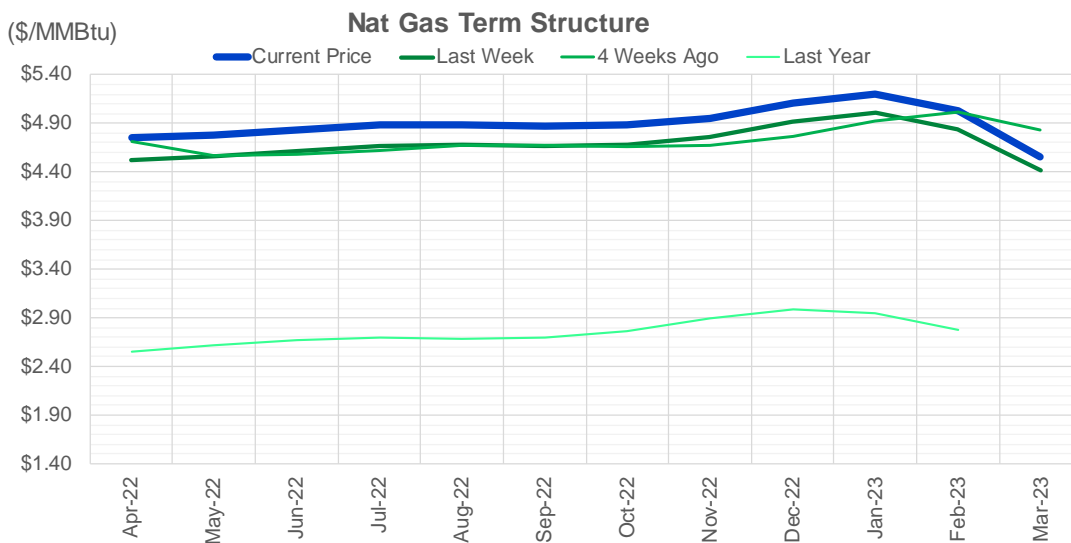
Source: CME, ICE

Nat Gas Futures Open Interest CME and ICE data 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
APR 22	64079	66164	-2085	APR 22	72832	73375	-543
MAY 22	214849	209500	5349	MAY 22	79016	78067	950
JUN 22	68860	69223	-363	JUN 22	70436	70500	-65
JUL 22	88044	87879	165	JUL 22	66452	67165	-713
AUG 22	42832	43336	-504	AUG 22	60146	60093	52
SEP 22	74730	74219	511	SEP 22	63719	63420	299
OCT 22	82023	82385	-362	OCT 22	69828	68884	944
NOV 22	42695	42327	368	NOV 22	54125	54264	-140
DEC 22	44822	44826	-4	DEC 22	63171	63505	-334
JAN 23	58861	58288	573	JAN 23	63671	63278	393
FEB 23	19919	19623	296	FEB 23	46152	45925	227
MAR 23	38444	37767	677	MAR 23	51157	51153	4
APR 23	45774	45167	607	APR 23	49221	49139	82
MAY 23	25493	24714	779	MAY 23	44174	44071	103
JUN 23	15006	14484	522	JUN 23	41000	40960	40
JUL 23	11769	11931	-162	JUL 23	40352	40350	3
AUG 23	10884	9867	1017	AUG 23	39835	39797	39
SEP 23	12777	12770	7	SEP 23	39788	39750	38
OCT 23	25470	24401	1069	OCT 23	44137	44085	52
NOV 23	10384	10439	-55	NOV 23	40885	40730	156
DEC 23	14308	14315	-7	DEC 23	36331	36227	104
JAN 24	19042	18396	646	JAN 24	32354	32063	290
FEB 24	3782	3515	267	FEB 24	22760	22351	409
MAR 24	14147	14137	10	MAR 24	27287	27074	213
APR 24	7233	7218	15	APR 24	20511	20481	30
MAY 24	2258	2258	0	MAY 24	19678	19746	-68
JUN 24	1125	1117	8	JUN 24	19453	19447	7
JUL 24	1373	1363	10	JUL 24	19978	20039	-61
AUG 24	1056	1051	5	AUG 24	20036	20023	14
SEP 24	1173	1163	10	SEP 24	19495	19567	-72

Source: CME, ICE






	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23
Current Price	\$4.748	\$4.784	\$4.829	\$4.880	\$4.888	\$4.870	\$4.885	\$4.956	\$5.104	\$5.198	\$5.027	\$4.558
Last Week	\$4.526	\$4.561	\$4.610	\$4.670	\$4.682	\$4.666	\$4.683	\$4.765	\$4.914	\$5.010	\$4.844	\$4.417
vs. Last Week	\$0.222	\$0.223	\$0.219	\$0.210	\$0.206	\$0.204	\$0.202	\$0.191	\$0.190	\$0.188	\$0.183	\$0.141
4 Weeks Ago	\$4.717	\$4.572	\$4.582	\$4.623	\$4.671	\$4.678	\$4.659	\$4.679	\$4.766	\$4.918	\$5.015	\$4.833
vs. 4 Weeks Ago	\$0.031	\$0.212	\$0.247	\$0.257	\$0.217	\$0.192	\$0.226	\$0.277	\$0.338	\$0.280	\$0.012	-\$0.275
Last Year	\$2.528	\$2.555	\$2.613	\$2.675	\$2.691	\$2.680	\$2.694	\$2.767	\$2.897	\$2.991	\$2.942	\$2.778
vs. Last Year	\$2.220	\$2.229	\$2.216	\$2.205	\$2.197	\$2.190	\$2.191	\$2.189	\$2.207	\$2.207	\$2.085	\$1.780

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224	▲ 0.000	▲ 0.000	▲ 2.204
NatGas Oct21/Nov21	\$/MMBtu	0.361	▲ 0.000	▲ 0.000	▲ 0.285
NatGas Oct21/Jan22	\$/MMBtu	-1.817	▲ 0.000	▲ 0.000	▼ -2.124
NatGas Apr22/Oct22	\$/MMBtu	0.125	▼ -0.036	▼ -0.008	▲ 0.070
WTI Crude	\$/Bbl	102.98	▼ -3.040	▲ 11.220	▲ 42.980
Brent Crude	\$/Bbl	106.64	▼ -2.690	▲ 13.670	▲ 43.360
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	348.74	▲ 19.120	▲ 70.120	▲ 170.320
Propane, Mt. Bel	cents/Gallon	1.40	▼ -0.059	▲ 0.124	▲ 0.485
Ethane, Mt. Bel	cents/Gallon	0.42	▲ 0.006	▲ 0.031	▲ 0.207
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▲ 0.000
Coal, PRB	\$/MMBtu	0.70			

Source: CME, Bloomberg

Baker Hughes Rig Counts

Rotary Rig Count						Baker Hughes 
3/18/2022						
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago	
Oil	524	-3	527	206	318	
Gas	137	2	135	45	92	
Miscellaneous	2	1	1	1	1	
Directional	36	3	33	22	14	
Horizontal	606	-1	607	234	372	
Vertical	21	-2	23	-4	25	
Canada Breakout	This Week	+/-	Last Week	+/-	Year Ago	
Oil	103	-24	127	62	41	
Gas	73	-6	79	22	51	
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago	
Ardmore Woodford	1	1	0	1	0	
Arkoma Woodford	2	0	2	2	0	
Barnett	3	0	3	2	1	
Cana Woodford	28	0	28	17	11	
DJ-Niobrara	14	0	14	7	7	
Eagle Ford	55	-1	56	23	32	
Granite Wash	3	0	3	3	0	
Haynesville	66	1	65	21	45	
Marcellus	36	0	36	6	30	
Mississippian	1	0	1	1	0	
Permian	316	0	316	100	216	
Utica	12	0	12	3	9	
Williston	33	-1	34	20	13	