

This past week the EIA released the L48 monthly supply & demand for December 2021 to finally give a full view of 2021. It was quite the year with wild weather, low coal stock and strong power burns, low hydro, fluctuating wind, stagnant to rising production, and the list goes on.

All this resulted in one of the most volatile years for natural gas price.

We have taken this data and published it in a number of interactive charts that you can play around with. Drop me a line at het@analytix.ai if you want the keys to these charts to play around with, or want to excel sheet for the data below.

Let's start with a YoY table followed by all the interesting charts.

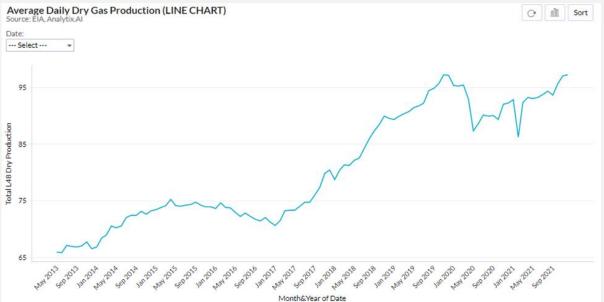
				,									
	Month	ly Leve	els (Bcf	/d)									
L48 S&D	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Cal20
Dry Production	92.8	86.2	92.3	93.2	93.0	93.2	93.7	94.3	93.6	95.6	97.0	97.2	93.5
Alaska Dry Production	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Supplemental Gas	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.2
Power Burn Consumption	28.1	28.1	24.3	25.2	26.3	36.2	39.8	40.7	33.2	30.4	29.4	28.6	30.9
Res Consumption	28.3	30.9	18.3	11.3	7.0	4.3	3.6	3.4	3.9	6.2	15.8	21.4	12.9
Comm Consumption	15.9	17.6	11.4	8.1	5.8	4.7	4.6	4.5	5.0	6.3	11.1	12.9	9.0
Ind Consumption	25.3	23.7	22.5	22.3	21.0	21.0	21.2	21.3	20.8	21.6	24.1	24.7	22.5
Vehicle Fuel Consumption	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Lease and Plant Fuel	5.0	4.6	5.0	5.0	5.0	5.0	5.1	5.1	5.1	5.2	5.3	5.3	5.1
Pipeline and Distribution	3.5	3.6	2.8	2.5	2.2	2.4	2.5	2.6	2.3	2.4	2.9	3.2	2.7
Net Imports from Canada	6.2	6.7	4.7	4.5	4.3	4.6	5.1	4.8	4.9	5.3	5.2	4.6	5.1
Net Exports to Mexico	5.6	4.9	5.9	6.1	6.2	6.6	6.4	6.2	6.0	5.9	5.5	5.4	5.9
Net LNG Exports	9.6	7.2	10.3	10.2	10.1	9.0	9.6	9.6	9.5	9.6	10.2	11.1	9.7
Balancing Item	-0.6	-0.3	1.5	-1.1	-0.2	-0.2	-0.4	-0.5	0.1	-1.7	-2.4	0.3	-0.4
End of Month Storage Level	2608	1833	1777	1951	2363	2556	2724	2886	3275	3634	3504	3182	
Monthly Storage Change	-704.4	-774.8	-56.1	173.7	412.2	192.9	168.1	161.9	388.4	359.7	-130.3	-321.5	
	Year-o	n-Year	(Bcf/d))									
1.48 S&D VoV	Jan 21	Eab 21	Mar-21	Apr 21	May 21	lun_21	lul_21	Δ11α-21	San 21	Oct-21	Nov-21	Dec-21	VoV

	Year-o	n-Year	(Bcf/d)									
L48 S&D YoY	Jan-21	Feb-21	M ar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	YoY
Dry Production	-2.5	-9.0	-3.1	0.4	5.7	4.6	3.5	4.4	3.7	6.3	5.0	5.0	1 2.0
Alaska Dry Production	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.0	-0.1	→ 0.0
Supplemental Gas	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	→ 0.0
Power Burn Consumption	-1.9	-2.2	-4.1	-0.3	-0.6	1.3	-4.4	-0.6	-1.4	-0.3	3.8	0.4	. -0.9
Res Consumption	1.7	5.5	1.3	-1.3	-0.7	-0.3	-0.2	-0.1	-0.3	-1.6	1.1	-4.4	→ 0.1
Comm Consumption	0.0	2.1	0.5	0.2	0.6	0.3	0.4	0.3	0.2	-0.5	1.3	-1.8	♠ 0.3
Ind Consumption	0.1	-1.2	-0.4	1.2	1.1	1.0	0.8	0.4	-0.6	-0.5	0.7	-0.4	
Vehicle Fuel Consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	⊕ 0.0
Lease and Plant Fuel	-0.1	-0.5	-0.2	0.0	0.3	0.3	0.2	0.3	0.2	0.4	0.3	0.3	
Pipeline and Distribution	0.0	0.1	-0.1	0.0	0.1	0.1	-0.1	0.0	0.0	-0.1	0.3	-0.2	→ 0.0
Net Imports from Canada	1.4	1.3	0.7	0.6	0.5	0.7	0.8	0.1	1.2	1.3	0.9	-1.1	♠ 0.7
Net Exports to Mexico	0.4	-0.3	0.5	1.5	1.5	1.2	0.5	0.3	-0.1	0.0	0.0	0.1	♠ 0.5
Net LNG Exports	2.0	-0.4	2.5	3.3	4.3	5.6	6.7	6.1	4.5	2.4	0.9	1.5	♠ 3.3
Balancing Item	-0.8	1.6	2.3	-0.8	-0.7	0.4	-0.2	-0.2	-0.5	0.7	-2.1	0.4	→ 0.0
End of Month Storage Level	20.2	-221.7	-228.6	-358.5	-390.3	-551.6	-542.3	-606.7	-534.1	-262.9	-397.8	-130.3	
Monthly Storage Change	-136.8	-241.9	-6.9	-129.9	-31.9	-161.3	9.4	-64.4	72.6	271.2	-134.9	267.5	
Working Storage Change	-130.0	-241.9	-0.9	-129.9	-31.8	-101.3	9.4	-04.4	12.0	211.2	-134.9	207.5	

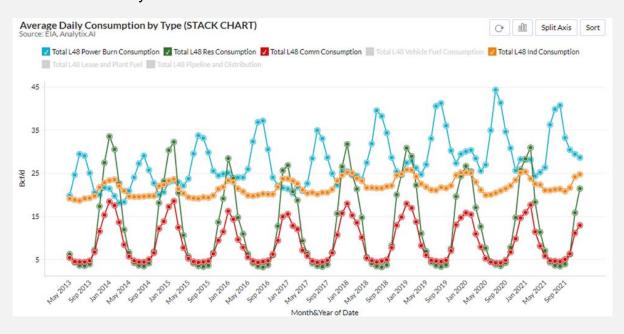


Production:

L48 dry gas production closed the year at the same record level reached in Nov 2019. We are likely to see some new highs in 2022 as freeze-offs roll away, and continued growth in rigs (with oil and gas prices well above key shale region breakeven costs)

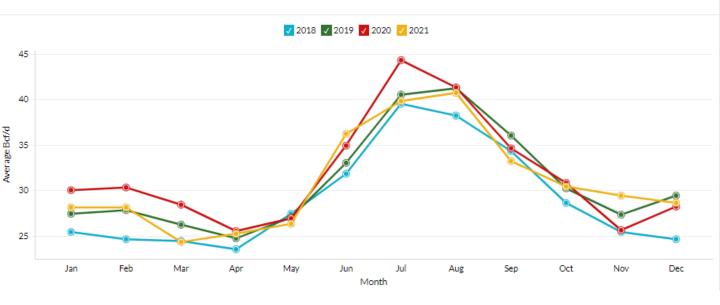


All eyes will be on consumption this year. Not specifically ResComm, but power gen and industrial. Power generation will be impacted by the continued low coal stocks and potentially low hydro year (again). Last year we saw incredible gas burns even as gas prices jumped through the summer. Industrial will be another interesting factor to track as the US fires back up after a few COVID years.

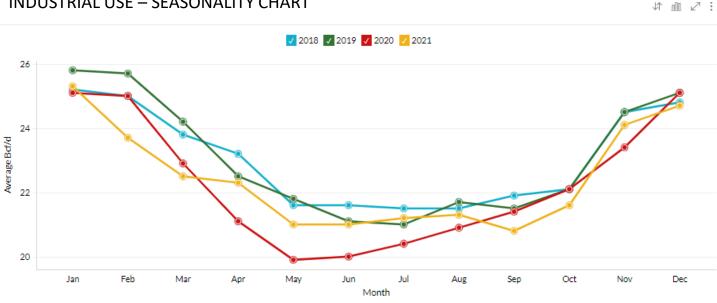




POWER BURNS - SEASONALITY CHART

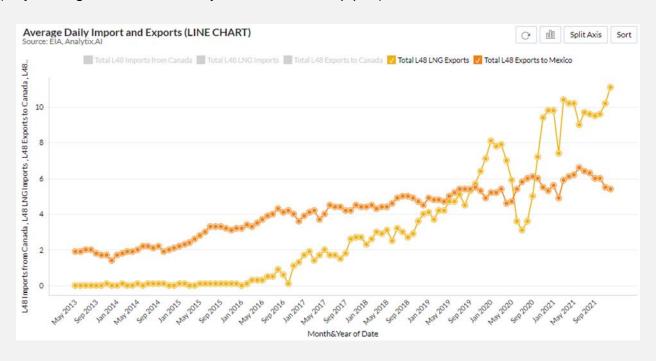


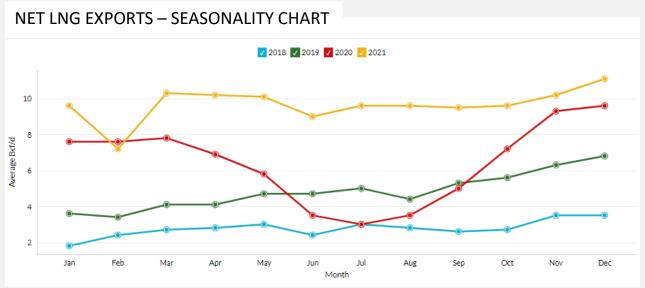
INDUSTRIAL USE - SEASONALITY CHART





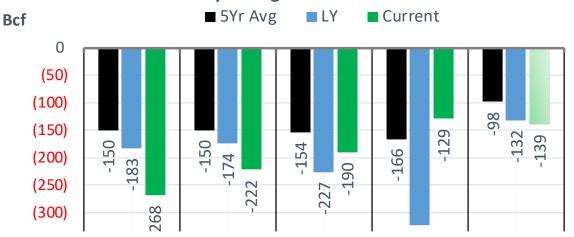
Both LNG and Mexican pipe exports continue to grow last year with new records. We expect this trend to continue as new LNG capacity comes online, and wide global gas spreads continue to keep LNG terminals operating at strong levels. The piped gas to Mexico will also increase as a result of these wide LNG arbs and growing domestic Mexican pipe infrastructure (why send gas via LNG when you can flow it via pipes).



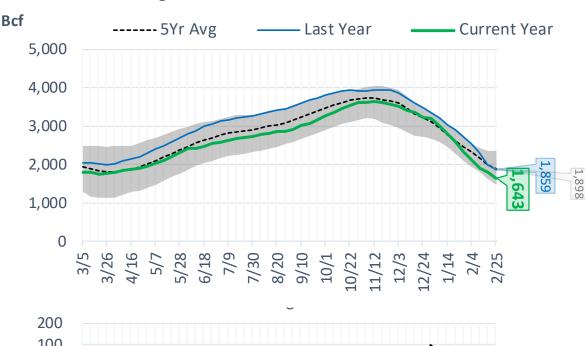


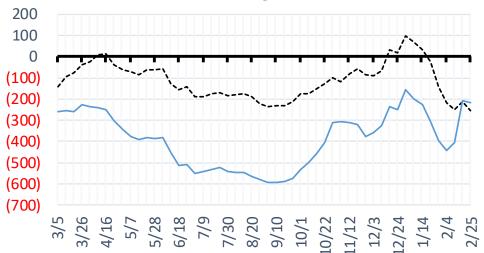


Total Lower 48 YoY Weekly Change



Total Lower 48 Storage Levels



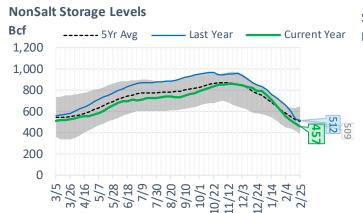


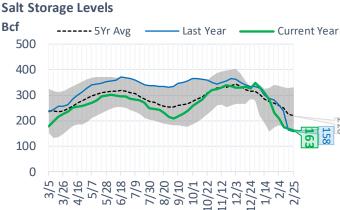


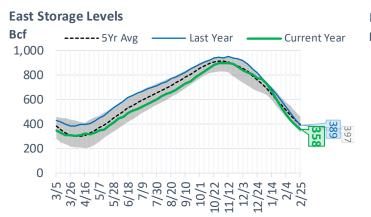
Natural Gas Storage Stats - Last 5 Weeks

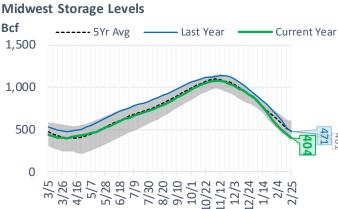
	Current	Week - 1	Week - 2	Week - 3	Week - 4	Week - 5
Week Ending	25-Feb	18-Feb	11-Feb	4-Feb	28-Jan	21-Jan
Total Lower 48 Storage Level	1643	1782	1911	2101	2323	2591
Weekly Change	-139	-129	-190	-222	-268	-219
vs LY	-216	-209	-404	-441	-393	-308
vs 5Yr Avg	-255	-214	-251	-215	-143	-25
S. Central Salt Storage Level	163	168	173	207	231	279
Weekly Change	-5	-5	-34	-24	-48	-29
vs LY	+5	+6	-64	-57	-51	-10
vs 5Yr Avg	-57	-58	-76	-53	-38	+5
S. Central NonSalt Storage Level	457	487	516	556	606	658
Weekly Change	-30	-29	-40	-50	-52	-53
vs LY	-55	-43	-86	-103	-88	-72
vs 5Yr Avg	-52	-34	-35	-26	-8	+11
Midwest Storage Level	404	450	496	552	616	701
Weekly Change	-46	-46	-56	-64	-85	-69
vs LY	-67	-70	-104	-122	-112	-86
vs 5Yr Avg	-77	-65	-69	-66	-53	-17
East Storage Level	358	396	435	485	541	609
Weekly Change	-38	-39	-50	-56	-68	-60
vs LY	-31	-37	-56	-52	-49	-37
vs 5Yr Avg	-39	-32	-36	-27	-16	+10
Mountain Storage Level	96	105	114	121	133	143
Weekly Change	-9	-9	-7	-12	-10	-8
vs LY	-22	-20	-25	-30	-27	-28
vs 5Yr Avg	-13	-10	-10	-12	-8	-7
Pacific Storage Level	164	176	177	181	196	201
Weekly Change	-12	-1	-4	-15	-5	0
vs LY	-47	-46	-69	-77	-67	-74
vs 5Yr Avg	-19	-15	-25	-29	-21	-26

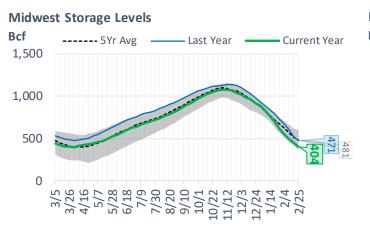


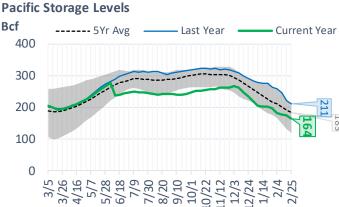














EIA Reported Daily Storage Activity

Daily Model Error

Market Report

-38.3

-0.7

	28-Jan	4-Feb	11-Feb	18-Feb	25-Feb	4-Mar	WoW	vs. 4W
Lower 48 Dry Production	93.9	93.8	91.5	95.5	94.2	94.2	0.1	0.5
Canadian Imports	7.1	7.1	7.1	6.2	6.4	5.8	▼-0.6	▼-0.9
L48 Power	31.9	29.7	29.4	26.8	27.3	28.2	1.0	▼ 0.0
L48 Residential & Commercial	53.5	49.0	45.8	40.3	41.4	38.6	▼ -2.8	▼ -5.5
L48 Industrial	26.4	27.0	24.6	26.1	26.2	25.9	▼-0.3	▼ -0.1
L48 Lease and Plant Fuel	5.1	5.1	5.0	5.2	5.1	5.1	▼ 0.0	0.0
L48 Pipeline Distribution	4.1	3.8	3.5	3.2	3.2	3.3	0.0	- 0.2
L48 Regional Gas Consumption	121.1	114.6	108.3	101.6	103.2	101.1	▼ -2.1	▼ -5.8
Net LNG Exports	12.5	12.1	12.4	13.0	11.7	12.5	8.0	0.2
Total Mexican Exports	6.5	6.4	6.1	6.0	6.1	6.4	0.3	0.3
Implied Daily Storage Activity	-39.0	-32.2	-28.2	-18.8	-20.5	-20.0	0.5	

-31.7

-0.5

-27.1

-1.1

-18.4

-0.4

-19.9

-0.6

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	95.0	1.5	▲ 3.6
Canadian Imports	4.1	4.8	5.3	4.8	6.7	6.6	5.1	▼-1.5	0.4
L48 Power	28.3	24.5	29.2	28.5	30.7	28.2	26.6	▼ -1.6	2.1
L48 Residential & Commercial	27.6	28.9	28.4	33.8	49.1	43.0	31.0	▼-12.0	2.1
L48 Industrial	22.3	19.3	23.0	22.9	26.4	25.5	21.7	▼-3.7	2.5
L48 Lease and Plant Fuel	5.1	5.0	5.3	5.3	5.2	5.1	5.2	0.1	0.2
L48 Pipeline Distribution	2.9	2.8	2.9	3.2	3.9	3.4	3.0	▼-0.4	0.2
L48 Regional Gas Consumption	86.2	80.4	88.8	93.7	115.2	105.1	87.5	▼-17.6	7.1
Net LNG Exports	8.5	11.1	11.4	12.1	12.4	12.4	12.3	▼-0.1	1.2
Total Mexican Exports	5.4	6.5	6.1	6.2	6.3	6.2	6.5	0.3	▼ 0.0
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	-1.9	-2.0	-5.3	-11.0	-32.9	-23.6	-6.2		

Source: Bloomberg, analytix.ai

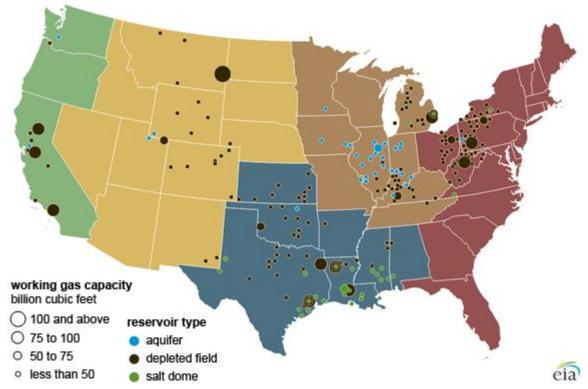
Regional S/D Models Storage Projection

Week Ending 4-Mar

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-19.9	0.5	-19.4	-136
East	-8.4	2.0	-6.4	-45
Midwest	-5.3	0.0	-5.3	-37
Mountain	2.4	-3.8	-1.4	-10
South Central	-8.5	2.9	-5.6	-39
Pacific	-0.1	-0.6	-0.7	-5

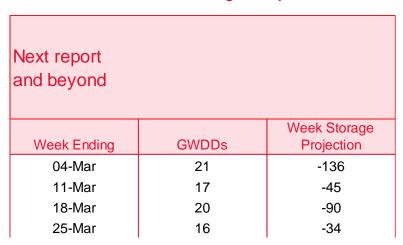
^{*}Adjustment Factor is calcuated based on historical regional deltas

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

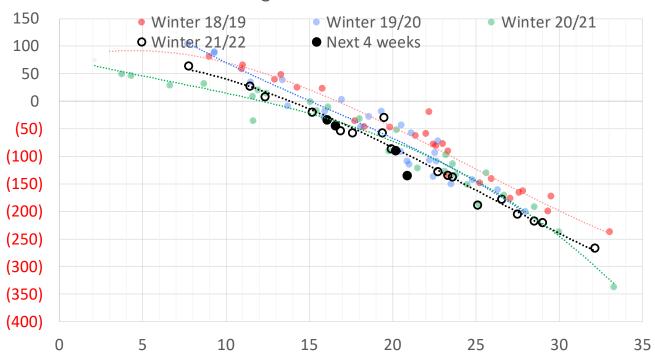




Weather Model Storage Projection



Weather Storage Model - Next 4 Week Forecast

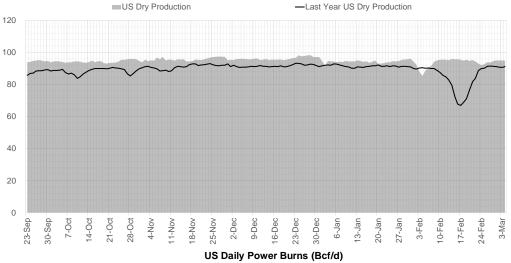


Note: this is not our official end of season forecast. This chart signifies where storage levels end with 10-year normal weather and current market tightness relative to last year

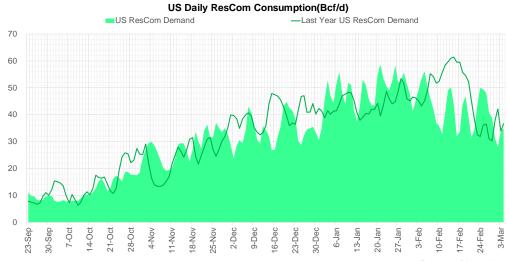


Supply - Demand Trends

US Dry Natural Gas Production (Bcf/d)



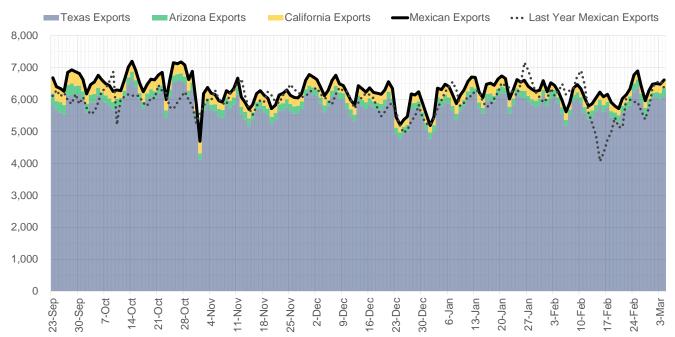
30-Sep 14-Oct 14-Oct 14-Oct 15-Dcc 28-Oct 19-Dcc 28-Oct 19-Dcc 19-Dcc



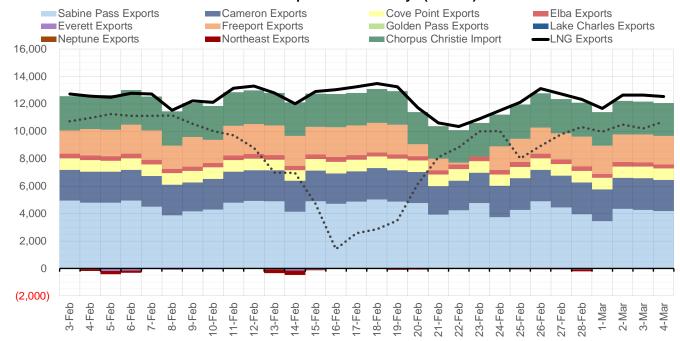
Source: Bloomberg



Mexican Exports (MMcf/d)



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



Source: Bloomberg



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	2022	Р	3.75	11140	4	2022	Р	3.50	32886
6	2022	P	3.75	11124	4	2022	С	5.00	32467
4	2022	P	4.00	4739	4	2022	Р	3.00	30079
4	2022	C	5.00	4670	10	2022	С	6.00	28592
4	2022	P	4.50	3403	4	2022	С	4.75	28430
6	2022	P	3.25	2554	10	2022	С	5.00	25829
3	2023	C	20.00	2550	4	2022	Р	4.00	23296
5	2022	P	3.75	2381	5	2022	Р	3.00	22451
4	2022	C	5.25	2324	6	2022	С	6.00	22420
4	2022	Ċ	6.00	2247	4	2022	С	6.00	22198
5	2022	P	3.50	2168	5	2022	С	5.00	21908
6	2022	Р	3.50	2125	4	2022	Р	3.75	21522
4	2022	C	5.50	2119	5	2022	Р	2.50	19900
6	2022	Č	6.00	2118	5	2022	С	6.00	19663
3	2023	Č	6.00	2100	6	2022	С	5.00	18753
5	2022	P	4.00	2058	9	2022	С	6.00	18632
8	2022	P	3.75	1747	10	2022	Р	3.00	18434
5	2022	C	5.00	1743	4	2022	С	4.50	18383
5	2022	Č	6.50	1693	12	2022	С	5.00	18346
7	2022	P	3.25	1614	6	2022	Р	3.00	18230
10	2022	r P	4.00	1562	4	2022	Р	4.50	18121
8	2022	P	3.60	1472	8	2022	С	6.00	17730
o 5	2022	C	6.00	1472	4	2022	С	3.00	17511
7	2022	P	4.00	1438	5	2022	Р	2.75	17385
7	2022	C	6.00	1406	4	2022	Р	2.50	17297
8	2022	C	6.00	1388	4	2022	С	5.50	16877
6	2022	P	3.00	1367	7	2022	С	6.00	16854
9	2022	C	6.00	1260	7	2022	Р	3.25	16736
9 7	2022	P	3.75	1160	6	2022	Р	3.75	16358
6	2022	C	6.50	1142	5	2022	Р	4.00	16314
6	2022	C	7.00	1136	4	2022	Р	3.25	15214
10	2022	C	6.00	1128	8	2022	Р	3.00	15166
		P			4	2022	С	8.00	15106
4	2022	P P	3.00	1098	7	2022	Р	3.00	15009
9	2022		4.00	1082	10	2022	С	7.00	14837
5	2022	C P	7.00	1078	7	2022	С	5.00	14693
6	2022		4.00	1066	1	2023	С	5.00	14279
4	2022	С	7.00	1006	5	2022	С	7.00	14225
7	2022	P	3.50	947	6	2022	С	4.50	13923
4	2022	С	6.50	941	10	2022	Р	2.00	13921
5	2022	С	5.50	938	9	2022	Р	3.00	13899
4	2022	С	5.75	926	5	2022	С	3.00	13733
8	2022	P	3.00	900	5	2022	Р	3.50	13661
10	2022	P	3.00	900	12	2022	С	6.25	13633
9	2022	P	3.50	846	4	2022	С	7.00	13572
8	2022	P	4.00	845	6	2022	С	3.00	13438
7	2022	C	5.50	836	5	2022	С	4.00	13434
10	2022	P	3.50	812	7	2022	С	3.00	13230
8	2022	С	5.50	809	8	2022	С	3.00	13226
6	2022	Р	4.50	745	9	2022	С	3	13225

Source: CME, ICE

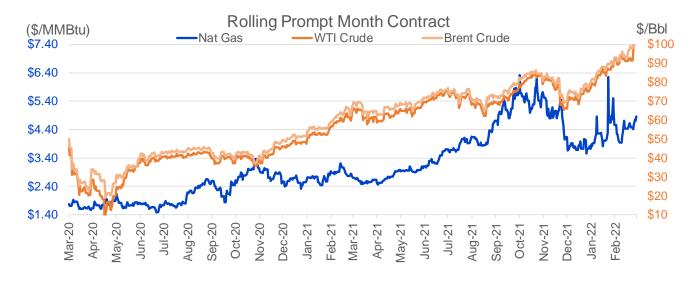


Nat Gas Futures Open Interest

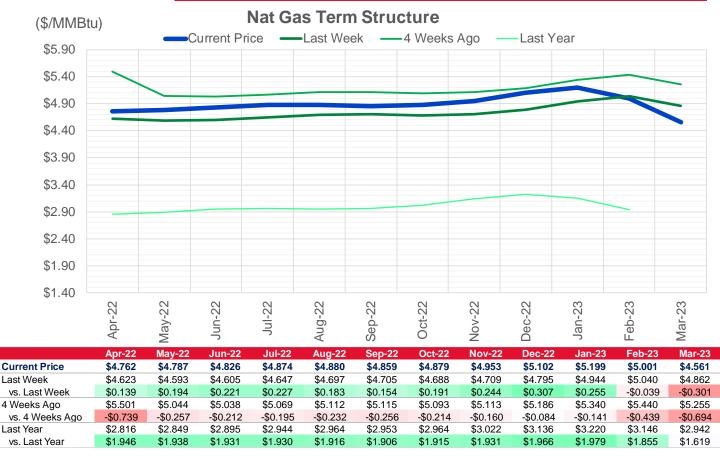
CME, ICE and Nasdaq Combined

CME Henry H	lub Futures (1	0,000 MMBt	u)	ICE Henry I	Hub Futures Cont	tract Equiva	alent (10,000 MM
	Current	Prior	Daily Change		Current	Prior	Daily Change
APR 22	124146	128633	-4487	APR 22	79956	82059	-2103
MAY 22	193456	193016	440	MAY 22	80896	80438	458
JUN 22	71808	71916	-108	JUN 22	72388	71986	402
JUL 22	79624	84083	-4459	JUL 22	67208	66620	589
AUG 22	45215	44635	580	AUG 22	61661	61592	69
SEP 22	66511	67965	-1454	SEP 22	62654	62470	184
OCT 22	83118	85679	-2561	OCT 22	71379	70549	830
NOV 22	43216	44557	-1341	NOV 22	55948	56044	-96
DEC 22	43641	43932	-291	DEC 22	65601	65767	-166
JAN 23	61761	59671	2090	JAN 23	63970	62603	1367
FEB 23	21179	22262	-1083	FEB 23	45593	45472	122
MAR 23	39229	39658	-429	MAR 23	50346	50142	204
APR 23	39157	39305	-148	APR 23	48455	48388	67
MAY 23	24264	24200	64	MAY 23	43030	43123	-93
JUN 23	14141	13107	1034	JUN 23	39963	39848	115
JUL 23	10536	10259	277	JUL 23	39740	39622	119
AUG 23	7884	7454	430	AUG 23	39334	39388	-54
SEP 23	12017	11525	492	SEP 23	38851	38721	130
OCT 23	22143	22522	-379	OCT 23	43145	43061	85
NOV 23	11095	10754	341	NOV 23	40695	40693	2
DEC 23	14226	14016	210	DEC 23	35433	35401	32
JAN 24	15860	15305	555	JAN 24	29268	28818	450
FEB 24	3392	3401	-9	FEB 24	20056	19941	115
MAR 24	14197	14197	0	MAR 24	25915	25941	-26
APR 24	7008	7038	-30	APR 24	20183	20037	147
MAY 24	2392	2397	-5	MAY 24	19037	19025	12
JUN 24	1077	1074	3	JUN 24	18881	18764	117
JUL 24	868	866	2	JUL 24	19607	19587	19
AUG 24	988	986	2	AUG 24	19356	19306	51
SEP 24	1124	1126	-2	SEP 24	19050	19039	12
							COURSON CIVIE IC

Source: CME, ICE







					VS	. 4 Weeks		
	Units	Current Price	vs. L	ast Week		Ago	vs	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224	(0.000		0.000		2.196
NatGas Oct21/Nov21	\$/MMBtu	0.361	(0.000		0.000		0.301
NatGas Oct21/Jan22	\$/MMBtu	-1.817	(0.000		0.000	_	-2.080
NatGas Apr22/Oct22	\$/MMBtu	0.101	-	0.019		0.005		0.063
WTI Crude	\$/Bbl	107.67	1	4.860		17.400		43.840
Brent Crude	\$/Bbl	110.46	1	1.380		19.350		43.720
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	(0.000		0.000		0.000
Heating Oil	cents/Gallon	350.34	4 6	60.650		66.390		160.740
Propane, Mt. Bel	cents/Gallon	1.53	(0.214		0.249		0.557
Ethane, Mt. Bel	cents/Gallon	0.42	(0.018	•	-0.008		0.206
Coal, PRB	\$/MTon	12.30	(0.000		0.000		0.000
Coal, PRB	\$/MMBtu	0.70						

Source: CME, Bloomberg



Baker Hughes Rig Counts

	Baker	Hughes 🍃			
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago
	540	•	500	000	240
Oil	519	-3	522	209	310
Gas Miscellaneous	130	3	127	38	92 1
Wiscenaneous	1	U	1	0	1
Directional	30	-1	31	14	16
Horizontal	595	2	593	233	362
Vertical	25	-1	26	0	25
Canada Breakout	This Week	+/-	Last Week	+/-	Year Ago
Oil	134	-4	138	54	80
Gas	82	-3	85	21	61
Miscellaneous	1	0	1	1	0
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago
	_	_	_	_	
Ardmore Woodford	0	-1	1	0	0
Arkoma Woodford	2	-1	3	2	0
Barnett	3	0	3	2	1
Cana Woodford	28	0	28	19	9
DJ-Niobrara	14	0	14	7	7
Eagle Ford	54	0	54	25	29
Granite Wash	3	0	3	3	0
Haynesville	63	2	61	17	46
Marcellus	36	0	36	5	31
Mississippian	1	0	1	1	0
Permian	310	1	309	99	211
Utica	11	0	11	4	7
Williston	34	0	34	21	13