

This week we review the latest monthly data supply and demand data from the EIA, which now completes our view of how the summer balances finished off.

Last summer we saw the global impacts from COVID-19 shutdowns weigh in on consumption and prices leading to one of the most erratic summers on record. Almost every line item in the balance was impacted with changing consumption habits and massive price swings.

Below is a quick summary of the balances, along with the summer-on-summer view.

		-		Summer 20	-	-		Summer 20
	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	YoY
US Dry Production	93.1	88.0	88.5	90.0	90.4	89.7	89.1	-3.6
Exports to Canada	2.4	2.2	2.2	2.3	2.0	2.1	2.3	-0.1
Imports from Canada	6.3	6.0	6.2	6.7	6.8	5.8	6.5	-0.5
Net Imports from Canada	3.9	3.8	3.9	4.4	4.8	3.7	4.2	-0.4
Power	25.5	26.9	34.8	44.3	41.3	34.6	30.8	0.5
Res	12.5	7.6	4.5	3.8	3.5	4.2	7.9	0.6
Comm	7.9	5.2	4.4	4.1	4.2	4.7	6.7	-0.4
Ind	21.5	20.2	20.2	20.7	21.1	21.7	22.5	-0.6
Vehicle	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0
Lease and Plant Fuel	5.1	4.8	4.8	4.9	5.0	4.9	4.9	-0.2
Pipeline and Distribution	2.3	2.0	2.2	2.4	2.4	2.2	2.3	0.0
Total Consumption	74.8	66.8	71.2	80.5	77.6	72.5	75.1	0.0
Exports to Mexico	4.6	4.7	5.4	5.8	6.0	6.1	6.0	0.3
Imports to Mexico	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Exports from Mexico	4.6	4.7	5.4	5.8	6.0	6.0	6.0	0.3
LNG Exports	7.0	5.9	3.6	3.1	3.6	5.0	7.2	0.2
LNG Imports	0.11	0.09	0.16	0.13	0.09	0.04	0.00	0.0
Net LNG Export Only	6.9	5.8	3.5	3.0	3.5	5.0	7.2	0.2
Balancing Item	-0.5	-0.1	-0.5	0.1	-0.7	0.9	-2.1	0.7
Daily Storage Activity	10.2	14.4	11.9	5.2	7.4	10.8	3.0	-3.8
Monthy Storage Activity	307	448	358	161	228	323	92	-808
South Central Storage Level	1022	1140	1221	1207	1233	1313	1281	89
Pacific Storage Level	227	276	308	311	307	318	320	27
Midwest Storage Level	524	641	747	827	935	1053	1113	10
East Storage Level	428	553	655	721	803	890	944	11
Mountain Storage Level	109	143	177	200	215	235	239	33
L48 Storage Level	2310	2754	3108	3266	3493	3809	3897	171
L48 Population CDD	1.7	4.0	8.9	13.1	11.6	6.2	2.7	0.1
Henry Hub1	\$1.63	\$1.79	\$1.72	\$1.50	\$1.85	\$2.58	\$2.10	-\$0.55

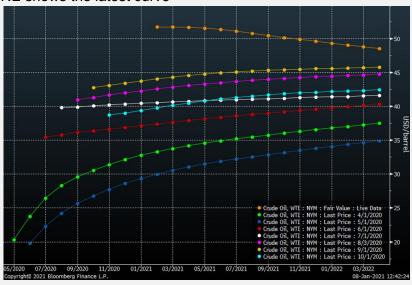
Source: EIA, analytix.ai



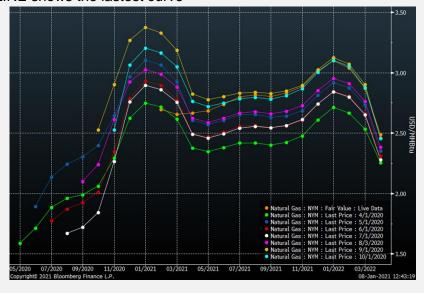
Simply looking at the Summer YoY change is not enough. With the oil prices war and COVID impacts hitting in Q2 2020, we saw major impacts to supply and power, commercial and industrial consumption at different points in the summer. To start, we look at how the oil and nat gas curves shifted throughout the summer. Each line represents the look at the beginning of the month for April through Oct. The implication was massive from:

- reducing rigs leading to lower domestic associated gas and dry gas well production
- reshuffling the power stack
- altering LNG economics

Oil Curve ORANGE LINE shows the latest curve

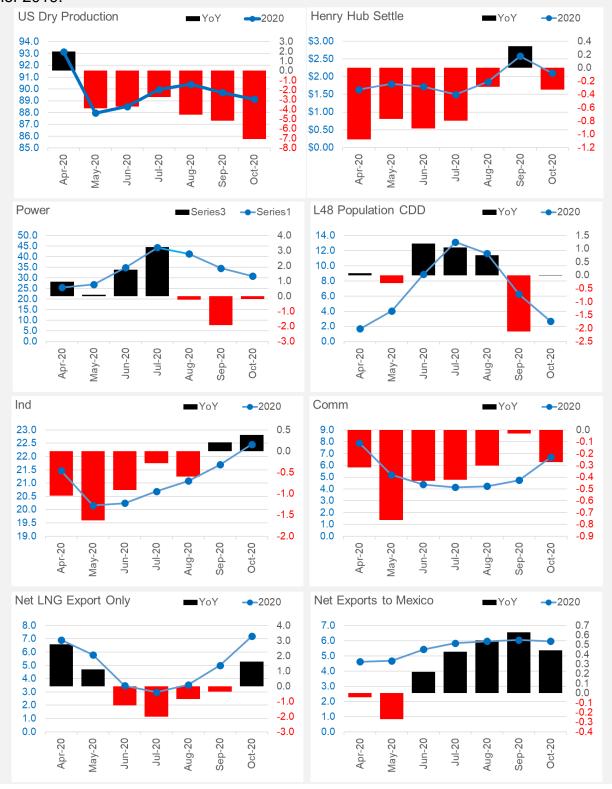


Nat Gas Curve ORANGE LINE shows the lastest curve





The following set of charts shows how all the major line items of the balances compared to Summer 2019.





In the next section, we focus on LNG

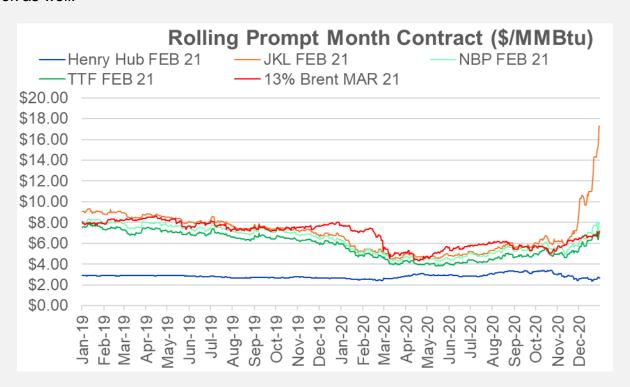
The rally in liquefied natural gas shows no signs of slowing as a cold snap is forcing Asian utilities to pay prices never seen before.

The spot rally is being driven by cooler winter conditions in Asia, supply outages in Qatar, Australia, and Malaysia, high tanker rates, and Panama canal congestion.

For Feb, there are up to 10 cargo cancellations rumored despite the strong LNG economics. The reason for the latest US cancellations, following only as many as two for January and none for December, appears to be a lack of shipping availability and aggressively high charter rates.

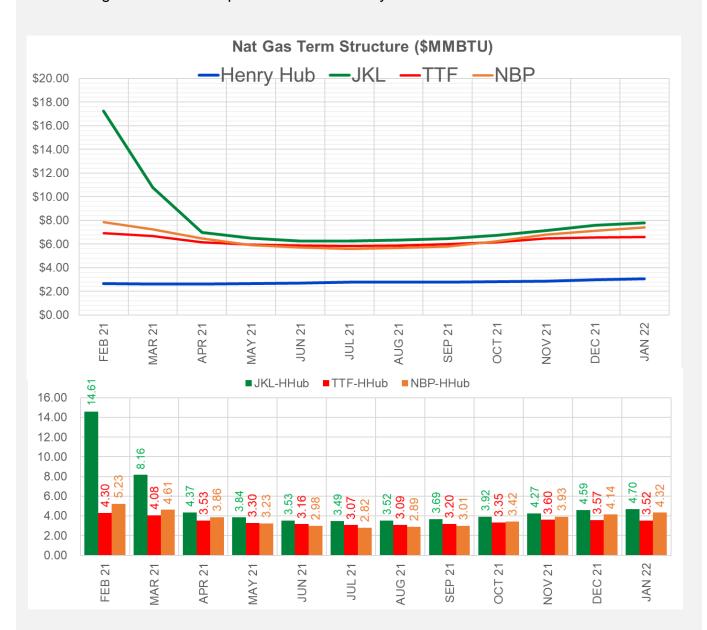
Last week, Exxon sold a spot cargo for the 2nd half of Jan to Kyushu Electric Power Co. for the mid-\$30/MMbtu level. This comes after hearing of another couple of spot deals done in the mid \$20s. The Exxon cargo came with a hefty premium to spot levels because it was sold so close to the delivery period.

The higher spot prices are dragging the forwards higher. The JKM Feb contract closed near \$20/MMBtu. The high prices in Asia are pushing TTF and NBF prices in Europe higher this week as well.





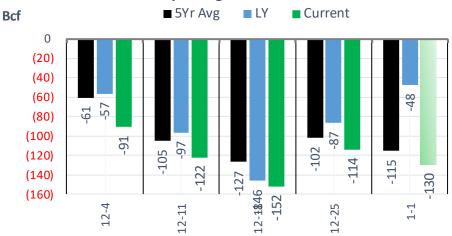
The US to global market spreads look strong throughout the next 12 months. Spreads to Asian hover above \$3.50 all summer, while spreads to Europe are above \$3.00/MMBtu. This looks to be enough to make US exports economical at 1yr tanker rates.



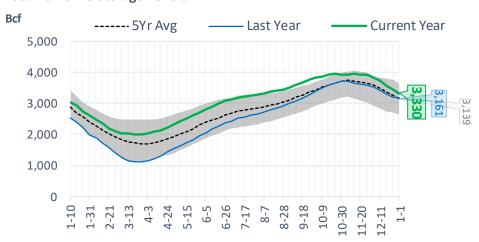


EIA Storage Report

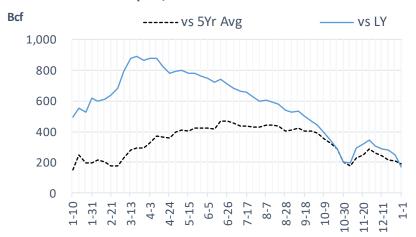
Total Lower 48 YoY Weekly Change



Total Lower 48 Storage Levels



Total Lower 48 LY Surplus/Deficit



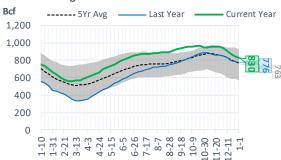


Natural Gas Storage Stats - Last 5 Weeks

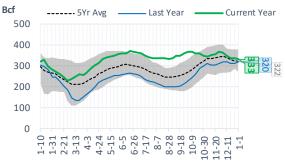
	Current	Week - 1	Week - 2	Week - 3	Week - 4	Week - 5
Week Ending	1-Jan	25-Dec	18-Dec	11-Dec	4-Dec	27-Nov
Total Lower 48 Storage Level	3330	3460	3574	3726	3848	3939
Weekly Change	-130	-114	-152	-122	-91	-1
vs LY	+169	+251	+278	+284	+309	+343
vs 5Yr Avg	+191	+206	+218	+243	+260	+290
S. Central Salt Storage Level	333	334	337	348	361	368
Weekly Change	-1	-3	-11	-13	-7	+12
vs LY	+13	+22	+25	+28	+41	+56
vs 5Yr Avg	+11	+10	+9	+10	+16	+26
S. Central NonSalt Storage Level	830	849	870	908	933	958
Weekly Change	-19	-21	-38	-25	-25	+2
vs LY	+54	+67	+73	+78	+83	+99
vs 5Yr Avg	+67	+63	+66	+79	+84	+97
Midwest Storage Level	923	973	1015	1059	1095	1122
Weekly Change	-50	-42	-44	-36	-27	-11
vs LY	+32	+63	+78	+75	+74	+79
vs 5Yr Avg	+45	+54	+61	+64	+65	+69
East Storage Level	765	810	844	881	915	934
Weekly Change	-45	-34	-37	-34	-19	0
vs LY	+5	+32	+36	+35	+41	+42
vs 5Yr Avg	+24	+43	+48	+54	+60	+63
Mountain Storage Level	196	204	212	223	232	240
Weekly Change	-8	-8	-11	-9	-8	-2
vs LY	+28	+30	+32	+35	+37	+39
vs 5Yr Avg	+22	+20	+21	+24	+26	+28
Pacific Storage Level	282	289	296	306	312	318
Weekly Change	-7	-7	-10	-6	-6	-2
vs LY	+36	+35	+32	+32	+33	+30
vs 5Yr Avg	+22	+15	+12	+11	+9	+7



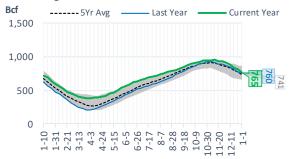
NonSalt Storage Levels



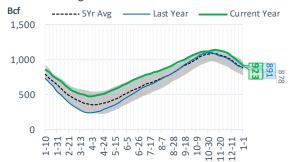
Salt Storage Levels



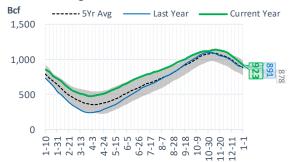
East Storage Levels



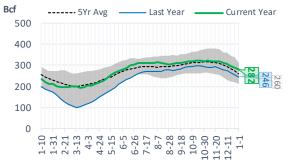
Midwest Storage Levels



Midwest Storage Levels



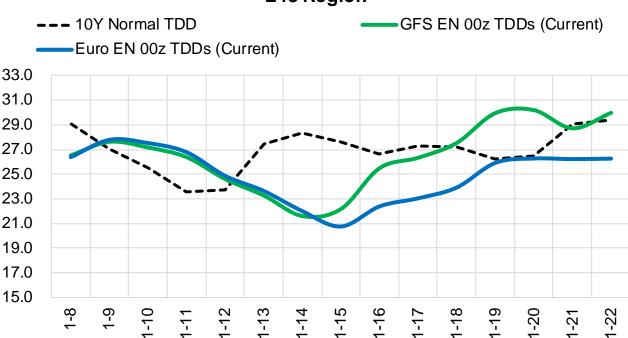
Pacific Storage Levels

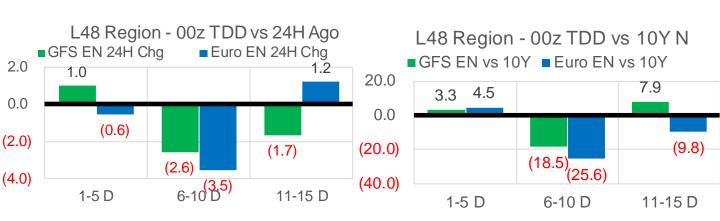




Current Short-term Weather Model Outlooks (00z)







Source: WSI, Bloomberg



EIA Reported Daily Storage Activity

Daily Model Error

Market Report

-13.0

0.2

	4-Dec	11-Dec	18-Dec	25-Dec	1-Jan	8-Jan	WoW	vs. 4W
Lower 48 Dry Production	91.5	90.8	90.9	91.5	91.7	91.6	▼ -0.1	0.4
Canadian Imports	5.3	5.9	5.8	5.8	5.8	6.1	0.3	0.3
L48 Power	26.3	28.0	28.3	26.5	26.3	27.3	1.0	0.0
L48 Residential & Commercial	33.3	36.4	40.0	38.8	41.9	40.0	▼ -1.9	0.7
L48 Industrial	25.4	24.7	25.6	24.7	24.2	23.7	▼-0.6	▼ -1.1
L48 Lease and Plant Fuel	5.1	5.0	5.0	5.1	5.1	5.1	▼ 0.0	0.0
L48 Pipeline Distribution	2.8	2.9	3.1	3.0	3.1	3.0	▼-0.1	0.0
L48 Regional Gas Consumption	92.8	97.0	102.1	98.2	100.6	99.0	▼-1.6	▼-0.4
Net LNG Exports	10.4	11.3	10.9	10.8	11.0	10.9	▼ -0.1	▼ -0.1
Total Mexican Exports	6.4	6.3	6.2	5.8	5.5	5.9	0.5	▼ 0.0
Implied Daily Storage Activity	-12.8	-17.9	-22.5	-17.5	-19.6	-18.1	1.5	

-17.4

-0.5

-21.7

-0.8

-16.3

-1.2

-18.6

-1.0

Monthly Balances									
•	2Yr Ago Jan-19	LY Jan-20	Sep-20	Oct-20	Nov-20	Dec-20	MTD Jan-21	MoM	vs. LY
Lower 48 Dry Production	87.2	94.0	88.1	87.5	90.4	91.2	91.5	0.3	▼ -2.5
Canadian Imports	5.9	4.8	3.8	4.3	4.6	5.9	6.2	0.3	1.3
L48 Power	27.2	29.9	34.2	30.6	24.8	27.4	27.6	0.2	▼ -2.3
L48 Residential & Commercial	48.0	41.1	8.8	14.4	22.8	39.2	40.5	1.4	- 0.6
L48 Industrial	24.1	24.6	19.3	22.7	24.4	25.0	23.4	▼ -1.5	▼ -1.2
L48 Lease and Plant Fuel	4.9	5.2	4.9	4.9	5.0	5.1	5.1	▼ 0.0	- 0.1
L48 Pipeline Distribution	3.4	3.2	2.2	2.3	2.2	3.0	3.1	0.1	- 0.1
L48 Regional Gas Consumption	107.6	104.1	69.4	74.9	79.2	99.6	99.8	0.1	▼-4.3
Net LNG Exports	4.1	8.4	6.0	8.0	10.1	11.0	10.9	▼-0.1	2.5
Total Mexican Exports	5.0	5.2	6.4	6.2	6.2	6.0	6.0	▲ 0.0	▲ 0.8
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	-23.6	-18.9	10.1	2.6	-0.6	-19.5	-19.0		

Source: Bloomberg, analytix.ai

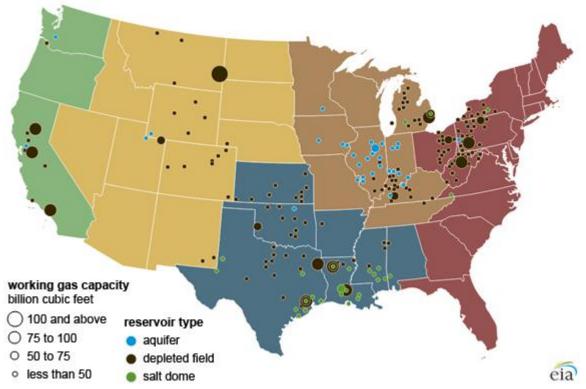
Regional S/D Models Storage Projection

Week Ending 8-Jan

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
<u>L48</u>	-18.3	1.2	-17.1	-120
East	-7.0	1.0	-6.0	-42
Midwest	-6.5	0.3	-6.2	-43
Mountain	2.3	-3.7	-1.4	-10
South Central	-7.0	4.0	-3.0	-21
Pacific	-0.2	-0.4	-0.6	-4

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

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

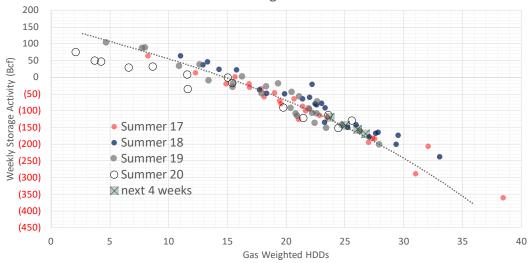




Weather Model Storage Projection

Next report and beyond		
		Week Storage
Week Ending	Temp	Projection
15-Jan	25.1	-143
22-Jan	26.1	-156
29-Jan	26.8	-168



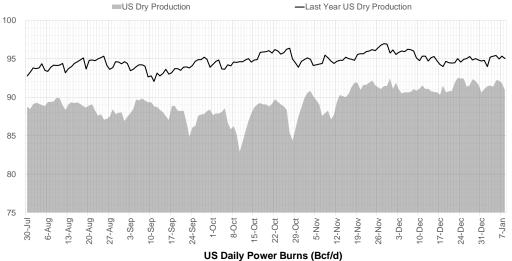


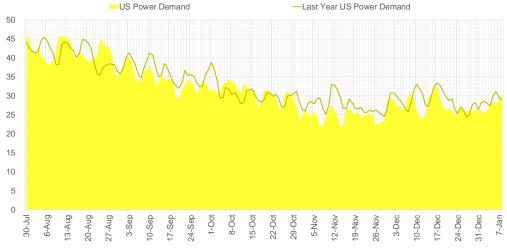
Note: this is not our official end of season forecast. This chart signifies where storage levels end with 10-year normal weather and current market tightness relative to last year



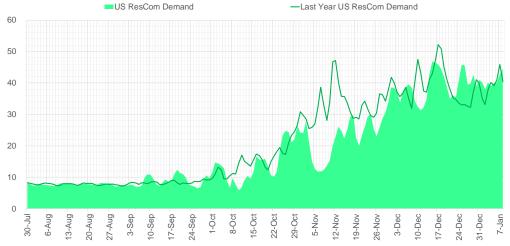
Supply - Demand Trends

US Dry Natural Gas Production (Bcf/d)





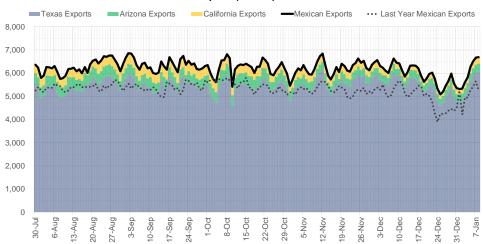
US Daily ResCom Consumption(Bcf/d)

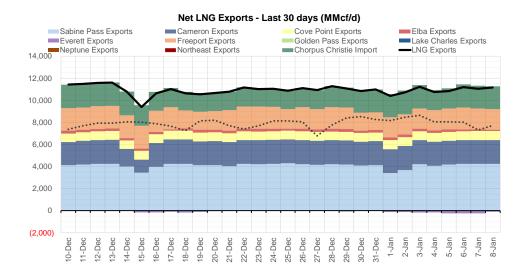


Source: Bloomberg



Mexican Exports (MMcf/d)







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

CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL		CONTRACT MONTH			
4	2021	С	4.00	8437		3	3 2021	3 2021 C	3 2021 C 3.50
3	2021	Č	6.00	6631		3			
2	2021	P	2.25	6266		4			
2	2021	r P	2.50	5207		3			
3	2021	C	4.00	4915		3			
						3			
3	2021	P	2.00	4636		2			
2	2021	P	2.40	4267		3			
2	2021	С	2.75	3965					
3	2021	С	3.50	3798	3		2021		
3	2021	Р	2.25	3697	10		2021		
4	2021	С	3.50	3476	2		2021		
4	2021	Р	2.00	3466	4		2021		
3	2021	С	5.00	3441	3		2021		
3	2021	Č	3.00	3425	10		2021		
2	2021	P	2.60	2875	2		2021		
2	2021	C	2.80	2736	2		2021		
3	2021	C	3.25	2658	3		2021		
2		C			3		021		
	2021		3.00	2607	8	202			
4	2021	P	2.25	2265	2	2021		Č	
3	2021	Р	2.15	2154	10	2021		Č	
5	2021	С	3.50	2137	2	2021		P	
5	2021	С	3.75	2100	4				
5	2021	С	4.00	2100		2021		С	
6	2021	C	4.00	2100	5	2021		С	
4	2021	Č	3.75	2060	4	2021		C	
4	2021	P	2.50	2049	4	2021		С	
6	2021	C	3.75	2000	4	2021		С	
6	2021	C			8	2021		Р	
			3.50	1850	4	2021		Р	
2	2021	С	2.90	1690	10	2021		Р	P 2.00
4	2021	С	3.25	1435	2	2021		С	C 5.00
4	2021	С	3.00	1370	4	2021		P	
3	2021	С	4.50	1319	6	2021		C	
2	2021	С	2.70	1182	3	2021		P	
8	2021	С	3.25	1080	3 7	2021		C	
7	2021	C	3.50	1051	2	2021		C	
10	2021	P	2.00	1025					
2	2021	P	2.35	1010	4	2021		С	
5	2021	C	3.25	980	10	2021		С	
					5	2021		С	
3	2021	С	2.75	900	12	2021		С	
8	2021	С	3.50	900	8	2021		Р	
2	2021	С	4.00	893	5	2021		С	C 3.25
6	2021	С	3.25	880	4	2022		С	
7	2021	С	3.25	880	2	2021		P	
9	2021	С	3.25	880	2	2021		C	
10	2021	C	3.25	880	10	2021		P	
2	2021	P	2.70	850	5	2021		P	
9	2021	C	3.50	850	5	2021		P	
10	2021	C	3.50	850		2021		P P	
					6			-	
2	2021	Р	2.30	844	7	2021		Р	P 2

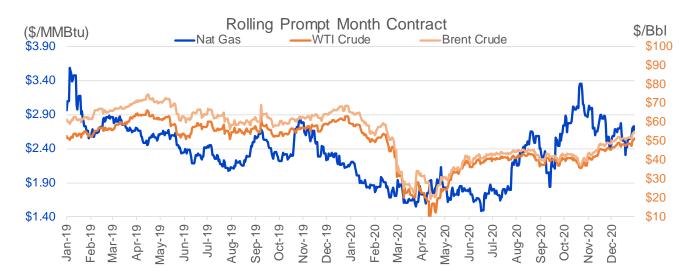
Source: CME, Nasdaq, ICE



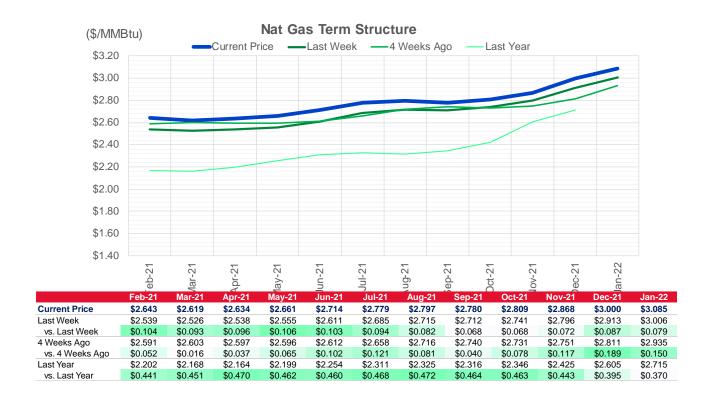
Nat Gas Futures Open Interest CME, ICE and Nasdaq Combined

CME Henry H	lub Futures (1	0,000 MMBtu	ı)	ICE Henry Hub	Futures Co	ontract Equiva	lent (10,000 MIV
	Current	Prior	Daily Change	FOR JUNE 26	Current	Prior	Daily Change
FEB 21	166517	175279	-8762	FEB 21	80627	80243	383.25
MAR 21	265346	260444	4902	MAR 21	96045	96260	-215
APR 21	109409	109939	-530	APR 21	85088	84249	839.5
MAY 21	68142	67674	468	MAY 21	77875	77545	330
JUN 21	39227	38928	299	JUN 21	64200	64115	85
JUL 21	33540	34160	-620	JUL 21	65419	65334	85.25
AUG 21	30088	29612	476	AUG 21	66338	66427	-89.5
SEP 21	46936	47479	-543	SEP 21	63050	63050	0
OCT 21	107122	112633	-5511	OCT 21	80995	80446	549.75
NOV 21	38429	38531	-102	NOV 21	51617	51590	27
DEC 21	41543	42240	-697	DEC 21	52507	52333	174
JAN 22	48101	47135	966	JAN 22	52686	52444	242
FEB 22	24083	24099	-16	FEB 22	38596	38619	-22.5
MAR 22	26833	27220	-387	MAR 22	40768	40764	3.25
APR 22	24641	24694	-53	APR 22	39074	38999	75.5
MAY 22	12722	13230	-508	MAY 22	34377	34436	-59.5
JUN 22	7179	7213	-34	JUN 22	32748	32680	67.5
JUL 22	5937	5927	10	JUL 22	33745	33781	-36.5
AUG 22	5561	5515	46	AUG 22	32840	32894	-54.75
SEP 22	4852	4968	-116	SEP 22	32774	32699	74.5
OCT 22	10317	9709	608	OCT 22	36431	36415	15.5
NOV 22	6411	6214	197	NOV 22	30447	30311	136.25
DEC 22	6670	6472	198	DEC 22	32953	33077	-123.75
JAN 23	4683	4586	97	JAN 23	16748	16471	276.75
FEB 23	1465	1465	0	FEB 23	15560	15474	86.5
MAR 23	2020	1981	39	MAR 23	15360	15103	257.25
APR 23	3450	3450	0	APR 23	14117	14101	16.25
MAY 23	2006	2006	0	MAY 23	13459	13435	24
JUN 23	735	735	0	JUN 23	13190	13169	20.75
JUL 23	809	809	0	JUL 23	12866	12845	21

Source: CME, ICE







					VS	. 4 Weeks		
	Units	Current Price	vs.	Last Week		Ago	vs	. Last Year
NatGas Jan21/Apr21	\$/MMBtu	0.167		0.096		0.162		0.577
NatGas Mar21/Apr21	\$/MMBtu	0.015		0.003		0.014	•	-0.237
NatGas Oct21/Nov21	\$/MMBtu	0.059		0.004	•	-0.001	•	-0.001
NatGas Apr21/Oct21	\$/MMBtu	0.175		0.449		0.335	•	-0.187
WTI Crude	\$/Bbl	51.48		2.960		4.910	•	-7.560
Brent Crude	\$/Bbl	55.18		3.380		5.210		-9.800
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	156.23		8.600		12.540	•	-36.610
Propane, Mt. Bel	cents/Gallon	0.83		0.188		0.246		0.376
Ethane, Mt. Bel	cents/Gallon	0.23		0.032		0.035		0.074
Coal, PRB	\$/MTon	12.30		0.000		0.000		0.050
Coal, PRB	\$/MMBtu	0.70						

Source: CME, Bloomberg



Baker Hughes Rig Counts

	Rotary Rig	Count			
	Baker	Hughes >			
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago
		_			
Oil	275	8	267	-384	659
Gas	84	1	83	-35	119
Miscellaneous	1	0	1	-2	3
Directional	22	1	21	-23	45
Horizontal	320	7	313	-23 -378	698
Vertical	18	1	17	-20	38
Vertical	10	'	17	-20	30
Canada Breakout	This Week	+/-	Last Week	+/-	Year Ago
Oil	53	35	18	-67	120
Gas	64	23	41	-19	83
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago
Ardmore Woodford	0	0	0	-2	2
Arkoma Woodford	0	0	0	-2	2
Barnett	0	0	0	-1	1
Cana Woodford	10	1	9	-11	21
DJ-Niobrara	5	0	5	-14	19
Eagle Ford	26	0	26	-41	67
Granite Wash	0	-1	1	-1	1
Haynesville	43	0	43	-2	45
Marcellus	30	4	26	-11	41
Mississippian	0	0	0	-2	2
Permian	179	4	175	-218	397
Utica	4	-2	6	-6	10
Williston	11	0	11	-40	51