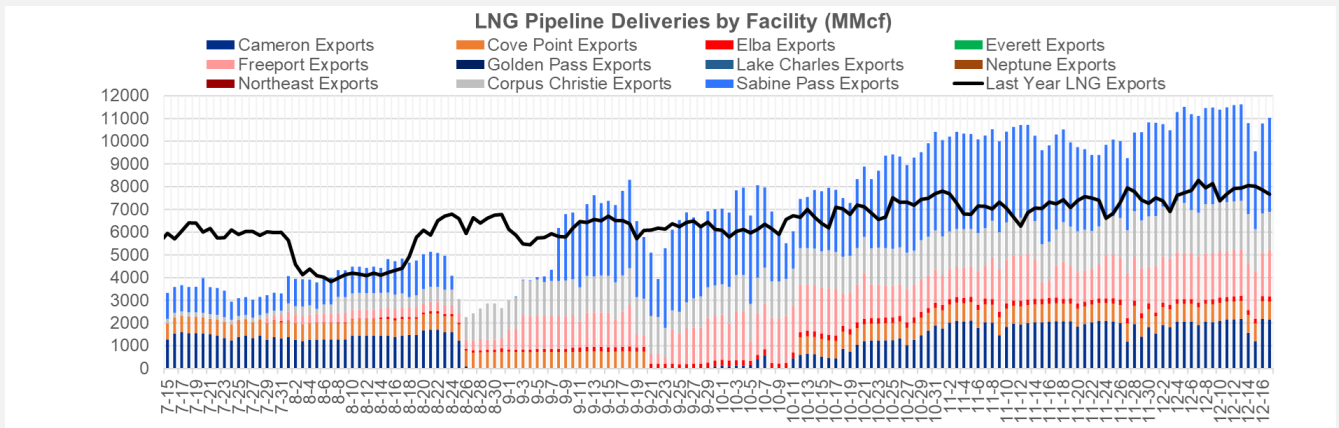


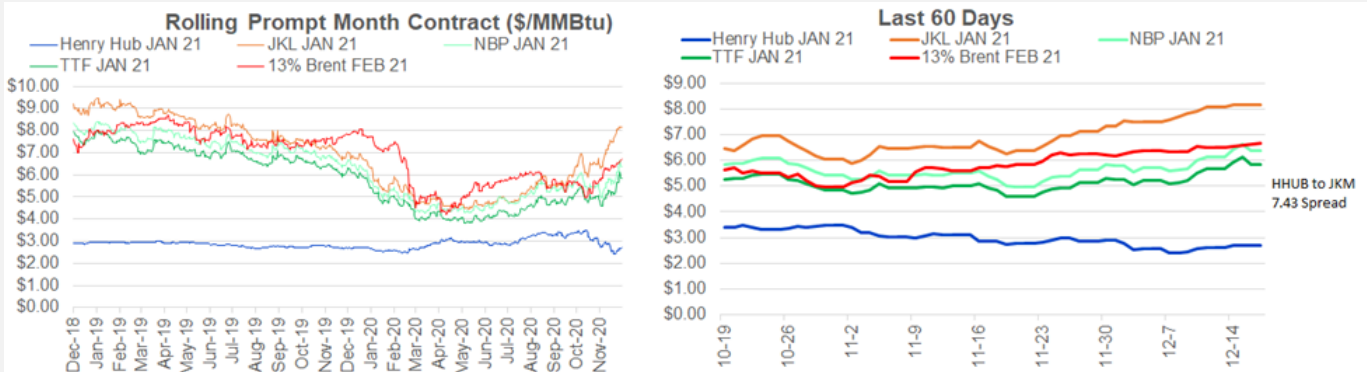
US LNG feedgas continues to trend near all-time highs, with a peak of 11.6 Bcf/d set on December 13th. The average this month has been 11 Bcf with some issues at Sabine and Cameron taking lower volumes for a couple of days. Cameron volumes were lower due to utility plant trip knocking them offline. Sabine volumes were supposedly lower due to fog issues backing up tanker arrivals.

The strong netbacks to Asia have been the major push to these LNG levels, but coming winter weather and commissioning volatility at Corpus Christi T3 suggests we could see downside to feedgas demand through the next 6 weeks.

This month's volumes are higher by 3.2 Bcf/d YoY, and 0.9 Bcf/d higher than November.



This past week Platts JKM spot was assessed at \$12.40/MMBtu, its highest level in recent history. The forwards do not show the same level of prices. The prompt JKM contract (Feb) currently is priced above \$10/MMBtu.

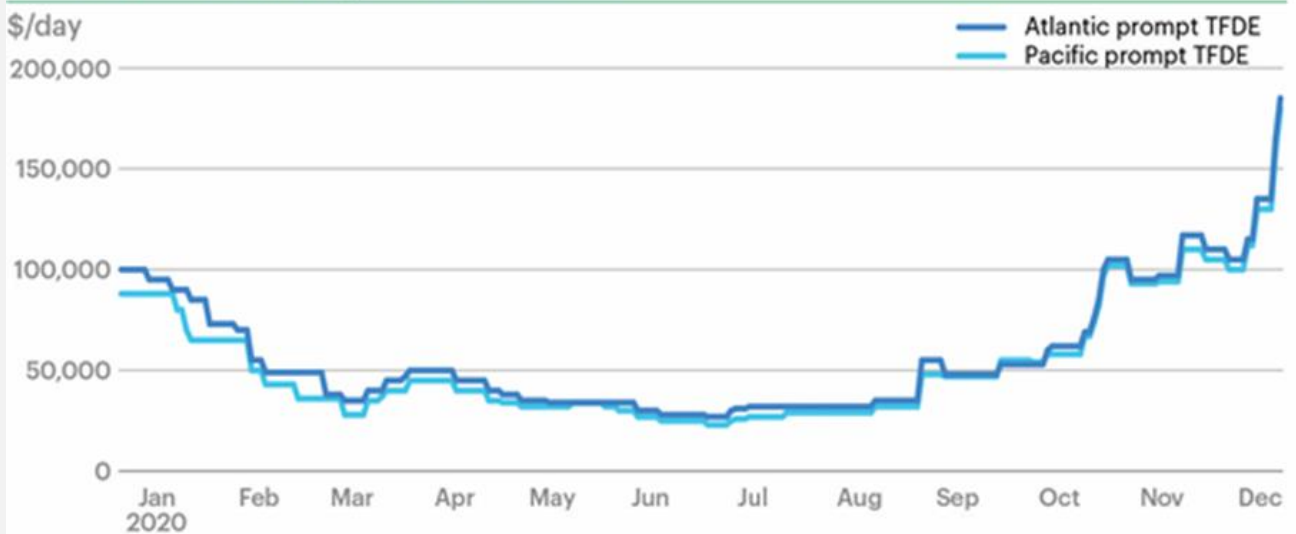


The spot rally is being driven by cooler winter conditions in Asia, supply outages in Qatar, Australia, and Malaysia, high tanker rates, and Panama canal congestion. The high prices in Asia seemed to have pushed the mini bull run in Europe this week as well.

Platts suggest that the shipping availability constraints are pushing daily Atlantic Basin charter rates to \$150,000/day, with a 135% ballast rate. Additionally, market chatter suggests that there are no ships available for the prompt month and that incremental January demand in Asia might only be satisfied with physically swapped cargos.

Here is a chart from ICIS showing TFDE (Tri-Fuel Diesel-Electric) tanker charter rates this past year. ICIS mention on an enelyst chat that “no fixtures were done at the ultra-high levels due to the limited availability of tonnage”.

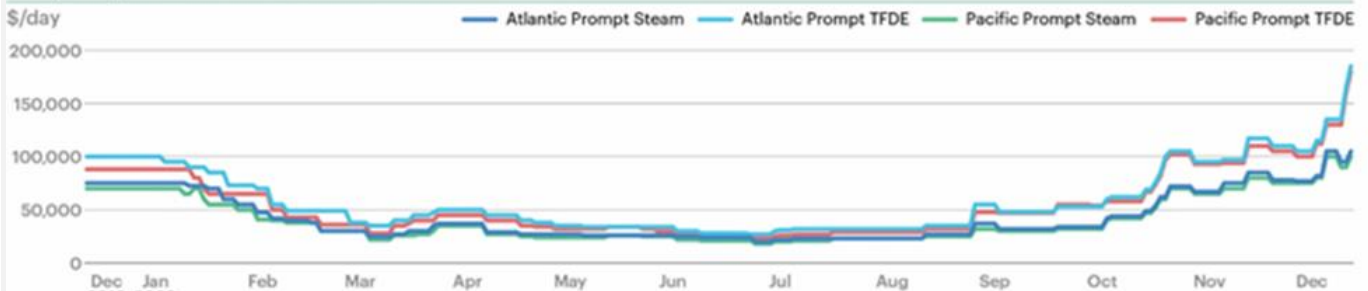
Charter rates hit 2020 peak in December



Source: ICIS, LNG Edge

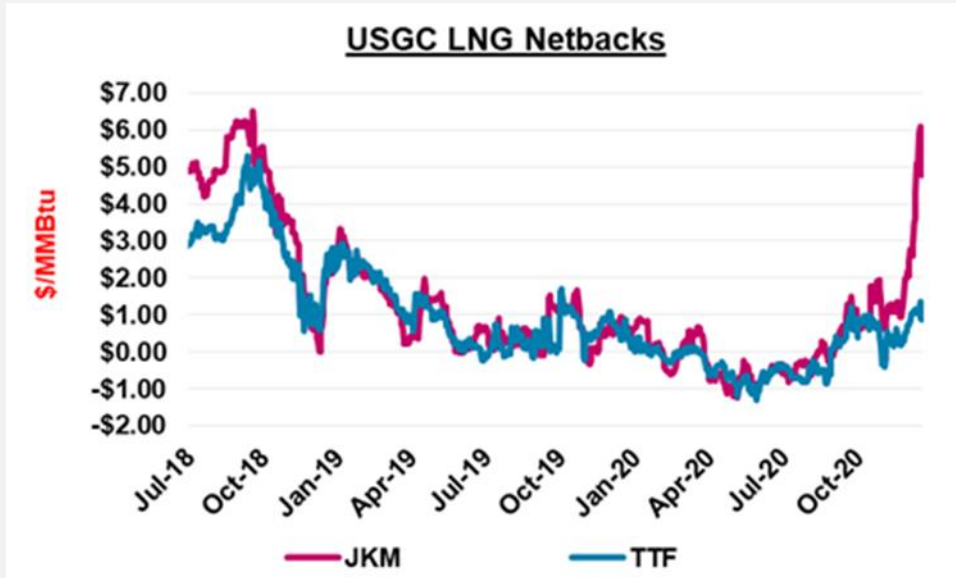
For the prompt month (Feb), TFDE-propelled tonnage stands around \$185,000/day in the Atlantic basin and at \$180,000/day in the Pacific basin.

ICIS prompt charter rate assessments



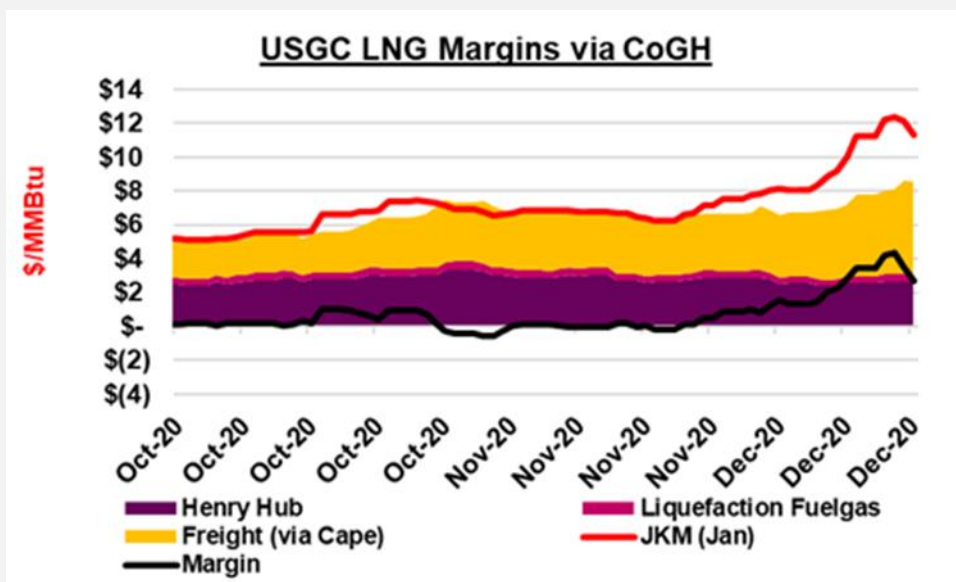
Source: ICIS

Here is a view of US LNG netbacks to Asia and Europe from Platts. The netback broke over \$6/MMBtu on December 15 for the February delivery period. These are the highest spreads observed since the fall of 2018 and a massive reversal from the summer lows where netbacks were negative.



Source: Platts

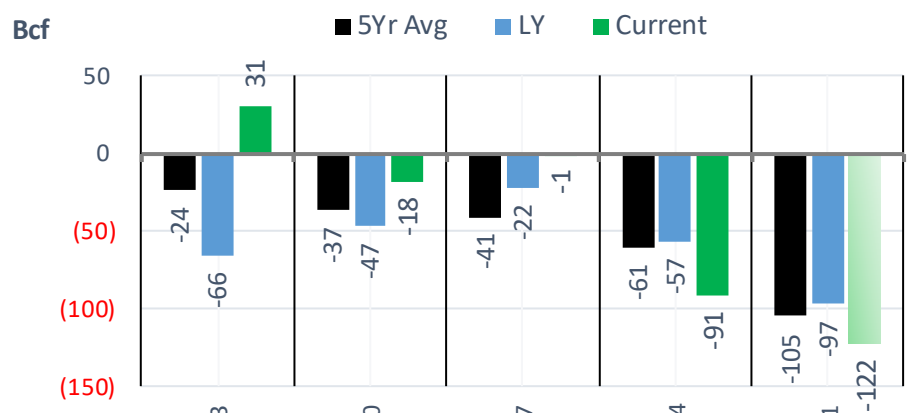
The above netback considers the journey through the Panama Canal. But with congestion there, some tankers have gone around the Cape of Good Horn. Even with the longer journey at the higher daily tanker rates, a US LNG cargo delivered to the JKM is still in the money. In fact, the netback still exceeds that to Europe.



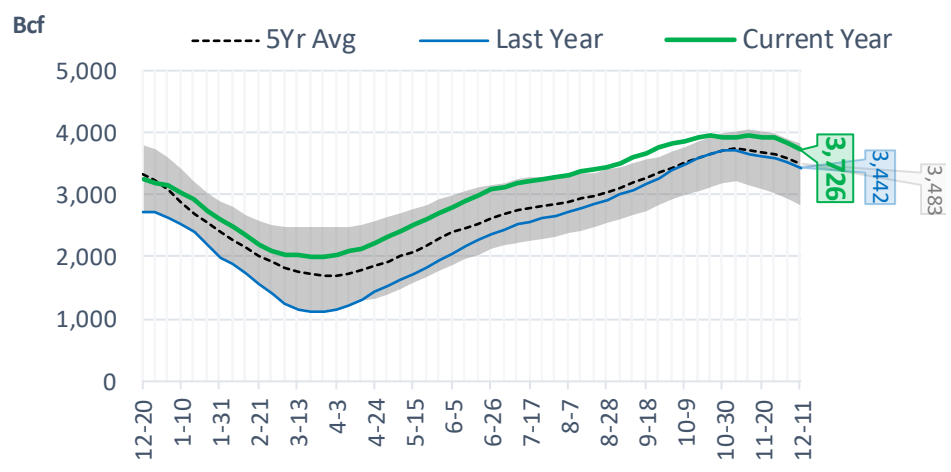
Source: Platts

EIA Storage Report

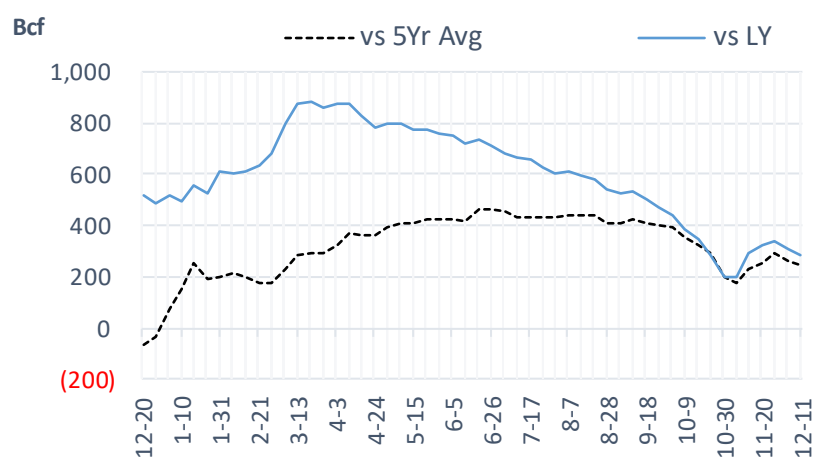
Total Lower 48 YoY Weekly Change



Total Lower 48 Storage Levels



Total Lower 48 LY Surplus/Deficit

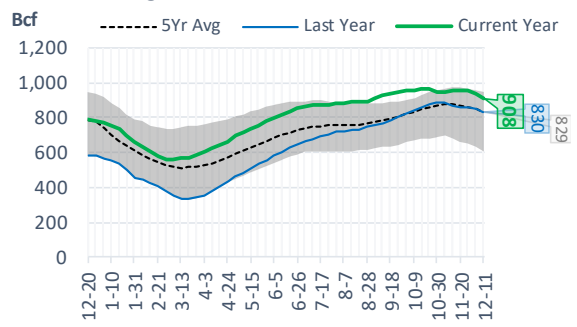


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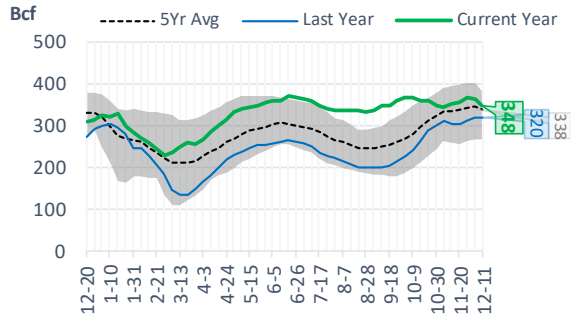
Natural Gas Storage Stats - Last 5 Weeks

Week Ending	Current 11-Dec	Week - 1 4-Dec	Week - 2 27-Nov	Week - 3 20-Nov	Week - 4 13-Nov	Week - 5 6-Nov
Total Lower 48 Storage Level	3726	3848	3939	3940	3958	3927
Weekly Change	-122	-91	-1	-18	+31	+8
vs LY	+284	+309	+343	+322	+293	+196
vs 5Yr Avg	+243	+260	+290	+250	+231	+176
S. Central Salt Storage Level	348	361	368	356	350	345
Weekly Change	-13	-7	+12	+6	+5	-3
vs LY	+28	+41	+56	+54	+47	+35
vs 5Yr Avg	+10	+16	+26	+20	+15	+10
S. Central NonSalt Storage Level	908	933	958	956	956	948
Weekly Change	-25	-25	+2	0	+8	+3
vs LY	+78	+83	+99	+93	+86	+63
vs 5Yr Avg	+79	+84	+97	+89	+83	+71
Midwest Storage Level	1059	1095	1122	1133	1139	1127
Weekly Change	-36	-27	-11	-6	+12	+8
vs LY	+75	+74	+79	+76	+59	+20
vs 5Yr Avg	+64	+65	+69	+61	+53	+33
East Storage Level	881	915	934	934	953	942
Weekly Change	-34	-19	0	-19	+11	-5
vs LY	+35	+41	+42	+36	+37	+10
vs 5Yr Avg	+54	+60	+63	+47	+51	+30
Mountain Storage Level	223	232	240	242	241	243
Weekly Change	-9	-8	-2	+1	-2	+3
vs LY	+35	+37	+39	+38	+35	+36
vs 5Yr Avg	+24	+26	+28	+28	+26	+27
Pacific Storage Level	306	312	318	320	319	322
Weekly Change	-6	-6	-2	+1	-3	+2
vs LY	+32	+33	+30	+27	+28	+31
vs 5Yr Avg	+11	+9	+7	+6	+4	+6

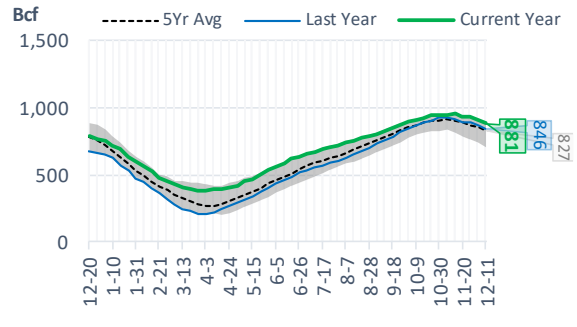
NonSalt Storage Levels



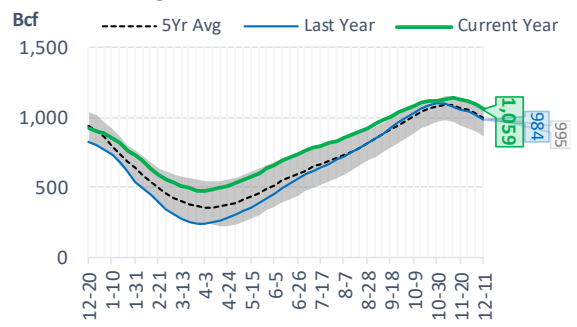
Salt Storage Levels



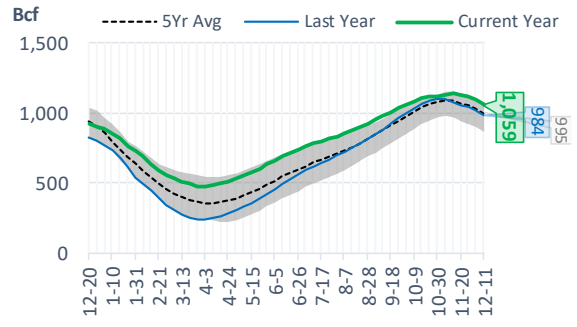
East Storage Levels



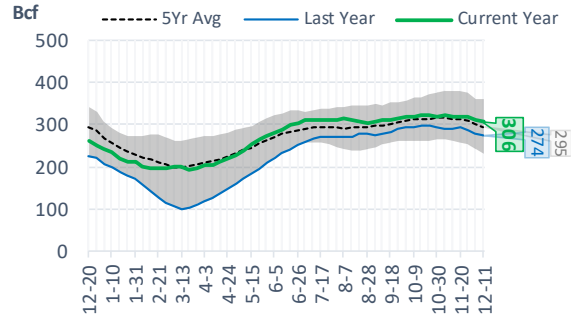
Midwest Storage Levels



Midwest Storage Levels



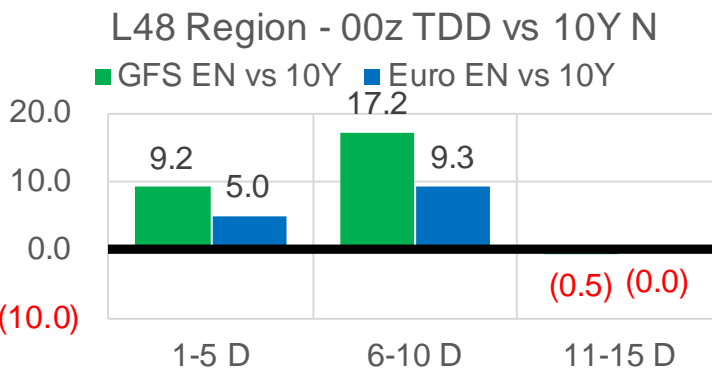
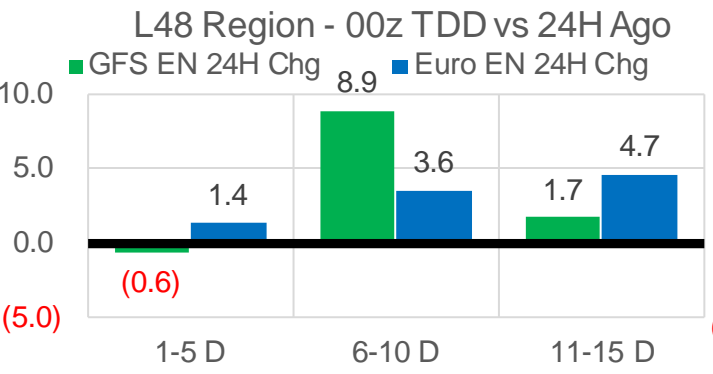
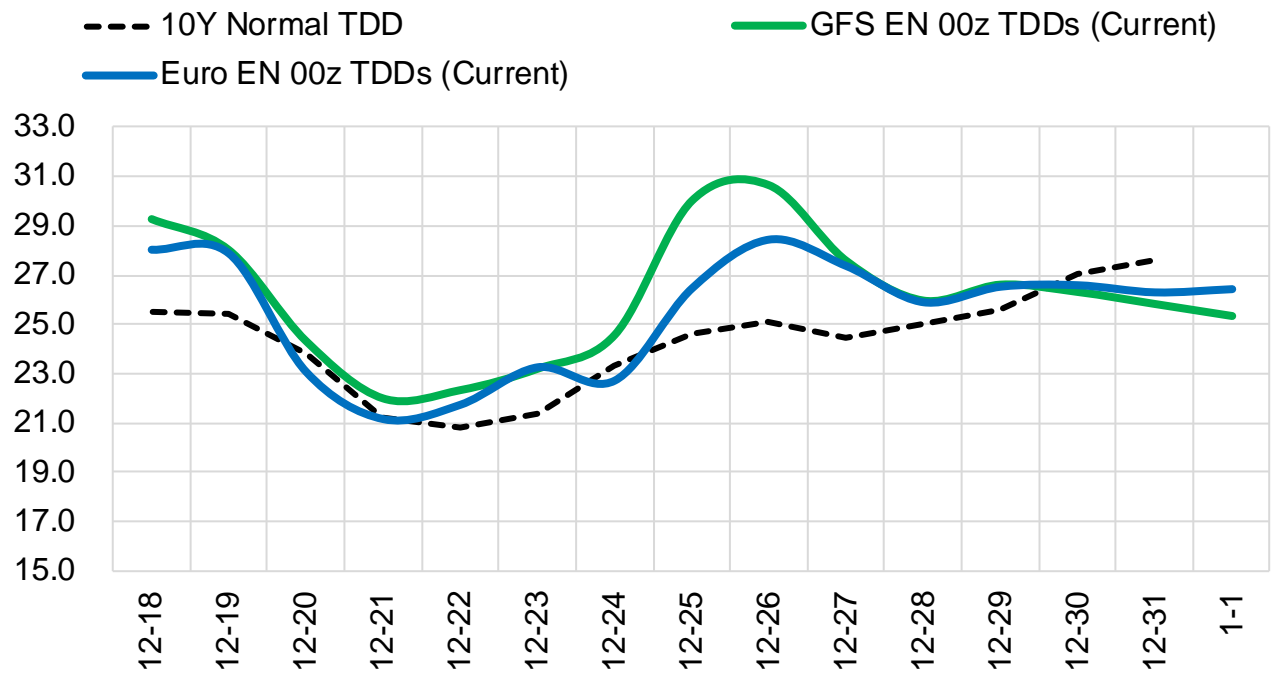
Pacific Storage Levels



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Current Short-term Weather Model Outlooks (00z)

L48 Region



Source: WSI , Bloomberg

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EIA Storage Week Balances

	13-Nov	20-Nov	27-Nov	4-Dec	11-Dec	18-Dec	WoW	vs. 4W
Lower 48 Dry Production	88.2	90.9	91.6	91.6	90.9	90.9	▲ 0.1	▼ -0.3
Canadian Imports	3.9	5.1	4.5	5.3	5.9	5.8	▼ -0.1	▲ 0.6
L48 Power	24.4	24.7	24.8	26.5	28.1	26.9	▼ -1.2	▲ 0.9
L48 Residential & Commercial	16.8	27.2	26.7	34.5	37.3	40.2	▲ 2.9	▲ 8.8
L48 Industrial	24.0	23.4	22.2	24.2	24.1	27.8	▲ 3.6	▲ 4.3
L48 Lease and Plant Fuel	4.9	5.0	5.1	5.1	5.0	5.0	▲ 0.0	▼ 0.0
L48 Pipeline Distribution	1.9	2.4	2.4	2.8	3.0	3.1	▲ 0.1	▲ 0.4
L48 Regional Gas Consumption	72.0	82.6	81.1	93.0	97.6	103.1	▲ 5.4	▲ 14.5
Net LNG Exports	10.4	10.2	9.7	10.4	11.3	10.9	▼ -0.3	▲ 0.5
Total Mexican Exports	6.3	6.1	6.3	6.4	6.3	6.2	▼ -0.1	▼ -0.1
Implied Daily Storage Activity	3.4	-2.9	-1.0	-13.0	-18.4	-23.4	-5.0	
EIA Reported Daily Storage Activity	4.4	-2.6	-0.1	-13.0	-17.4			
Daily Model Error	-1.1	-0.3	-0.9	0.0	-1.0			

Monthly Balances

	2Yr Ago Dec-18	LY Dec-19	Aug-20	Sep-20	Oct-20	Nov-20	MTD Dec-20	MoM	vs. LY
Lower 48 Dry Production	87.5	95.1	88.6	87.8	87.5	90.4	91.0	▲ 0.5	▼ -4.2
Canadian Imports	4.8	4.5	4.9	3.8	4.2	4.6	5.9	▲ 1.3	▲ 1.4
L48 Power	24.5	28.9	41.0	34.0	29.4	24.6	27.8	▲ 3.2	▼ -1.1
L48 Residential & Commercial	39.3	39.1	7.7	8.8	16.2	24.2	39.2	▲ 14.9	▲ 0.1
L48 Industrial	22.4	24.4	20.3	19.2	22.2	23.2	25.8	▲ 2.6	▲ 1.4
L48 Lease and Plant Fuel	4.9	5.3	4.9	4.9	4.8	5.0	5.0	▲ 0.0	▼ -0.2
L48 Pipeline Distribution	2.8	3.1	2.4	2.2	2.2	2.3	3.1	▲ 0.8	▼ 0.0
L48 Regional Gas Consumption	93.9	100.7	76.3	69.1	74.9	79.3	100.9	▲ 21.6	▲ 0.1
Net LNG Exports	4.5	7.8	4.0	5.9	8.0	10.1	11.0	▲ 0.9	▲ 3.2
Total Mexican Exports	4.5	5.0	6.3	6.4	6.2	6.2	6.3	▲ 0.1	▲ 1.3
Implied Daily Storage Activity	-10.7	-13.9	6.8	10.2	2.6	-0.6	-21.3		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

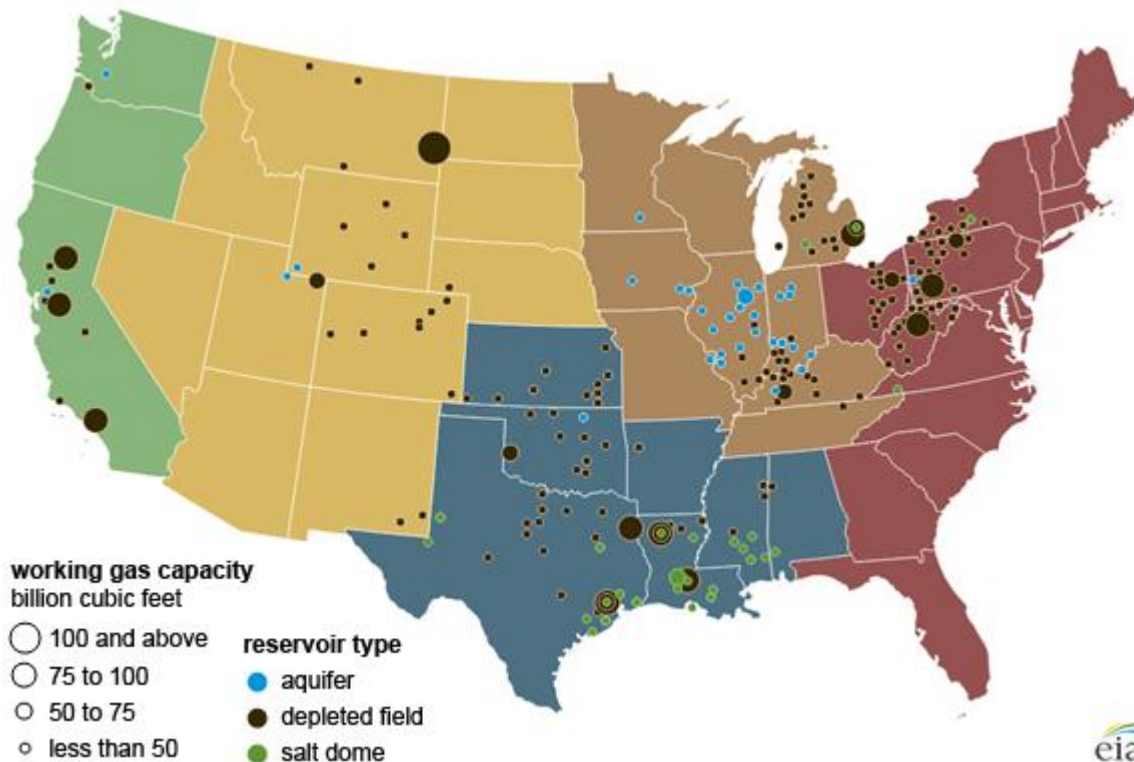
Regional S/D Models Storage Projection

Week Ending 18-Dec

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-23.7	0.8	-22.9	-161
East	-5.7	1.8	-4.0	-28
Midwest	-8.0	0.8	-7.3	-51
Mountain	1.9	-3.8	-1.9	-13
South Central	-10.2	2.4	-7.9	-55
Pacific	-1.6	-0.3	-1.9	-13

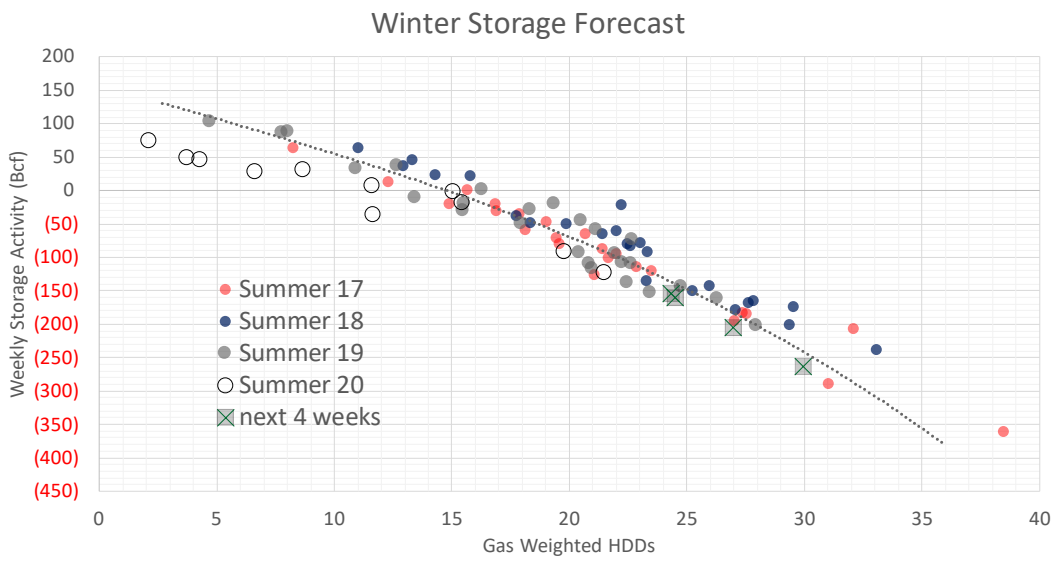
*Adjustment Factor is calculated based on historical regional deltas

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



Weather Model Storage Projection

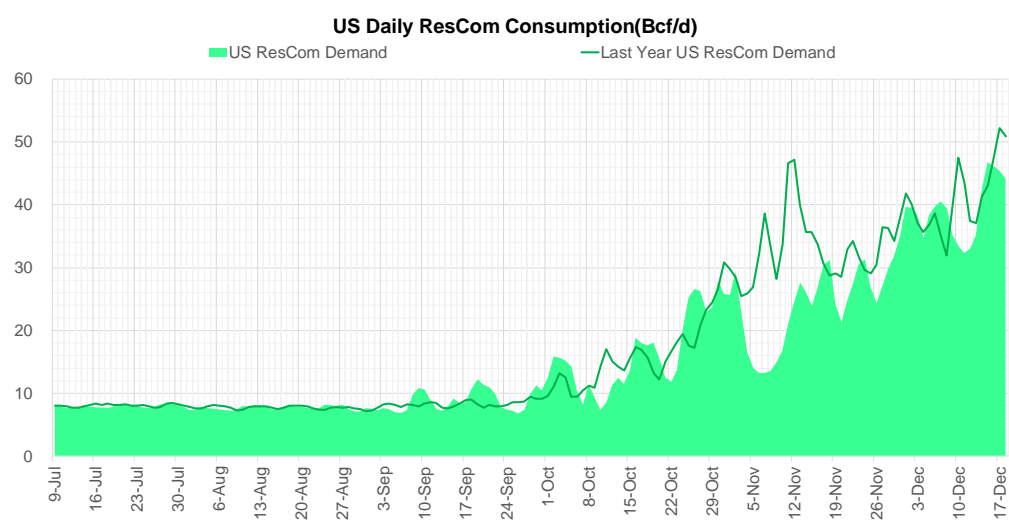
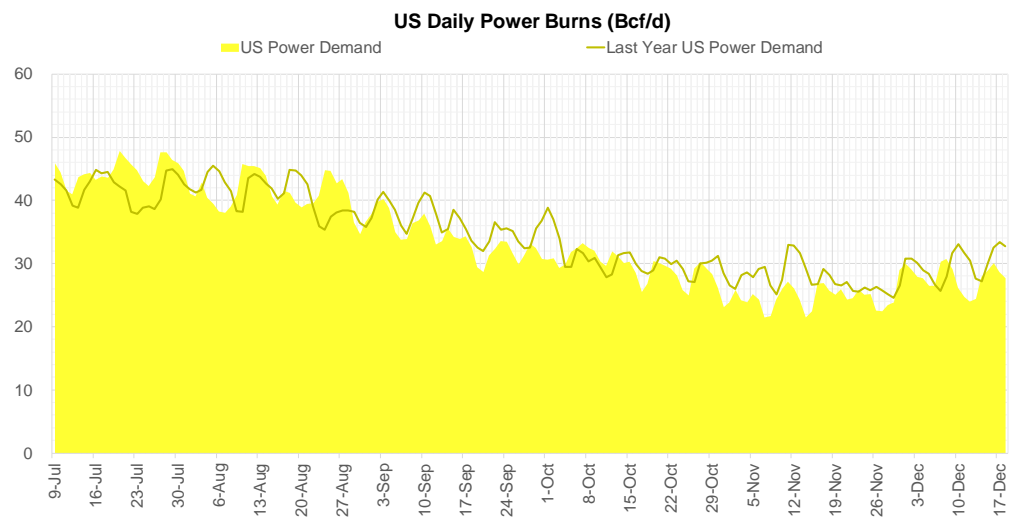
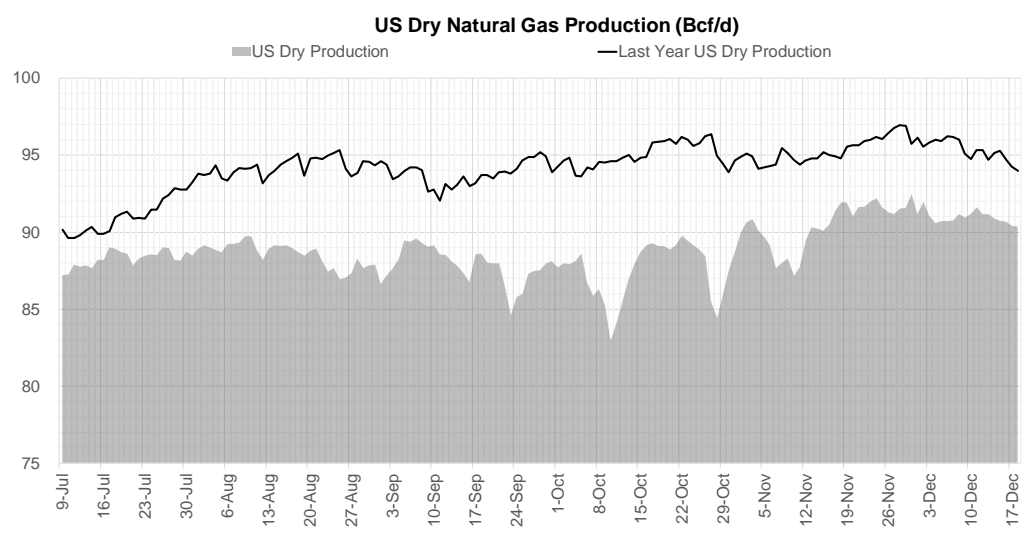
Next report and beyond		
Week Ending	Temp	Week Storage Projection
25-Dec	24.3	-154
01-Jan	27.0	-205
08-Jan	30.0	-263



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

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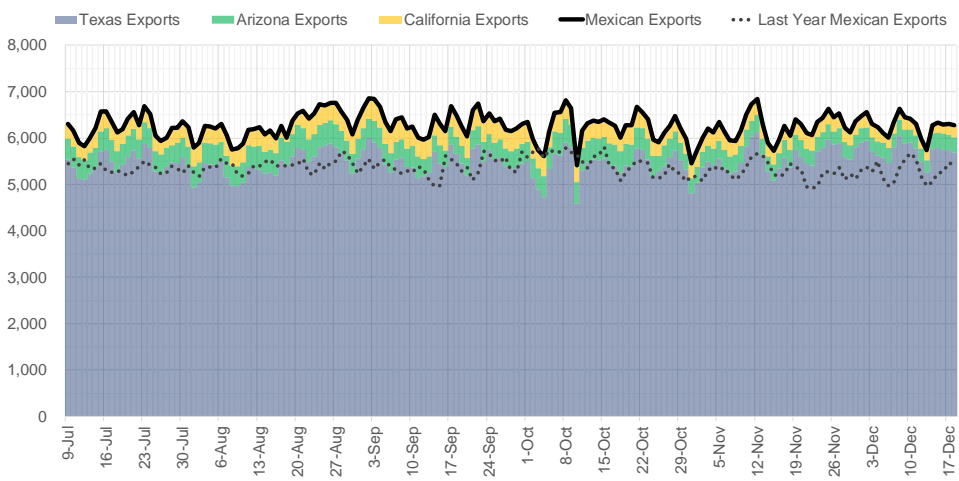
Supply – Demand Trends



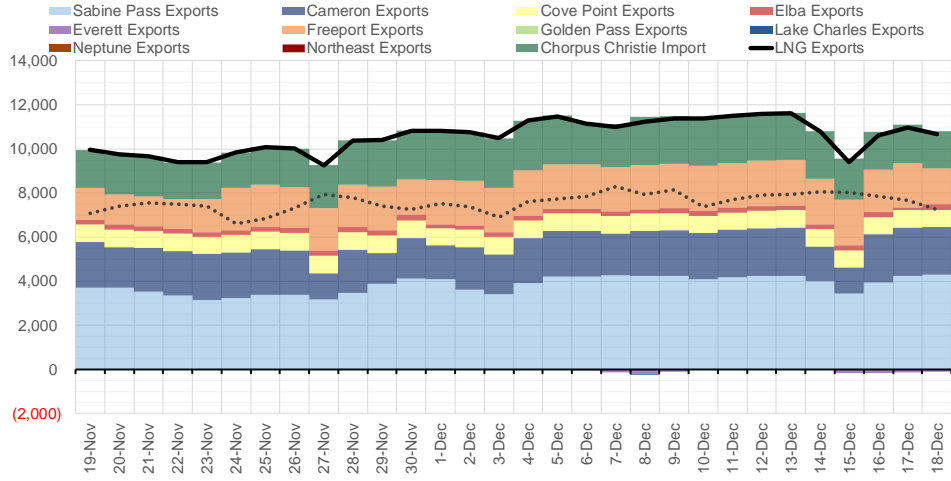
Source: Bloomberg

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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

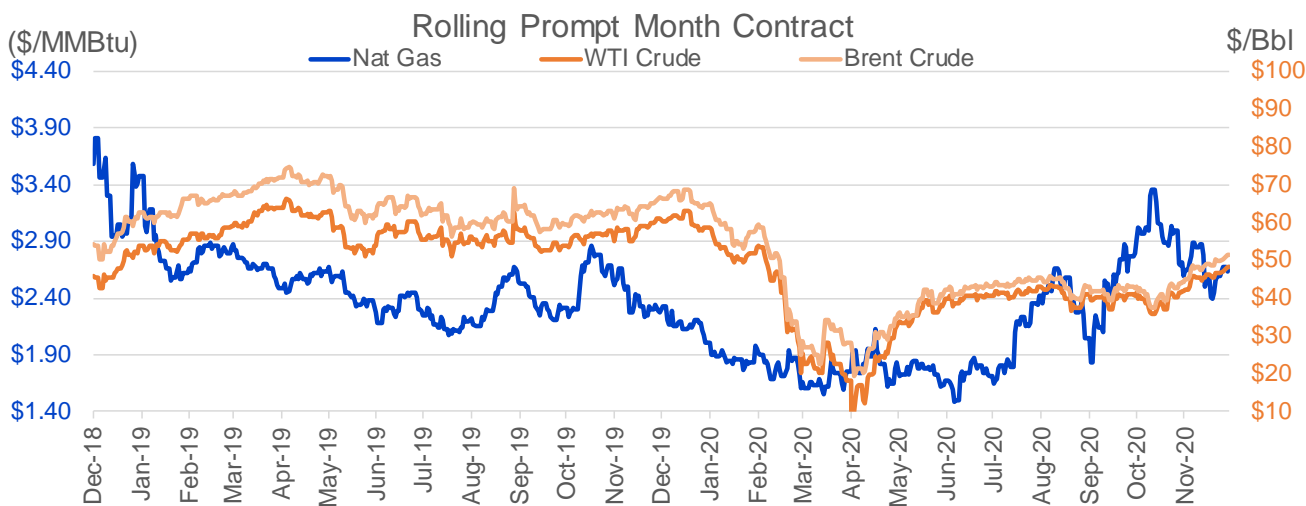
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
1	2021	P	2.25	8901	3	2021	P	2.00	42342
1	2021	C	3.00	8051	1	2021	C	3.50	41782
12	2021	P	2.00	8000	1	2021	C	3.00	39723
3	2021	C	3.00	6069	3	2021	C	5.00	38825
1	2021	C	3.25	5086	3	2021	C	6.00	36568
1	2021	C	2.75	4461	3	2021	C	3.50	34805
12	2021	C	4.00	4000	1	2021	P	2.50	34315
12	2021	P	1.25	4000	3	2021	C	4.00	33662
12	2021	P	2.75	4000	4	2021	C	3.00	31145
1	2021	C	3.50	3959	1	2021	P	2.25	30790
1	2021	P	2.50	3779	3	2021	C	3.00	28614
2	2021	C	3.00	3374	3	2021	C	3.25	28362
1	2021	C	2.90	2837	1	2021	C	4.50	27881
3	2021	C	4.00	2759	10	2021	C	4.00	27686
3	2021	C	3.50	2652	2	2021	P	2.25	26118
1	2021	P	2.40	2494	3	2021	C	4.50	26072
4	2021	C	3.00	2448	1	2021	C	5.00	25397
3	2021	C	6.00	2330	4	2021	C	4.00	24581
3	2021	C	2.75	2315	1	2021	C	4.00	24219
1	2021	C	2.85	2157	10	2021	C	3.25	24184
2	2021	C	3.25	2138	3	2021	P	2.50	23172
3	2021	C	5.00	2096	1	2021	C	3.75	22499
1	2021	C	3.10	2016	4	2021	C	3.25	21987
1	2021	C	2.80	1941	3	2021	C	7.00	21706
1	2021	P	2.20	1817	2	2021	C	4.00	21331
3	2021	P	2.50	1707	1	2021	C	6.00	21138
1	2021	C	2.95	1666	8	2021	C	4.00	20978
2	2021	P	2.50	1620	1	2021	C	2.75	20674
10	2021	P	2.50	1525	2	2021	P	2.50	20052
7	2021	P	2.00	1500	2	2021	C	3.50	19863
1	2021	P	2.30	1441	1	2021	P	2.00	19790
2	2021	C	3.50	1437	10	2021	C	5.00	19595
6	2021	C	3.50	1350	4	2021	C	2.75	19461
3	2021	P	2.25	1316	1	2021	C	3.25	18686
4	2021	P	2.50	1275	4	2021	C	5.00	18653
10	2021	C	3.50	1250	8	2021	P	2.25	18417
5	2021	P	2.50	1175	5	2021	C	3.00	18412
6	2021	P	2.50	1175	4	2021	P	2.00	16840
7	2021	P	2.50	1175	2	2021	P	2.00	16826
8	2021	P	2.50	1175	6	2021	C	4.00	16551
9	2021	P	2.50	1175	2	2021	C	5.00	16522
5	2022	C	3.00	1100	2	2021	C	3.00	15495
4	2021	C	3.25	905	2	2021	C	4.50	15438
2	2021	P	2.40	879	4	2021	P	2.25	15160
4	2021	C	3.50	866	4	2021	C	3.50	15119
1	2021	P	2.60	860	5	2021	C	3.50	14878
7	2021	C	3.50	854	1	2021	P	2.75	14728
5	2021	C	3.50	850	10	2021	P	2.00	14692
8	2021	C	3.50	850	10	2021	C	3.00	14516
					1	2021	P	3	14154.25

Source: CME, Nasdaq, ICE

Nat Gas Futures Open Interest CME, ICE and Nasdaq Combined

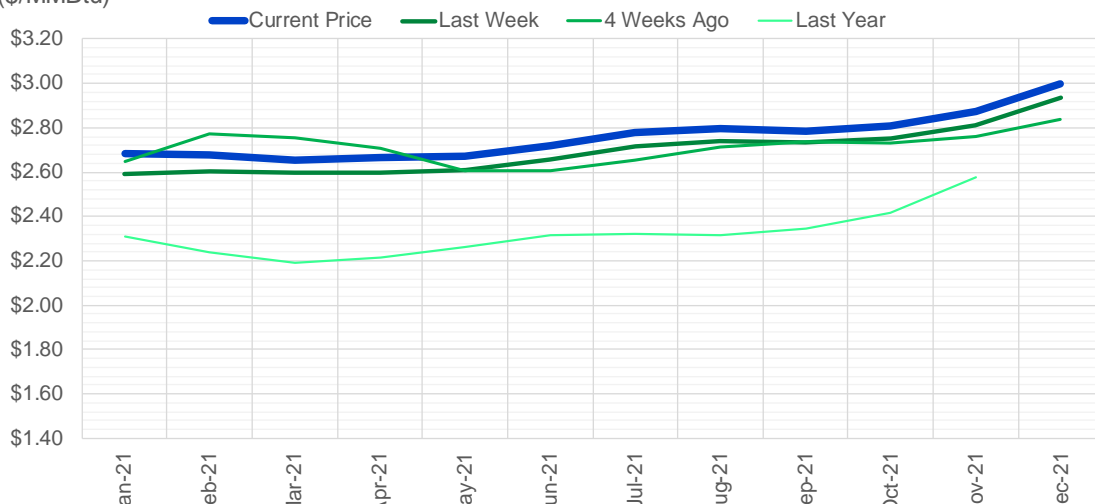
CME Henry Hub Futures (10,000 MMBtu)				ICE Henry Hub Futures Contract Equivalent (10,000 MM			
	Current	Prior	Daily Change	FOR JUNE 26	Current	Prior	Daily Change
JAN 21	79422	85806	-6384	JAN 21	93944	89533	4410.25
FEB 21	188116	177811	10305	FEB 21	77104	74280	2824
MAR 21	244621	243765	856	MAR 21	99740	101146	-1406
APR 21	101114	101618	-504	APR 21	85280	85628	-347.25
MAY 21	60007	60879	-872	MAY 21	76684	76979	-295.5
JUN 21	38909	39145	-236	JUN 21	63272	63569	-297.25
JUL 21	30917	30681	236	JUL 21	64843	65116	-273.5
AUG 21	28254	28884	-630	AUG 21	67456	67370	86
SEP 21	46029	46570	-541	SEP 21	62348	62585	-237.25
OCT 21	96064	97366	-1302	OCT 21	77672	78029	-357
NOV 21	43071	43550	-479	NOV 21	51235	51073	162
DEC 21	43354	42948	406	DEC 21	51798	51963	-164.5
JAN 22	39862	38613	1249	JAN 22	50542	50328	214.25
FEB 22	24232	24339	-107	FEB 22	39070	38983	86.75
MAR 22	27023	27369	-346	MAR 22	40635	40633	2
APR 22	24995	25557	-562	APR 22	39348	39494	-146.5
MAY 22	13347	13033	314	MAY 22	33355	33529	-174
JUN 22	6786	6772	14	JUN 22	31663	31657	5.75
JUL 22	5888	5878	10	JUL 22	33311	33244	67
AUG 22	5171	5103	68	AUG 22	32126	32064	62.75
SEP 22	4550	4552	-2	SEP 22	31584	31553	31.5
OCT 22	9311	9298	13	OCT 22	37137	37034	103.25
NOV 22	6411	6409	2	NOV 22	31685	31619	66.75
DEC 22	6940	6937	3	DEC 22	34240	34164	76.25
JAN 23	4446	4443	3	JAN 23	16107	16111	-3.5
FEB 23	1340	1330	10	FEB 23	14685	14653	32.25
MAR 23	2233	2230	3	MAR 23	14264	14229	35.25
APR 23	2748	2748	0	APR 23	13682	13614	68
MAY 23	1768	1768	0	MAY 23	12805	12696	109.25
JUN 23	557	557	0	JUN 23	12805	12745	59.5

Source: CME, ICE



(\$/MMBtu)

Nat Gas Term Structure




	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
Current Price	\$2.681	\$2.675	\$2.654	\$2.665	\$2.673	\$2.719	\$2.778	\$2.797	\$2.785	\$2.807	\$2.873	\$2.996
Last Week	\$2.591	\$2.603	\$2.597	\$2.596	\$2.612	\$2.658	\$2.716	\$2.740	\$2.731	\$2.751	\$2.811	\$2.935
vs. Last Week	\$0.090	\$0.072	\$0.057	\$0.069	\$0.061	\$0.061	\$0.062	\$0.057	\$0.054	\$0.056	\$0.062	\$0.061
4 Weeks Ago	\$2.650	\$2.770	\$2.755	\$2.709	\$2.608	\$2.608	\$2.652	\$2.710	\$2.734	\$2.732	\$2.762	\$2.836
vs. 4 Weeks Ago	\$0.031	-\$0.095	-\$0.101	-\$0.044	\$0.065	\$0.111	\$0.126	\$0.087	\$0.051	\$0.075	\$0.111	\$0.160
Last Year	\$2.328	\$2.310	\$2.240	\$2.194	\$2.215	\$2.264	\$2.315	\$2.324	\$2.314	\$2.346	\$2.415	\$2.578
vs. Last Year	\$0.353	\$0.365	\$0.414	\$0.471	\$0.458	\$0.455	\$0.463	\$0.473	\$0.471	\$0.461	\$0.458	\$0.418

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jan21/Apr21	\$/MMBtu	-0.016	▼ -0.021	▲ 0.146	▲ 0.403
NatGas Mar21/Apr21	\$/MMBtu	0.011	▲ 0.012	▼ -0.090	▼ -0.245
NatGas Oct21/Nov21	\$/MMBtu	0.066	▲ 0.006	▼ -0.008	▲ 0.000
NatGas Apr21/Oct21	\$/MMBtu	0.142	▲ 0.302	▲ 0.134	▼ -0.206
WTI Crude	\$/Bbl	48.34	▲ 1.770	▲ 6.190	▼ -12.100
Brent Crude	\$/Bbl	51.38	▲ 1.410	▲ 6.420	▼ -14.760
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	149.15	▲ 5.460	▲ 20.520	▼ -53.030
Propane, Mt. Bel	cents/Gallon	0.63	▲ 0.043	▲ 0.090	▲ 0.121
Ethane, Mt. Bel	cents/Gallon	0.20	▲ 0.000	▼ -0.019	▲ 0.020
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						
12/18/2020						
Baker Hughes 						
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago	
Oil	263	5	258	-422	685	
Gas	81	2	79	-44	125	
Miscellaneous	2	1	1	-1	3	
Directional	21	4	17	-30	51	
Horizontal	308	2	306	-398	706	
Vertical	17	2	15	-39	56	
Canada Breakout	This Week	+/-	Last Week	+/-	Year Ago	
Oil	41	-11	52	-47	88	
Gas	61	2	59	0	61	
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago	
Arkoma Woodford	0	0	0	-3	3	
Barnett	0	0	0	-2	2	
Cana Woodford	7	-1	8	-16	23	
DJ-Niobrara	6	-1	7	-14	20	
Eagle Ford	26	0	26	-41	67	
Granite Wash	1	0	1	0	1	
Haynesville	40	0	40	-10	50	
Marcellus	27	0	27	-13	40	
Mississippian	0	0	0	-2	2	
Permian	174	6	168	-240	414	
Utica	6	0	6	-5	11	
Williston	11	0	11	-40	51	