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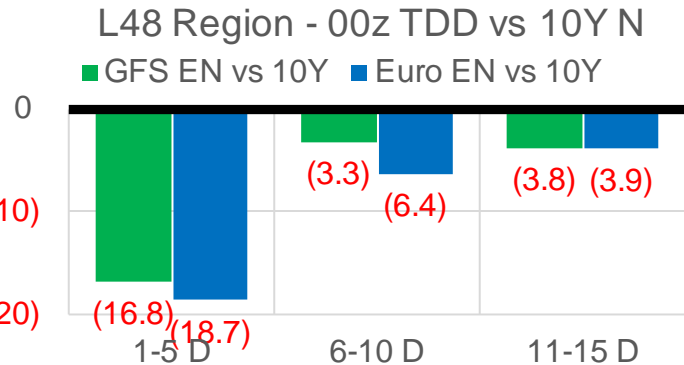
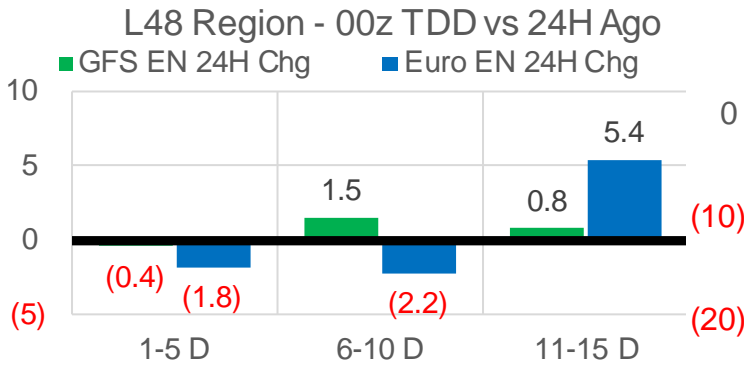
[Nat Gas Futures Open Interest](#)

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	Current	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$ 2.70 ▲	\$ 0.05 ▲	\$ 0.04

	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 42.94 ▲	\$ 0.79 ▲	\$ 1.1

	Current	Δ from YD	Δ from 7D Avg
Brent Prompt	\$ 45.61 ▲	\$ 0.65 ▲	\$ 1.2



	Current	Δ from YD	Δ from 7D Avg
US Dry Production	92.2 ▼	-0.24 ▼	-0.01

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	26.4 ▲	1.86 ▲	0.83

	Current	Δ from YD	Δ from 7D Avg
US ResComm	29.3 ▲	1.16 ▲	2.32

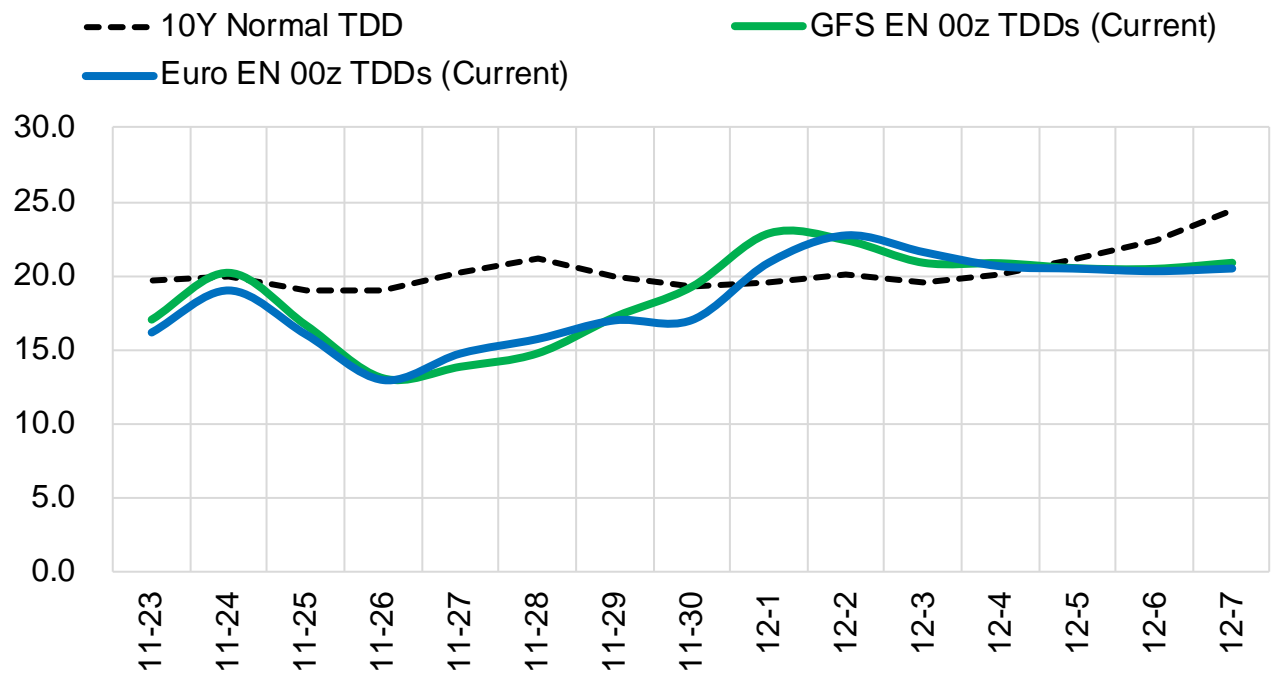
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.5 ▲	0.13 ▼	-0.26

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	9.8 ▲	0.38 ▼	-0.12

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.2 ▲	0.05 ▲	0.07

Short-term Weather Model Outlooks (00z)

L48 Region



Source: WSI , Bloomberg

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Lower 48 Component Models

Daily Balances

	17-Nov	18-Nov	19-Nov	20-Nov	21-Nov	22-Nov	23-Nov	DoD	vs. 7D
Lower 48 Dry Production	92.1	92.7	92.7	91.8	92.4	92.4	92.2	▼ -0.2	▼ -0.2
Canadian Imports	5.6	5.3	4.3	4.3	4.4	4.4	4.5	▲ 0.1	▼ -0.2
L48 Power	26.3	25.7	25.2	26.0	24.3	24.5	26.4	▲ 1.9	▲ 1.0
L48 Residential & Commercial	30.9	31.6	24.5	21.7	25.0	28.2	29.3	▲ 1.2	▲ 2.3
L48 Industrial	25.6	24.8	23.5	22.8	22.5	22.1	22.1	▼ 0.0	▼ -1.4
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	5.1	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.7	2.7	2.3	2.2	2.3	2.5	2.6	▲ 0.1	▲ 0.2
L48 Regional Gas Consumption	90.6	89.9	80.6	77.7	79.2	82.4	85.5	▲ 3.1	▲ 2.1
Net LNG Delivered	10.30	10.44	9.95	9.74	9.65	9.39	9.77	▲ 0.4	▼ -0.1
Total Mexican Exports	6.3	6.1	6.2	6.4	6.2	6.2	6.2	▲ 0.1	▲ 0.0
Implied Daily Storage Activity	-9.4	-8.4	0.3	2.2	1.8	-1.1	-4.7		
EIA Reported Daily Storage Activity									
Daily Model Error									

EIA Storage Week Balances

	16-Oct	23-Oct	30-Oct	6-Nov	13-Nov	20-Nov	WoW	vs. 4W
Lower 48 Dry Production	86.7	90.0	88.1	90.4	89.0	91.7	▲ 2.7	▲ 2.3
Canadian Imports	4.0	3.6	4.8	4.9	3.9	5.1	▲ 1.2	▲ 0.8
L48 Power	30.5	28.5	28.1	24.8	24.5	24.6	▲ 0.1	▼ -1.9
L48 Residential & Commercial	11.4	16.8	23.3	23.6	17.2	27.6	▲ 10.4	▲ 7.3
L48 Industrial	21.9	22.4	24.2	23.2	24.3	25.0	▲ 0.7	▲ 1.5
L48 Lease and Plant Fuel	4.8	4.9	4.8	5.0	4.9	5.1	▲ 0.1	▲ 0.1
L48 Pipeline Distribution	2.1	2.2	2.5	2.3	1.9	2.4	▲ 0.5	▲ 0.2
L48 Regional Gas Consumption	70.6	75.0	82.9	78.8	72.9	84.7	▲ 11.8	▲ 7.3
Net LNG Exports	6.9	8.0	9.2	10.2	10.4	10.2	▼ -0.2	▲ 0.7
Total Mexican Exports	6.2	6.3	6.2	6.0	6.3	6.1	▼ -0.3	▼ -0.2
Implied Daily Storage Activity	7.0	4.2	-5.3	0.3	3.3	-4.1	-7.4	
EIA Reported Daily Storage Activity	7.0	4.1	-5.1	1.1	4.4			
Daily Model Error	0.0	0.1	-0.2	-0.9	-1.1			

Monthly Balances

	2Yr Ago Nov-18	LY Nov-19	Jul-20	Aug-20	Sep-20	Oct-20	MTD Nov-20	MoM	vs. LY
Lower 48 Dry Production	88.1	95.3	88.3	88.6	88.6	88.3	90.8	▲ 2.5	▼ -4.5
Canadian Imports	4.1	4.5	4.4	4.9	3.8	4.3	4.5	▲ 0.3	▼ 0.0
L48 Power	25.5	27.6	43.8	40.6	33.3	29.2	24.7	▼ -4.5	▼ -2.8
L48 Residential & Commercial	32.9	32.8	7.9	7.7	8.5	16.8	22.9	▲ 6.1	▼ -9.9
L48 Industrial	24.4	24.0	19.3	20.8	21.1	22.5	23.9	▲ 1.4	▼ -0.1
L48 Lease and Plant Fuel	5.0	5.3	4.9	5.0	4.9	4.9	5.0	▲ 0.2	▼ -0.2
L48 Pipeline Distribution	2.6	2.8	2.4	2.4	2.1	2.3	2.2	▼ 0.0	▼ -0.6
L48 Regional Gas Consumption	90.3	92.5	78.3	76.4	69.8	75.7	78.8	▲ 3.1	▼ -13.6
Net LNG Exports	4.3	7.2	3.3	4.0	5.9	8.0	10.2	▲ 2.1	▲ 2.9
Total Mexican Exports	4.8	5.3	6.1	6.3	6.4	6.2	6.2	▼ 0.0	▲ 0.9
Implied Daily Storage Activity	-7.2	-5.1	4.9	6.8	10.2	2.6	0.2		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

Regional S/D Models Storage Projection

Week Ending 20-Nov

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-4.3	1.1	-3.2	-22
East	-4.8	1.7	-3.0	-21
Midwest	-1.5	0.7	-0.8	-6
Mountain	3.4	-3.5	-0.2	-1
South Central	-1.6	2.0	0.4	4
Pacific	0.2	0.2	0.4	3

*Adjustment Factor is calculated based on historical regional deltas

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

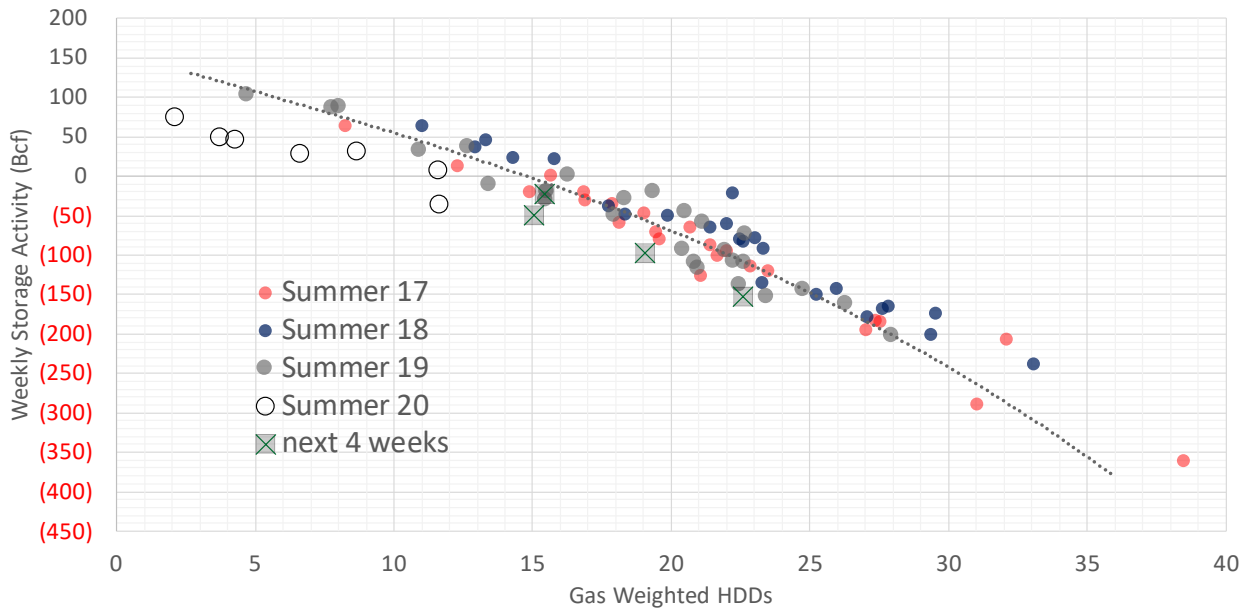


Weather Model Storage Projection

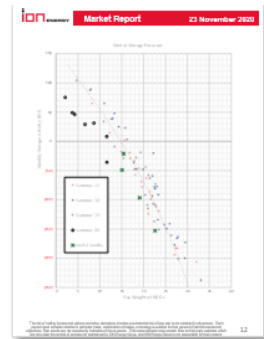
Next report
and beyond

Week Ending	Temp	Week Storage Projection
20-Nov	15.4	-22
27-Nov	15.1	-49
04-Dec	19.1	-97
11-Dec	22.6	-153

Winter Storage Forecast

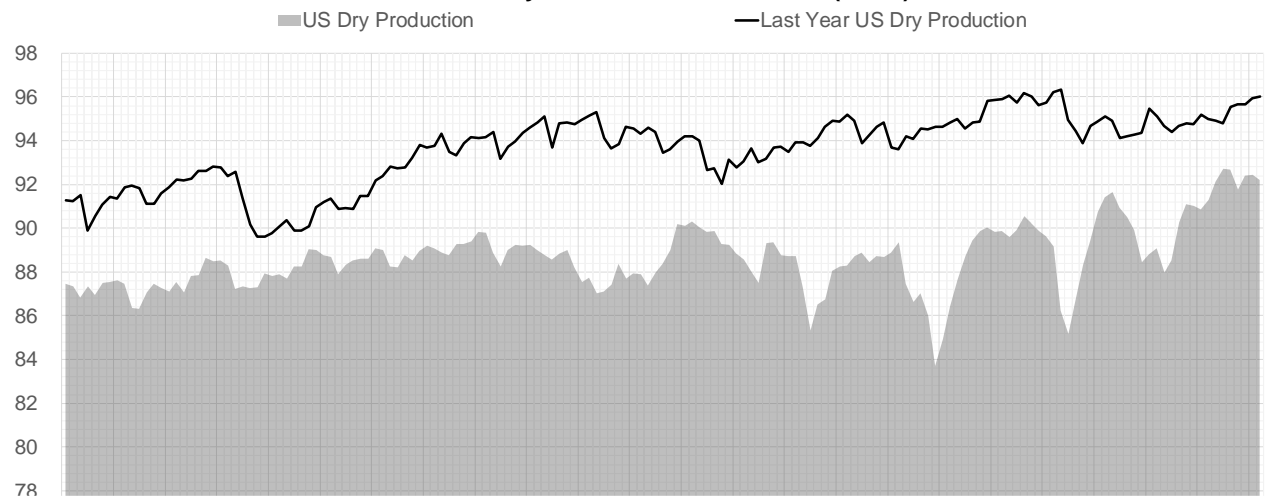


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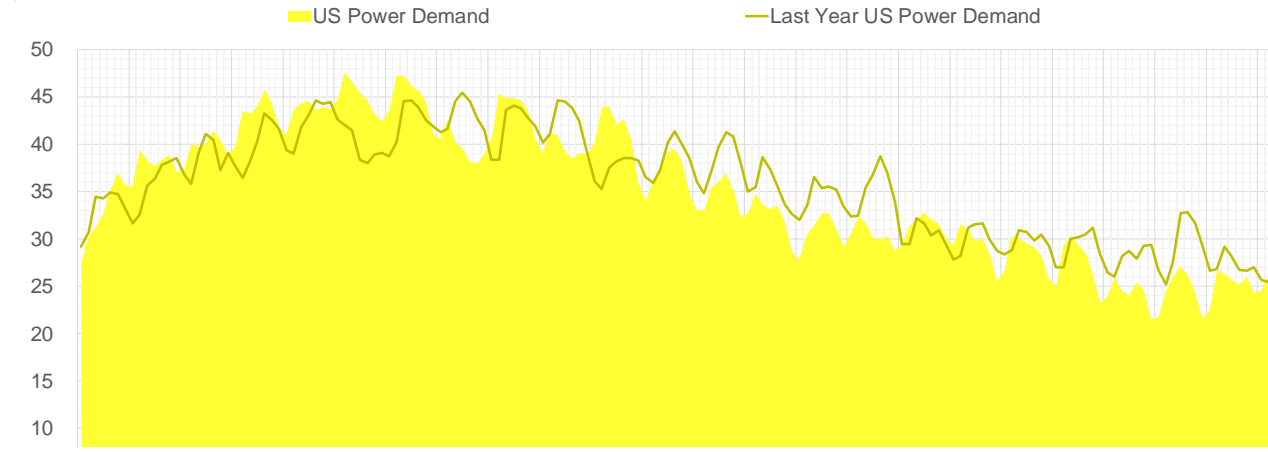


Supply – Demand Trends

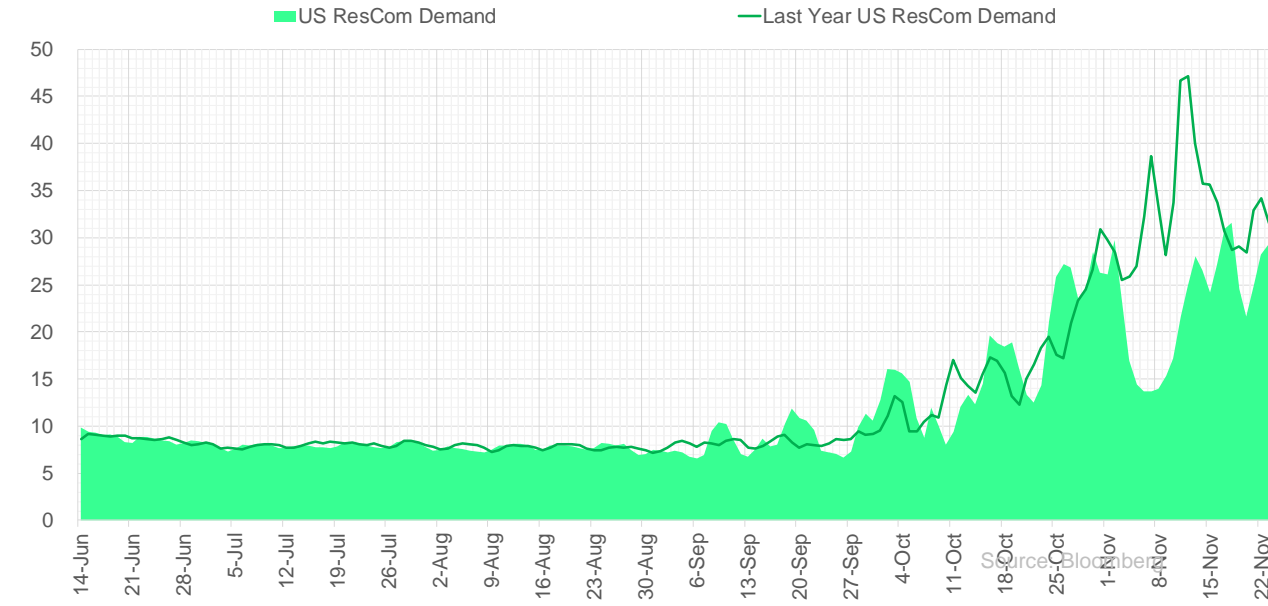
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)

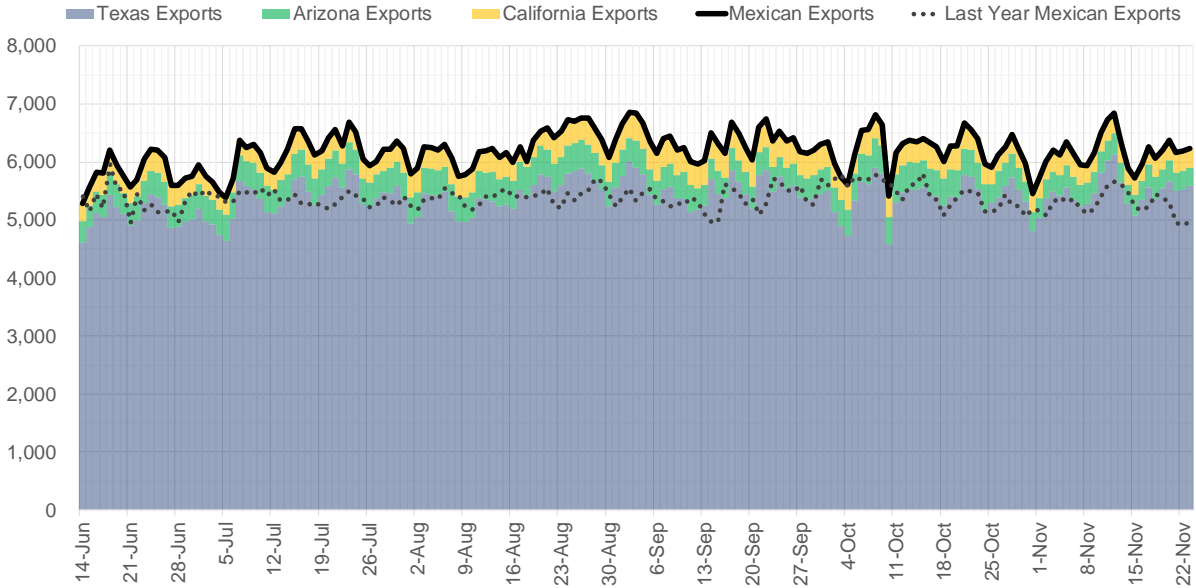


US Daily ResCom Consumption (Bcf/d)

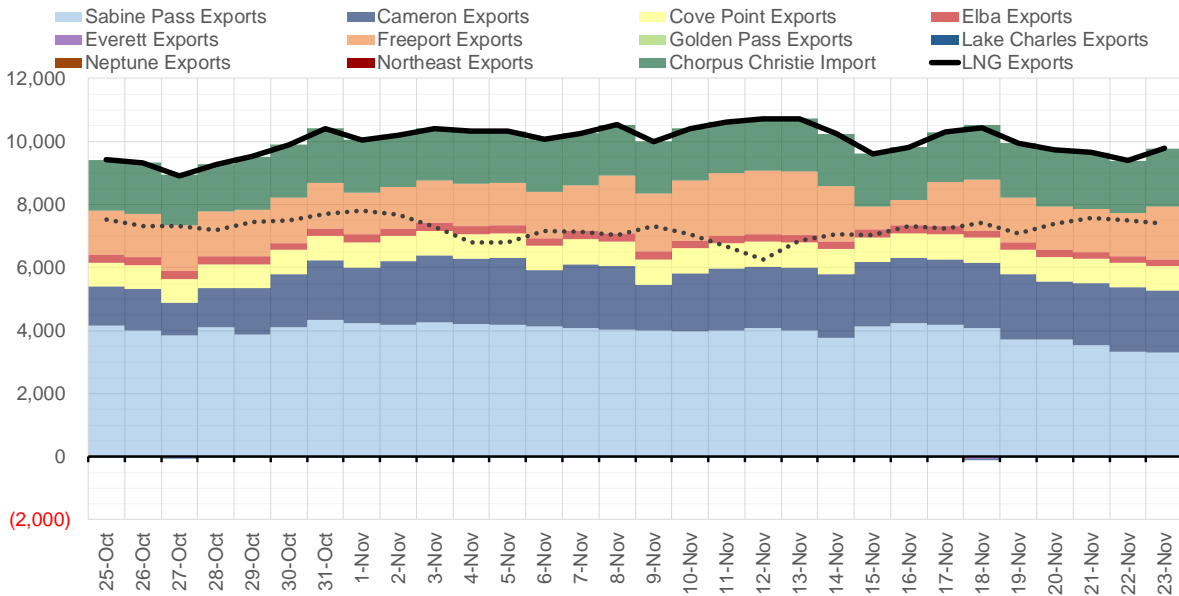


Source: Bloomberg

Mexican Exports (MMcf/d)



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



Source: Bloomberg

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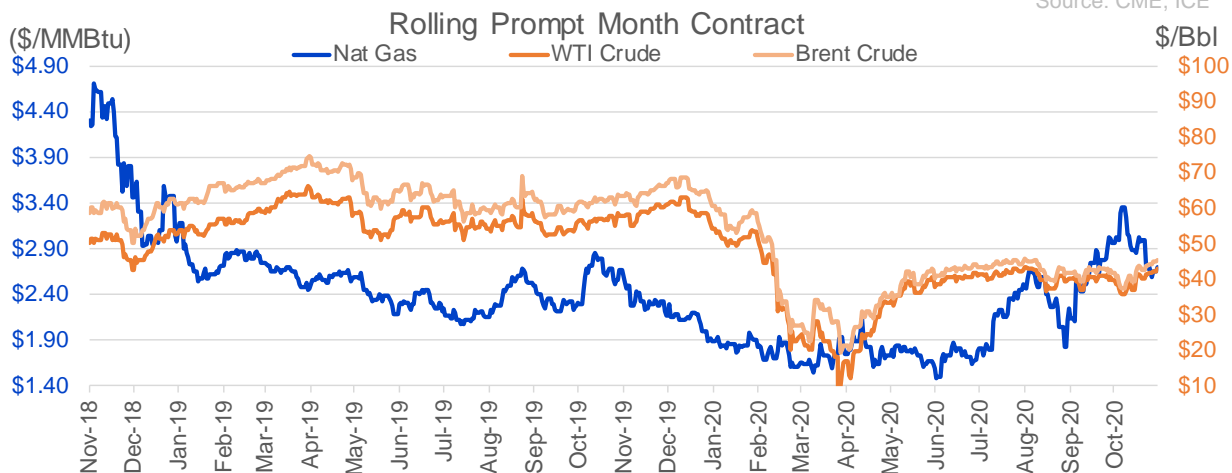
Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

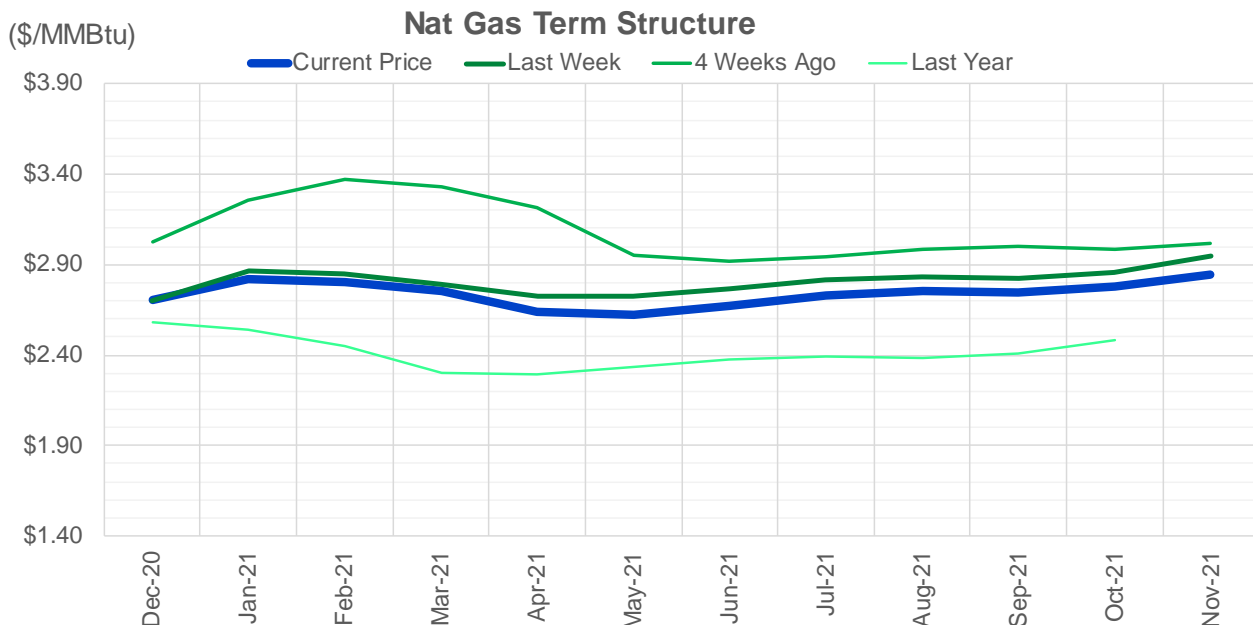
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
12	2020	C	2.80	9318	3	2021	P	2.00	40782
12	2020	P	2.50	5217	4	2021	C	4.00	39288
2	2021	C	4.50	4902	3	2021	C	4.00	38357
12	2020	C	2.90	4495	12	2020	P	2.00	31799
1	2021	C	3.00	3929	1	2021	C	3.50	30179
12	2020	C	2.70	3597	1	2021	C	4.50	29944
12	2020	C	3.00	3438	1	2021	P	2.50	28964
1	2021	C	4.00	3193	3	2021	C	3.25	28673
1	2021	C	2.75	3186	10	2021	C	4.00	28590
2	2021	C	5.00	2717	12	2020	C	3.75	27068
12	2020	C	2.75	2619	10	2021	C	3.25	26746
5	2021	C	3.00	2600	12	2020	C	3.50	25817
5	2021	C	3.25	2510	3	2021	C	6.00	25782
5	2021	C	3.50	2500	12	2020	C	4.00	25109
5	2021	C	3.75	2500	2	2021	P	2.25	24884
1	2021	C	4.50	2414	1	2021	C	5.00	24359
3	2021	P	2.25	2403	3	2021	C	7.00	23778
3	2021	P	2.00	2311	3	2021	C	3.00	23221
12	2020	P	2.70	2125	1	2021	C	4.00	23000
2	2021	P	2.25	2038	3	2021	C	4.50	22605
1	2021	C	4.75	1800	12	2020	C	4.50	22295
10	2021	C	3.25	1760	3	2021	C	3.50	22170
12	2020	P	2.20	1528	1	2021	C	3.75	22158
10	2021	C	2.75	1525	1	2021	C	3.00	22139
12	2020	P	2.60	1518	3	2021	P	2.50	21815
1	2021	P	2.50	1505	3	2021	C	5.00	21446
12	2020	C	2.85	1495	12	2020	P	2.75	21310
12	2020	P	2.65	1493	1	2021	C	6.00	21125
2	2021	C	3.00	1392	2	2021	C	3.50	20920
12	2020	P	2.90	1381	12	2020	C	3.25	20116
2	2021	C	4.00	1377	12	2020	C	3.00	19977
2	2021	C	3.50	1323	8	2021	P	2.25	19712
1	2021	P	2.25	1218	8	2021	C	4.00	19519
12	2020	C	2.95	1129	4	2021	C	3.25	19304
4	2021	P	2.25	1100	2	2021	C	4.00	19275
3	2021	P	2.10	1060	2	2021	P	2.50	19110
1	2021	P	2.00	987	4	2021	C	5.00	18828
4	2021	C	4.00	959	12	2020	P	3.00	18523
4	2021	P	2.10	950	10	2021	C	5.00	17973
5	2021	P	2.10	950	1	2021	P	2.25	17918
7	2021	C	3.50	950	2	2021	C	5.00	17416
1	2021	C	3.50	943	12	2020	P	2.50	17188
1	2021	P	2.40	932	4	2021	C	3.00	17042
1	2021	C	3.25	931	1	2021	P	2.00	16855
10	2021	C	4.00	900	2	2021	C	4.50	16150
12	2020	C	2.60	877	12	2020	C	5.00	15828
3	2021	C	4.00	869	4	2021	P	2.00	15624
4	2021	P	2.50	850	5	2021	C	3.00	15611
12	2021	C	3.75	750	10	2021	C	3.00	15314
					12	2020	P	1.5	14450

Source: CME, ICE

Nat Gas Futures Open Interest CME, and ICE 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
DEC 20	23710	35369	-11659	DEC 20	66146	67519	-1373.25
JAN 21	303123	300679	2444	JAN 21	97650	99455	-1804.75
FEB 21	95661	94806	855	FEB 21	68970	68494	476
MAR 21	187300	183944	3356	MAR 21	86494	86147	346.25
APR 21	83097	84245	-1148	APR 21	70123	70412	-288.25
MAY 21	60287	60949	-662	MAY 21	72050	71870	180
JUN 21	36243	36375	-132	JUN 21	59141	59267	-126
JUL 21	30618	31609	-991	JUL 21	61750	61358	392.5
AUG 21	28470	30361	-1891	AUG 21	64079	64113	-34
SEP 21	43445	43932	-487	SEP 21	57809	57884	-75.75
OCT 21	96823	101199	-4376	OCT 21	70445	69966	478.25
NOV 21	40385	41175	-790	NOV 21	51967	52256	-289.25
DEC 21	32977	33058	-81	DEC 21	49379	49316	63
JAN 22	30154	30313	-159	JAN 22	48523	48378	145
FEB 22	22432	23628	-1196	FEB 22	38635	38707	-72.25
MAR 22	25271	25290	-19	MAR 22	41353	41387	-33.75
APR 22	23145	23144	1	APR 22	39808	40308	-500.5
MAY 22	11769	11777	-8	MAY 22	31658	31493	164.75
JUN 22	6253	6245	8	JUN 22	30545	30350	194.5
JUL 22	5720	5714	6	JUL 22	32468	32352	115.75
AUG 22	4700	4703	-3	AUG 22	31091	30975	116.25
SEP 22	4121	4129	-8	SEP 22	30620	30388	232
OCT 22	7796	7345	451	OCT 22	34964	34825	139.25
NOV 22	5361	5444	-83	NOV 22	31414	31507	-93
DEC 22	5446	5454	-8	DEC 22	33763	33859	-96.5
JAN 23	4800	4564	236	JAN 23	15060	15072	-11.75
FEB 23	1140	1115	25	FEB 23	14019	14029	-10.25
MAR 23	2556	3086	-530	MAR 23	13915	13877	38.25
APR 23	2368	1868	500	APR 23	13072	13171	-98.5
MAY 23	451	451	0	MAY 23	12136	12077	58.5





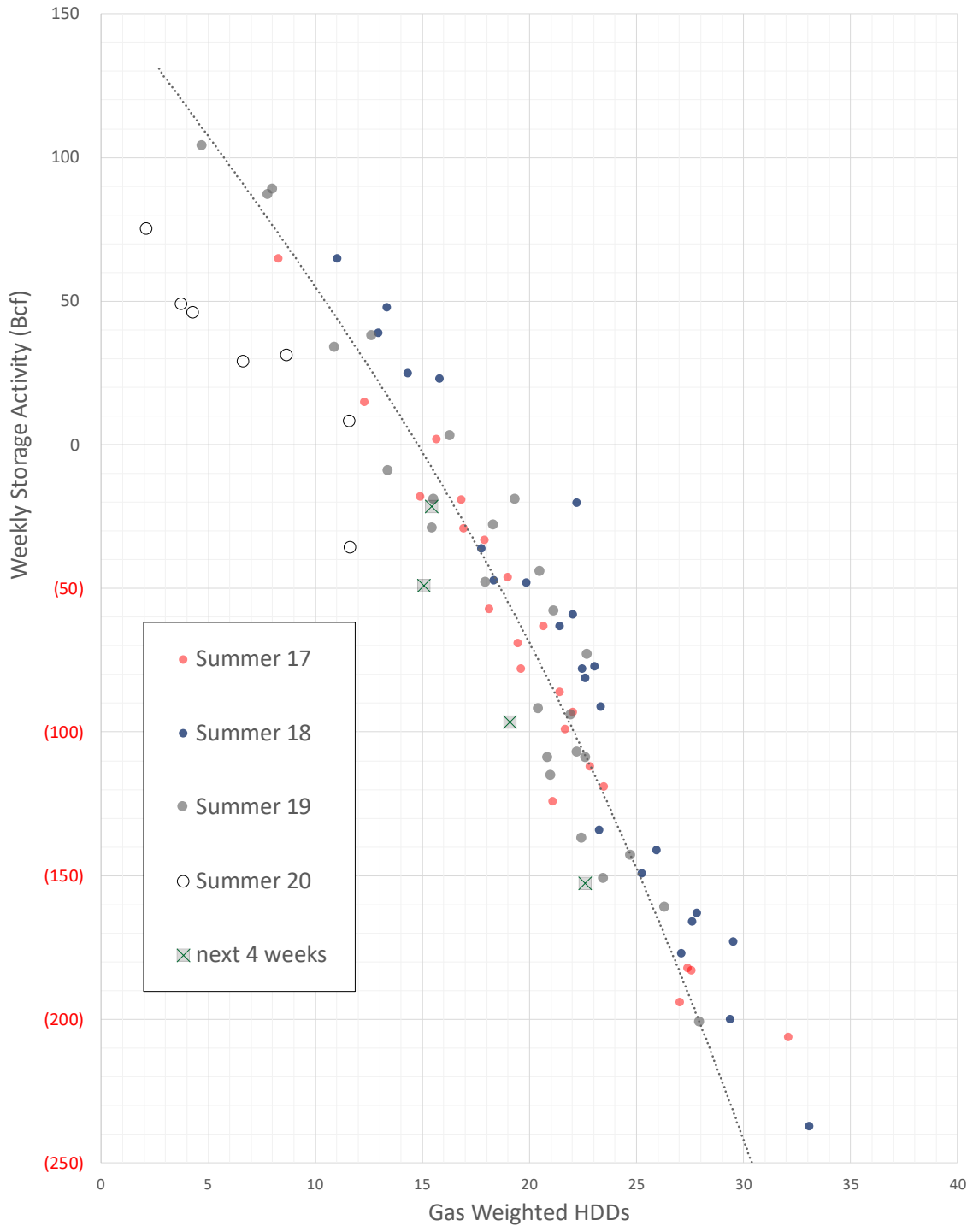
	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21
Current Price	\$2.704	\$2.819	\$2.800	\$2.751	\$2.636	\$2.626	\$2.670	\$2.728	\$2.752	\$2.746	\$2.778	\$2.847
Last Week	\$2.697	\$2.864	\$2.847	\$2.795	\$2.726	\$2.728	\$2.768	\$2.818	\$2.834	\$2.824	\$2.860	\$2.946
vs. Last Week	\$0.007	-\$0.045	-\$0.047	-\$0.044	-\$0.090	-\$0.102	-\$0.098	-\$0.090	-\$0.082	-\$0.078	-\$0.082	-\$0.099
4 Weeks Ago	\$3.024	\$3.253	\$3.371	\$3.329	\$3.213	\$2.954	\$2.916	\$2.947	\$2.988	\$2.999	\$2.987	\$3.021
vs. 4 Weeks Ago	-\$0.320	-\$0.434	-\$0.571	-\$0.578	-\$0.577	-\$0.328	-\$0.246	-\$0.219	-\$0.236	-\$0.253	-\$0.209	-\$0.174
Last Year	\$2.531	\$2.584	\$2.541	\$2.448	\$2.304	\$2.291	\$2.331	\$2.376	\$2.391	\$2.380	\$2.412	\$2.483
vs. Last Year	\$0.173	\$0.235	\$0.259	\$0.303	\$0.332	\$0.335	\$0.339	\$0.352	\$0.361	\$0.366	\$0.366	\$0.364

	Units	Cash Settled	Prompt Settle	Cash to Prompt
AGT Citygate	\$/MMBtu	1.83	4.01	2.18
TETCO M3	\$/MMBtu	1.68	2.44	0.76
FGT Zone 3	\$/MMBtu	1.70	2.71	1.01
Zone 6 NY	\$/MMBtu	1.70	2.99	1.29
Chicago Citygate	\$/MMBtu	2.16	2.51	0.35
Michcon	\$/MMBtu	2.17	2.41	0.24
Columbia TCO Pool	\$/MMBtu	1.91	2.01	0.10
Ventura	\$/MMBtu	2.10	2.64	0.54
Rockies/Opal	\$/MMBtu	3.10	2.47	-0.63
El Paso Permian Basin	\$/MMBtu	1.89	2.34	0.45
Socal Citygate	\$/MMBtu	3.75	3.23	-0.52
Malin	\$/MMBtu	2.93	3.11	0.18
Houston Ship Channel	\$/MMBtu	2.19	2.63	0.44
Henry Hub Cash	\$/MMBtu	2.22	2.44	0.22
AECO Cash	C\$/GJ	2.03	2.11	0.08
Station2 Cash	C\$/GJ	1.96	3.89	1.93
Dawn Cash	C\$/GJ	2.14	2.44	0.30

Source: CME, Bloomberg

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jan21/Apr21	\$/MMBtu	-0.184	▼ -0.046	▲ 0.233	▲ 0.259
NatGas Mar21/Apr21	\$/MMBtu	-0.115	▼ -0.046	▼ -0.374	▼ -0.381
NatGas Oct21/Nov21	\$/MMBtu	0.069	▼ -0.017	▲ 0.007	▲ 0.002
NatGas Apr21/Oct21	\$/MMBtu	0.142	▲ 0.138	▼ -0.208	▼ -0.248
WTI Crude	\$/Bbl	42.94	▲ 1.600	▲ 4.380	▼ -15.070
Brent Crude	\$/Bbl	45.61	▲ 1.790	▲ 5.150	▼ -18.040
Fuel Oil, NY Harbour 1%	\$/Bbl	98.03	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	130.45	▲ 7.560	▲ 18.270	▼ -63.980
Propane, Mt. Bel	cents/Gallon	0.54	▼ -0.013	▲ 0.019	▲ 0.011
Ethane, Mt. Bel	cents/Gallon	0.22	▼ -0.006	▲ 0.001	▲ 0.018
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▲ 0.050
Coal, PRB	\$/MMBtu	0.70			
Coal, ILB	\$/MTon	31.05	▲ 0.000	▲ 0.000	▼ -3.500
Coal, ILB	\$/MMBtu	1.32			

Winter Storage Forecast



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