

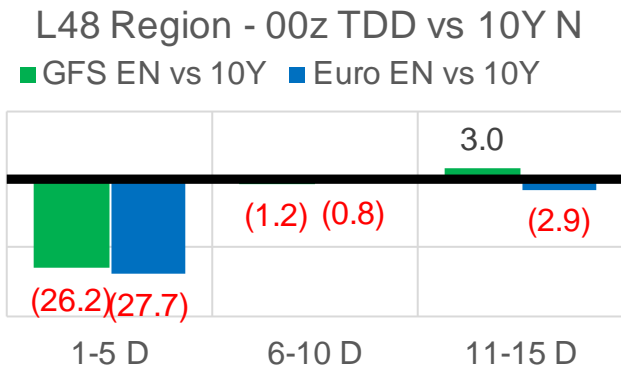
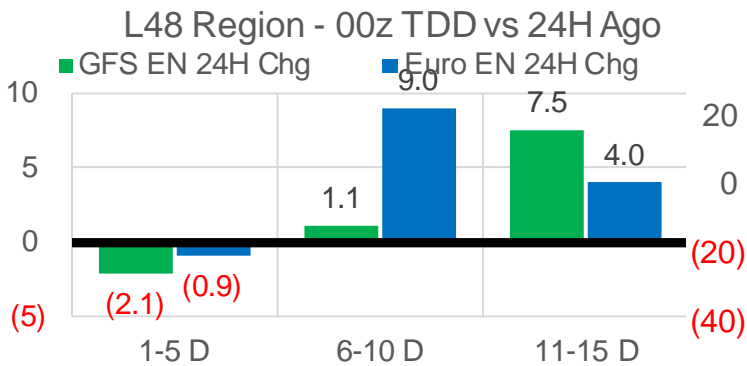
	Current	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$ 2.49	▲ \$ 0.09	▼ \$ (0.06)

	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 45.67	▲ \$ 0.07	▼ \$ (0.2)

	Current	Δ from YD	Δ from 7D Avg
Brent Prompt	\$ 48.99	▲ \$ 0.15	▲ \$ 0.1

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	Current	Δ from YD	Δ from 7D Avg
US Dry Production	90.4	▼ -0.63	▼ -0.56

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	28.9	▼ -1.29	▲ 0.69

	Current	Δ from YD	Δ from 7D Avg
US ResComm	35.4	▼ -4.00	▼ -3.22

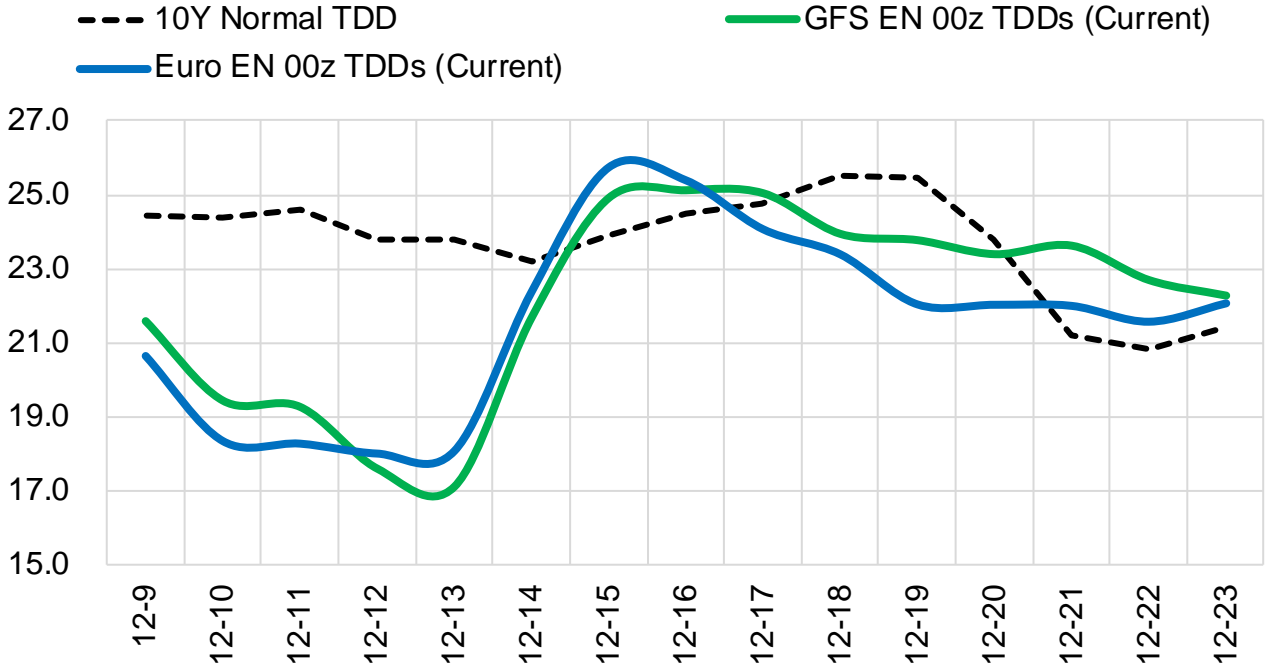
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	5.5	▼ -0.52	▼ -0.56

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	11.3	▲ 0.13	▲ 0.30

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.6	▼ -0.02	▲ 0.31

Short-term Weather Model Outlooks (00z)

L48 Region



Source: WSI , Bloomberg

Lower 48 Component Models

Daily Balances

	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	8-Dec	9-Dec	DoD	vs. 7D
Lower 48 Dry Production	91.1	90.6	90.7	90.7	90.8	91.1	90.4	▼ -0.6	▼ -0.4
Canadian Imports	6.3	5.7	5.9	6.2	6.5	6.0	5.5	▼ -0.5	▼ -0.6
L48 Power	27.8	27.6	26.4	26.4	30.2	30.2	28.9	▼ -1.3	▲ 0.8
L48 Residential & Commercial	38.2	34.7	38.3	39.7	40.5	39.4	35.4	▼ -4.0	▼ -3.1
L48 Industrial	22.9	22.2	22.2	22.0	22.2	21.9	21.7	▼ -0.2	▼ -0.5
L48 Lease and Plant Fuel	5.0	5.0	5.0	5.0	5.0	5.0	5.0	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	3.0	2.8	3.0	3.0	3.2	3.2	2.9	▼ -0.2	▼ -0.1
L48 Regional Gas Consumption	97.0	92.4	94.8	96.1	101.2	99.8	94.0	▼ -5.8	▼ -2.9
Net LNG Delivered	10.48	11.28	11.48	11.15	10.99	11.22	11.35	▲ 0.1	▲ 0.2
Total Mexican Exports	6.3	6.3	6.1	6.0	5.9	6.6	6.6	▼ 0.0	▲ 0.4
Implied Daily Storage Activity	-16.4	-13.7	-15.9	-16.4	-20.8	-20.5	-15.9		
EIA Reported Daily Storage Activity									
Daily Model Error									

EIA Storage Week Balances

	30-Oct	6-Nov	13-Nov	20-Nov	27-Nov	4-Dec	WoW	vs. 4W
Lower 48 Dry Production	87.4	89.6	88.2	90.9	91.6	91.6	▼ -0.1	▲ 1.5
Canadian Imports	4.8	4.9	3.9	5.1	4.5	5.3	▲ 0.8	▲ 0.7
L48 Power	28.0	24.7	24.4	24.7	24.8	26.5	▲ 1.7	▲ 1.8
L48 Residential & Commercial	22.7	23.1	16.8	27.2	26.7	34.4	▲ 7.7	▲ 10.9
L48 Industrial	24.1	23.0	24.0	23.3	22.1	22.9	▲ 0.8	▼ -0.2
L48 Lease and Plant Fuel	4.8	4.9	4.9	5.0	5.1	5.1	▲ 0.0	▲ 0.1
L48 Pipeline Distribution	2.5	2.3	1.9	2.4	2.4	2.8	▲ 0.4	▲ 0.6
L48 Regional Gas Consumption	82.1	78.0	72.1	82.6	81.0	91.6	▲ 10.6	▲ 13.2
Net LNG Exports	9.2	10.2	10.4	10.2	9.7	10.4	▲ 0.7	▲ 0.3
Total Mexican Exports	6.2	6.0	6.3	6.1	6.3	6.4	▲ 0.0	▲ 0.2
Implied Daily Storage Activity	-5.3	0.3	3.4	-2.9	-0.9	-11.5	-10.6	
EIA Reported Daily Storage Activity	-5.1	1.1	4.4	-2.6	-0.1			
Daily Model Error	-0.1	-0.8	-1.1	-0.3	-0.8			

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	4.3	4.6	6.0	▲ 1.4	▲ 1.5
L48 Power	24.4	28.9	41.0	34.1	29.4	24.6	28.5	▲ 3.9	▼ -0.4
L48 Residential & Commercial	39.3	39.1	7.7	8.8	16.2	24.2	38.4	▲ 14.1	▼ -0.7
L48 Industrial	22.4	24.4	20.3	19.2	22.3	23.0	22.5	▼ -0.5	▼ -1.9
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	79.1	97.4	▲ 18.3	▼ -3.3
Net LNG Exports	4.5	7.8	4.0	5.9	8.0	10.1	11.1	▲ 0.9	▲ 3.3
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	2.7	-0.5	-17.9		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

Regional S/D Models Storage Projection

Week Ending 4-Dec

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-11.8	1.0	-10.8	-76
East	-3.9	2.0	-1.9	-13
Midwest	-4.5	0.0	-4.5	-32
Mountain	2.8	-3.5	-0.7	-5
South Central	-5.9	2.6	-3.3	-23
Pacific	-0.3	-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)

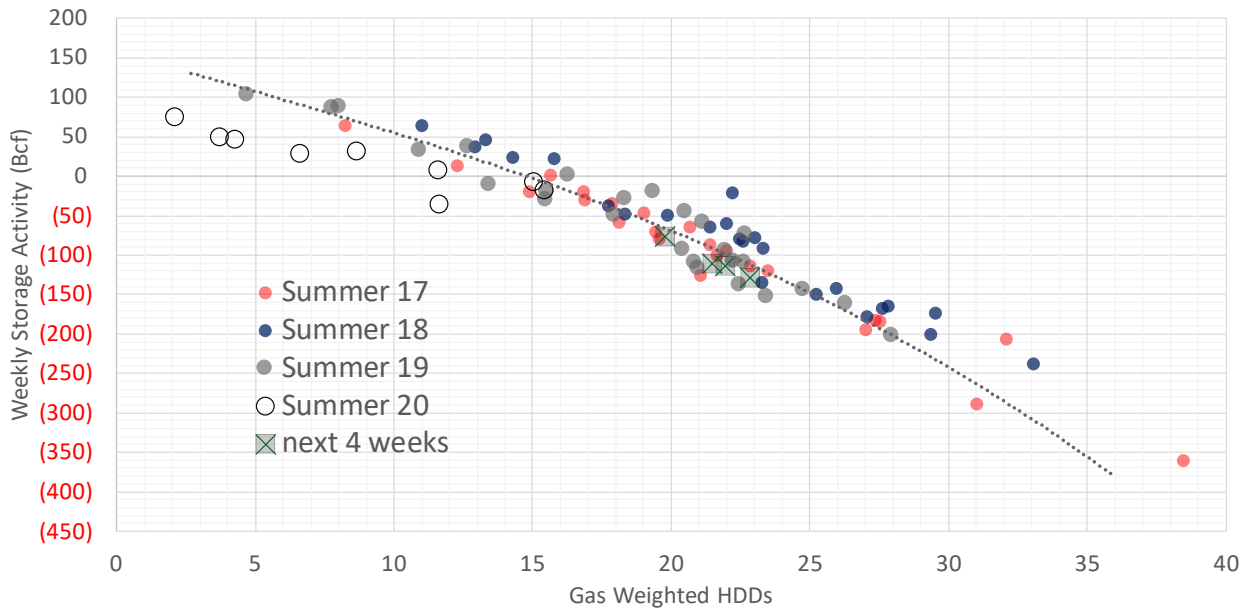


Weather Model Storage Projection

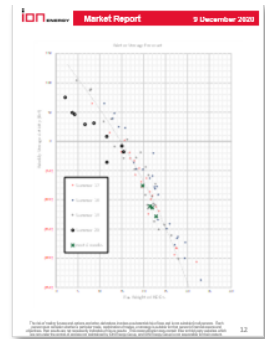
Next report
and beyond

Week Ending	Temp	Week Storage Projection
04-Dec	19.8	-76
11-Dec	21.5	-111
18-Dec	21.9	-114
25-Dec	22.8	-129

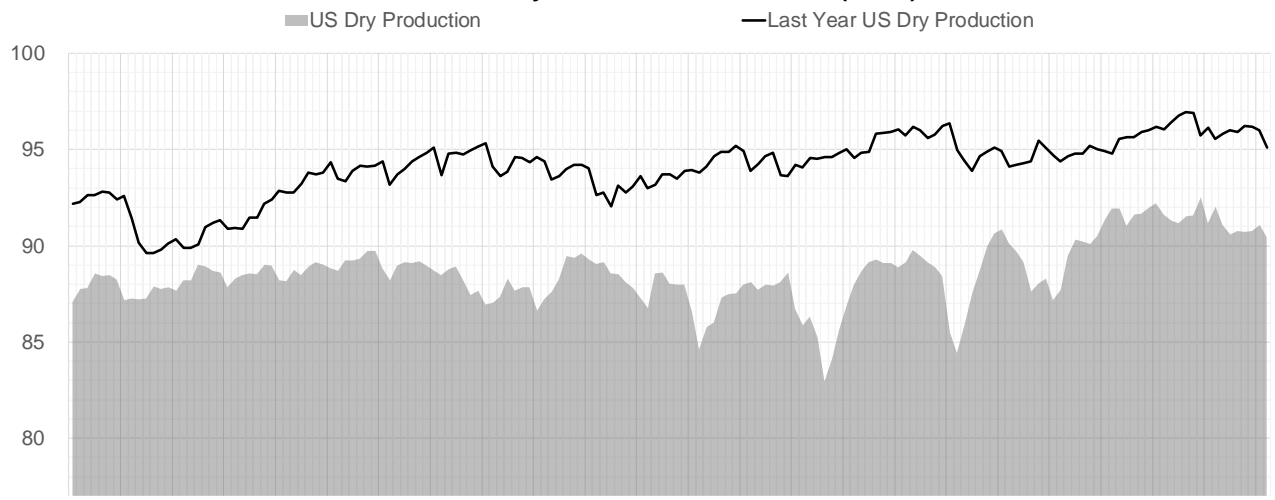
Winter Storage Forecast



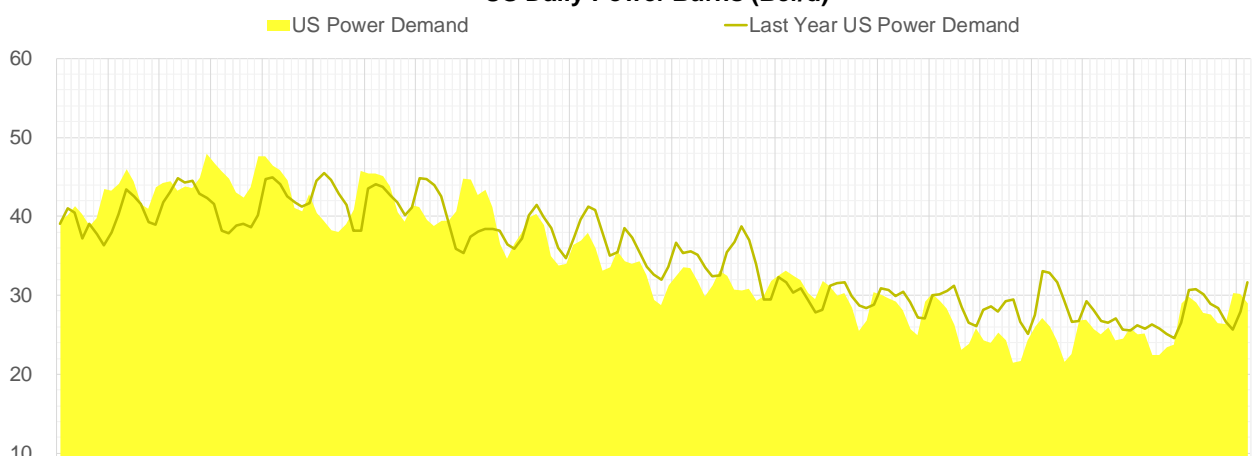
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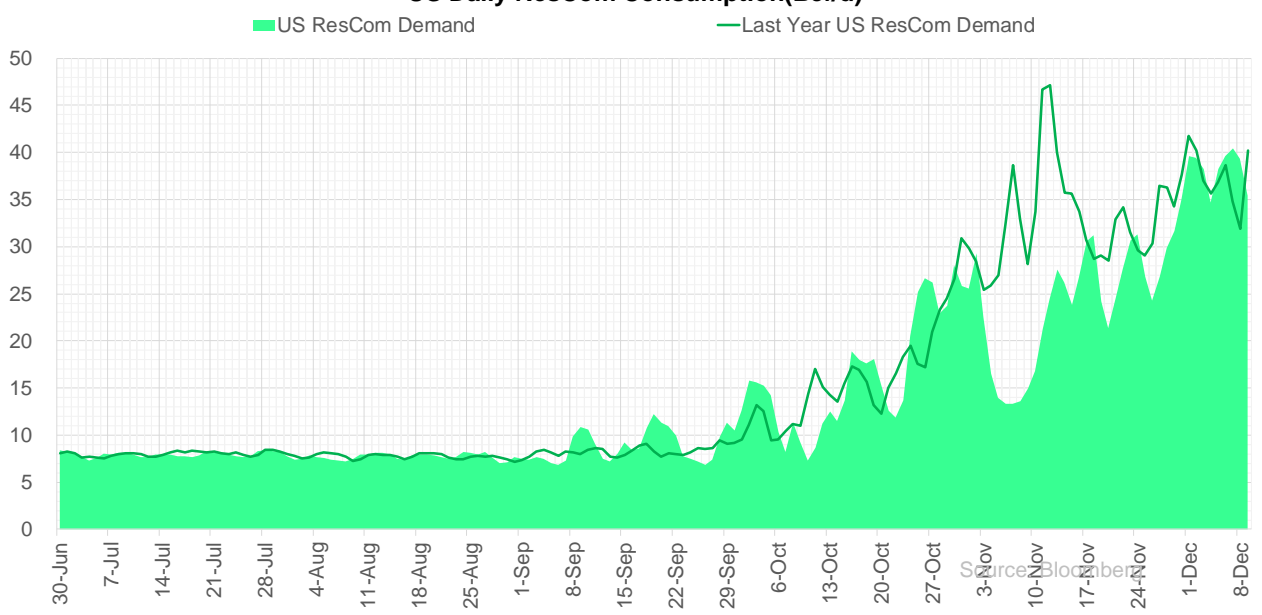
Supply – Demand Trends US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)

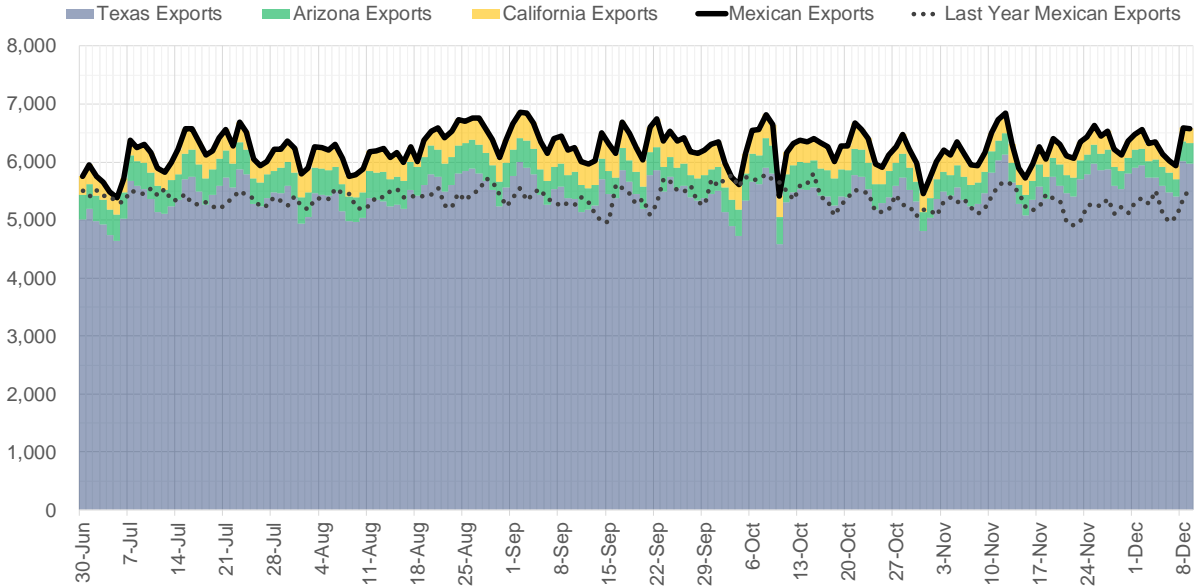


US Daily ResCom Consumption (Bcf/d)

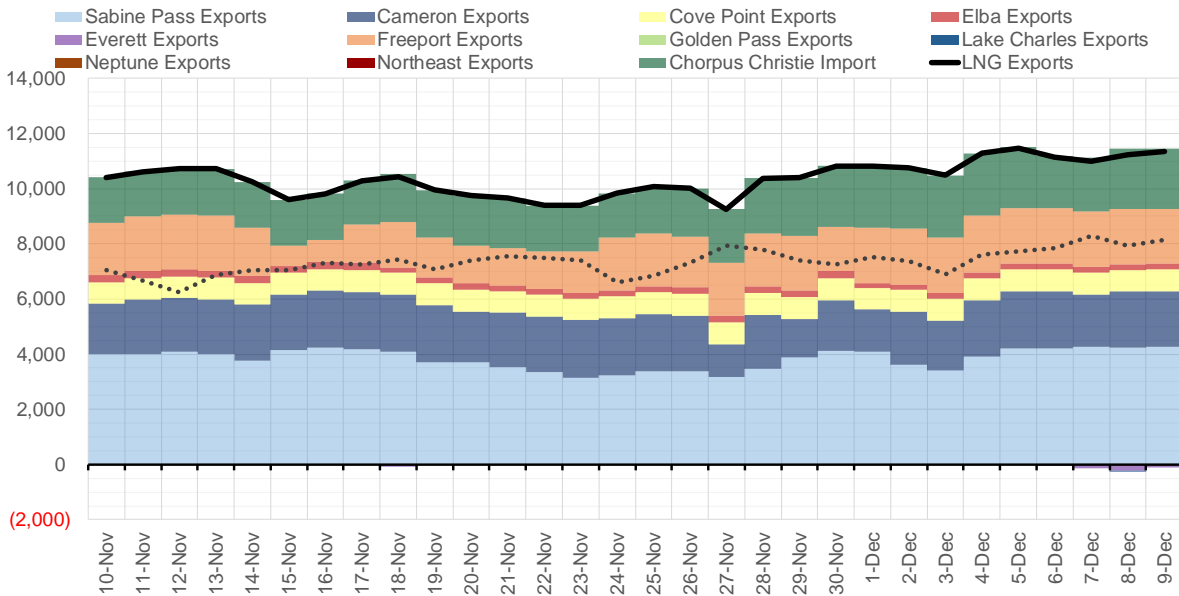


Source: Bloomberg

Mexican Exports (MMcf/d)



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



Source: Bloomberg

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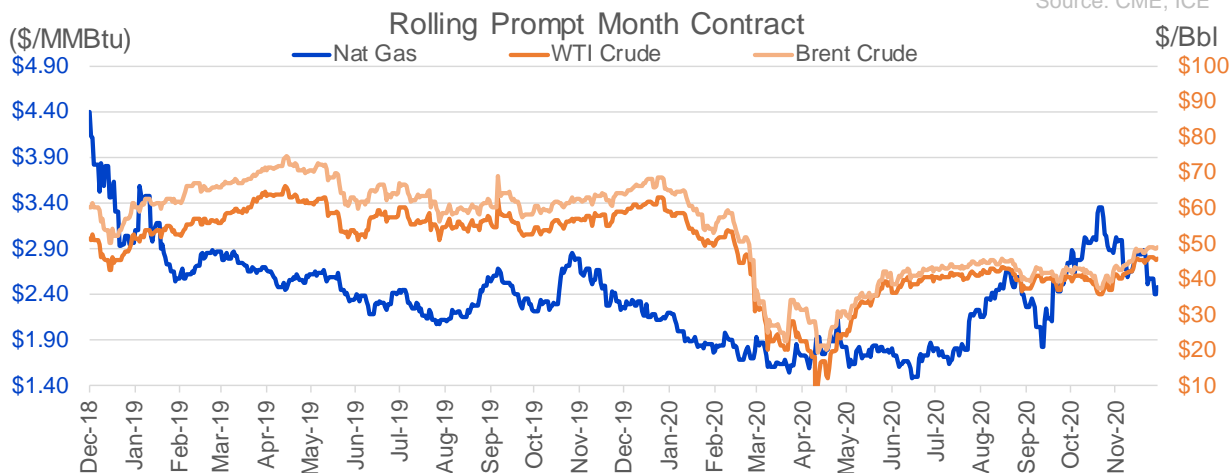
Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
3	2021	C	3.50	3243	3	2021	P	2.00	42081
3	2021	C	3.00	3212	3	2021	C	5.00	37756
1	2021	P	2.25	3059	1	2021	C	3.50	37219
1	2021	C	2.50	3042	3	2021	C	6.00	35389
1	2021	C	2.75	2801	3	2021	C	4.00	33616
1	2021	P	2.00	2685	1	2021	P	2.50	32317
1	2021	C	3.00	2542	4	2021	C	3.50	30643
1	2021	P	2.40	1727	3	2021	C	3.25	28462
2	2021	P	2.00	1726	4	2021	C	4.00	28291
4	2021	C	3.50	1702	1	2021	C	4.50	27889
7	2021	C	3.25	1600	10	2021	C	4.00	27761
3	2021	C	4.00	1537	3	2021	C	3.00	27349
2	2021	P	2.10	1518	1	2021	C	4.00	25583
1	2021	C	2.70	1454	1	2021	C	3.00	25466
4	2021	C	4.00	1403	1	2021	C	5.00	25398
1	2021	P	2.20	1392	3	2021	C	4.50	25062
1	2021	C	3.10	1252	2	2021	P	2.25	24408
3	2021	C	7.00	1251	10	2021	C	3.25	23797
3	2021	C	2.50	1150	3	2021	C	7.00	22907
4	2021	C	3.25	1100	1	2021	C	3.75	22303
6	2021	C	3.05	1071	3	2021	P	2.50	22097
1	2021	P	2.75	1016	1	2021	P	2.25	21433
3	2021	C	3.25	900	3	2021	C	3.50	21327
1	2021	C	2.80	890	1	2021	C	6.00	21138
1	2021	C	2.90	843	2	2021	C	3.50	19941
3	2021	P	2.00	815	10	2021	C	5.00	19575
1	2021	P	1.50	791	2	2021	C	4.00	19163
7	2021	C	2.75	700	8	2021	C	4.00	19103
1	2021	P	1.25	665	4	2021	C	2.75	19060
6	2021	C	2.50	650	4	2021	C	3.00	18941
6	2021	C	3.00	650	4	2021	C	5.00	18753
2	2021	P	1.75	632	2	2021	P	2.50	18746
1	2021	P	2.50	618	8	2021	P	2.25	18442
4	2021	P	2.25	601	1	2021	P	2.00	18421
3	2021	P	2.50	587	4	2021	C	3.25	17801
8	2021	P	2.25	550	5	2021	C	3.00	17590
2	2021	P	1.25	527	2	2021	C	5.00	17343
3	2021	C	6.00	524	1	2021	C	3.25	16895
4	2022	C	3.00	500	2	2021	P	2.00	16125
2	2021	C	3.50	471	4	2021	P	2.00	15866
3	2021	C	5.00	461	2	2021	C	3.00	15646
2	2021	C	2.90	456	1	2021	C	2.75	15427
5	2021	C	3.25	452	5	2021	C	3.50	15378
1	2021	C	2.65	445	6	2021	C	4.00	14671
1	2021	P	2.15	440	1	2021	P	3.00	14221
1	2021	C	2.60	433	1	2021	P	2.75	14143
2	2021	C	4.00	419	10	2021	C	3.00	14094
5	2021	C	3.00	412	2	2021	C	4.50	13944
1	2021	P	1.75	408	1	2021	C	7.00	13527
					5	2021	C	3.25	13196

Source: CME, ICE

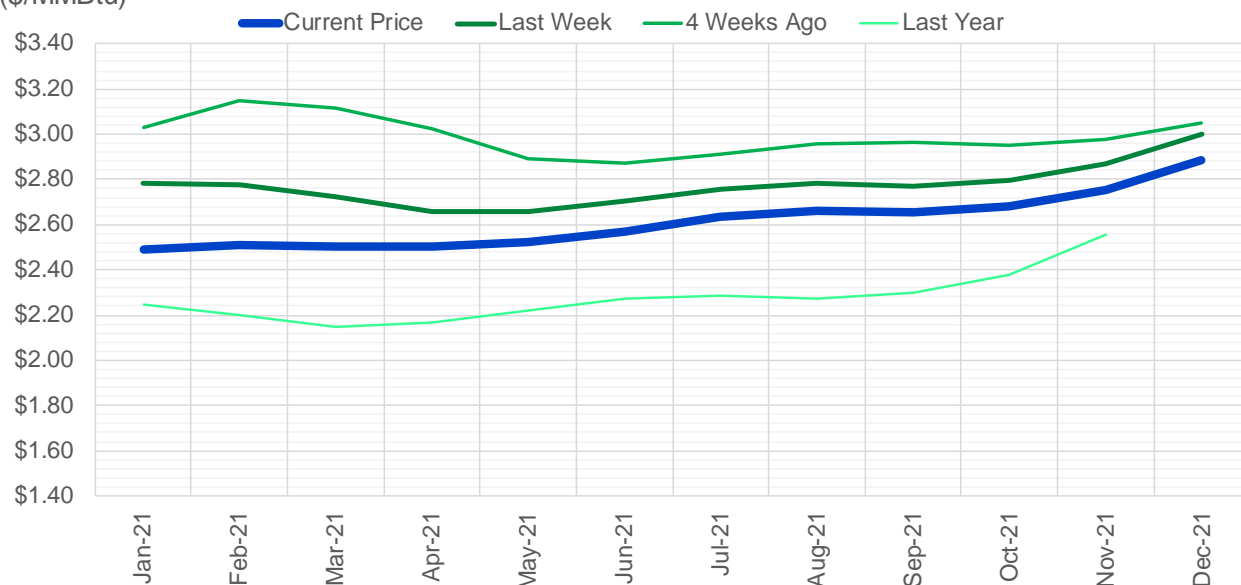
Nat Gas Futures Open Interest CME, and ICE Combined

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
JAN 21	233329	260901	-27572	JAN 21	93615	95551	-1936.25
FEB 21	116212	107072	9140	FEB 21	71297	71592	-295.75
MAR 21	194561	192957	1604	MAR 21	96915	95584	1330.25
APR 21	93503	91854	1649	APR 21	80527	80367	160.5
MAY 21	61027	58215	2812	MAY 21	73581	73444	137
JUN 21	38156	37879	277	JUN 21	61562	61273	288.75
JUL 21	30275	30370	-95	JUL 21	62754	62501	252.25
AUG 21	26107	27859	-1752	AUG 21	65316	65351	-35
SEP 21	42313	40472	1841	SEP 21	60418	59803	614.75
OCT 21	91429	91374	55	OCT 21	74532	74410	122.25
NOV 21	43027	42123	904	NOV 21	50858	50487	371.25
DEC 21	38495	37461	1034	DEC 21	50287	50186	101.5
JAN 22	39242	38778	464	JAN 22	49228	48715	513
FEB 22	25250	25319	-69	FEB 22	38465	38321	144
MAR 22	27172	26958	214	MAR 22	39858	39435	423
APR 22	24802	24427	375	APR 22	39113	38835	278.25
MAY 22	12895	12680	215	MAY 22	32485	32566	-81.25
JUN 22	6450	6458	-8	JUN 22	31051	30893	158
JUL 22	5847	5912	-65	JUL 22	32703	32755	-51.75
AUG 22	5087	5091	-4	AUG 22	31695	31683	12
SEP 22	4792	4771	21	SEP 22	31257	31121	135.5
OCT 22	8255	8237	18	OCT 22	36916	36735	181.25
NOV 22	6221	6214	7	NOV 22	31555	31583	-27.75
DEC 22	6738	6718	20	DEC 22	33918	33944	-25.25
JAN 23	4528	4538	-10	JAN 23	15813	15786	26.75
FEB 23	1347	1306	41	FEB 23	14455	14441	14.5
MAR 23	2585	2576	9	MAR 23	14042	13988	54.5
APR 23	2264	2283	-19	APR 23	13422	13360	61.75
MAY 23	651	652	-1	MAY 23	12500	12475	25
JUN 23	679	679	0	JUN 23	12475	12490	-15



(\$/MMBtu)

Nat Gas Term Structure



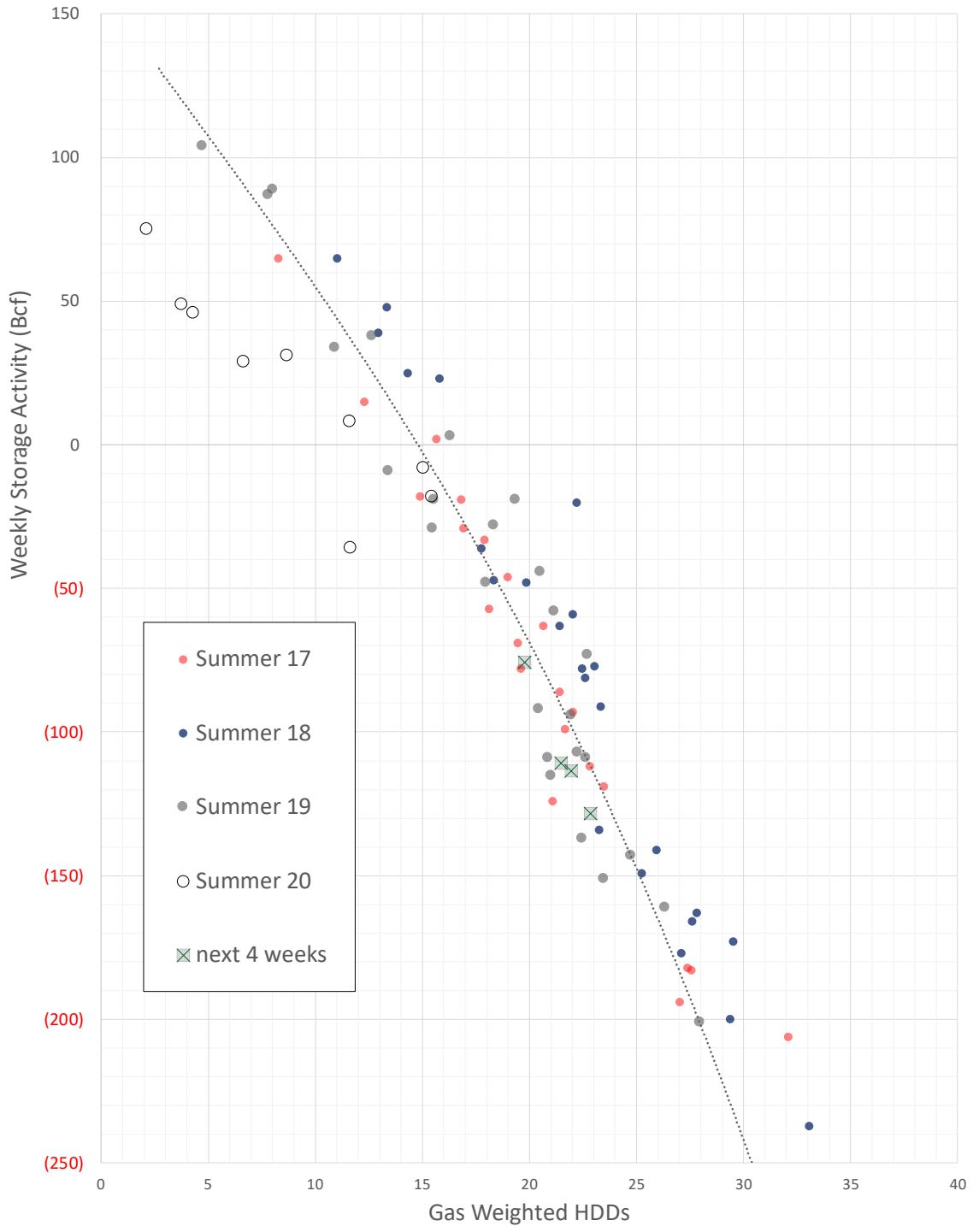
	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
Current Price	\$2.488	\$2.508	\$2.500	\$2.503	\$2.523	\$2.571	\$2.632	\$2.660	\$2.653	\$2.682	\$2.752	\$2.886
Last Week	\$2.780	\$2.778	\$2.723	\$2.657	\$2.659	\$2.701	\$2.758	\$2.780	\$2.773	\$2.798	\$2.866	\$3.003
vs. Last Week	-\$0.292	-\$0.270	-\$0.223	-\$0.154	-\$0.136	-\$0.130	-\$0.126	-\$0.120	-\$0.120	-\$0.116	-\$0.114	-\$0.117
4 Weeks Ago	\$3.031	\$3.151	\$3.116	\$3.026	\$2.892	\$2.872	\$2.910	\$2.957	\$2.966	\$2.949	\$2.980	\$3.047
vs. 4 Weeks Ago	-\$0.543	-\$0.643	-\$0.616	-\$0.523	-\$0.369	-\$0.301	-\$0.278	-\$0.297	-\$0.313	-\$0.267	-\$0.228	-\$0.161
Last Year	\$2.243	\$2.243	\$2.200	\$2.148	\$2.168	\$2.219	\$2.273	\$2.287	\$2.274	\$2.302	\$2.378	\$2.553
vs. Last Year	\$0.245	\$0.265	\$0.300	\$0.355	\$0.355	\$0.352	\$0.359	\$0.373	\$0.379	\$0.380	\$0.374	\$0.333

	Units	Cash Settled	Prompt Settle	Cash to Prompt
AGT Citygate	\$/MMBtu	2.61	5.33	2.72
TETCO M3	\$/MMBtu	1.98	3.71	1.73
FGT Zone 3	\$/MMBtu	2.37	2.75	0.38
Zone 6 NY	\$/MMBtu	2.37	4.44	2.07
Chicago Citygate	\$/MMBtu	2.21	2.68	0.47
Michcon	\$/MMBtu	2.20	2.45	0.25
Columbia TCO Pool	\$/MMBtu	1.97	2.20	0.23
Ventura	\$/MMBtu	2.18	2.96	0.78
Rockies/Opal	\$/MMBtu	2.98	2.51	-0.47
El Paso Permian Basin	\$/MMBtu	2.15	2.49	0.34
Socal Citygate	\$/MMBtu	4.75	3.34	-1.41
Malin	\$/MMBtu	2.97	3.10	0.13
Houston Ship Channel	\$/MMBtu	2.36	2.70	0.34
Henry Hub Cash	\$/MMBtu	2.36	2.54	0.18
AECO Cash	C\$/GJ	1.80	1.98	0.18
Station2 Cash	C\$/GJ	1.78	3.58	1.80
Dawn Cash	C\$/GJ	2.21	2.52	0.31

Source: CME, Bloomberg

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jan21/Apr21	\$/MMBtu	0.015	▲ 0.138	▲ 0.274	▲ 0.387
NatGas Mar21/Apr21	\$/MMBtu	0.003	▲ 0.069	▼ -0.131	▼ -0.237
NatGas Oct21/Nov21	\$/MMBtu	0.070	▲ 0.002	▲ 0.003	▲ 0.001
NatGas Apr21/Oct21	\$/MMBtu	0.179	▲ 0.197	▲ 0.008	▼ -0.102
WTI Crude	\$/Bbl	45.67	▲ 0.390	▲ 4.220	▼ -13.090
Brent Crude	\$/Bbl	48.99	▲ 0.740	▲ 5.190	▼ -14.730
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	140.73	▲ 4.110	▲ 16.150	▼ -52.150
Propane, Mt. Bel	cents/Gallon	0.58	▲ 0.003	▲ 0.025	▲ 0.066
Ethane, Mt. Bel	cents/Gallon	0.19	▼ -0.009	▼ -0.033	▲ 0.024
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	▼ -4.000
Coal, ILB	\$/MMBtu	1.32			

Winter Storage Forecast



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