

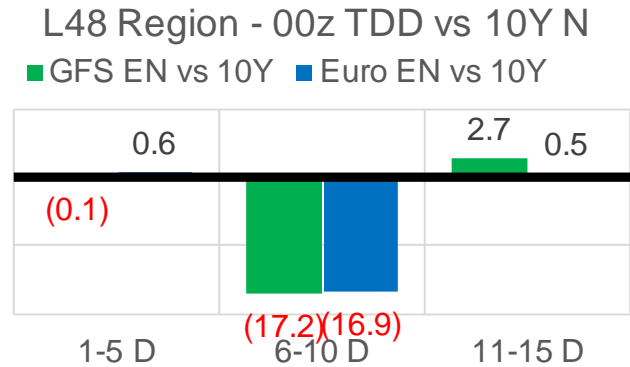
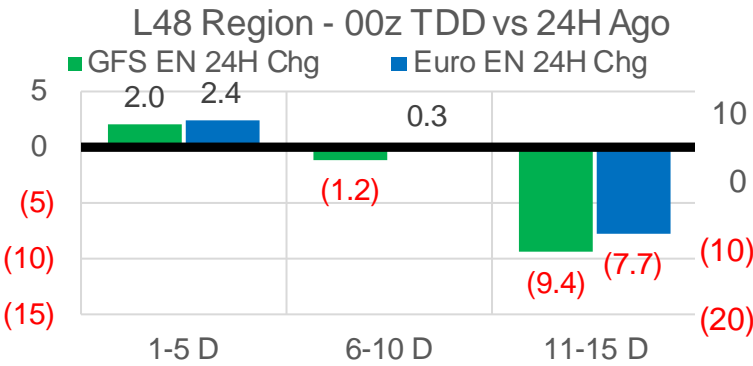
	Current	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$ 2.64	▼ \$ (0.14)	▼ \$ (0.21)

	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 44.82	▼ \$ (0.46)	▼ \$ (0.5)

	Current	Δ from YD	Δ from 7D Avg
Brent Prompt	\$ 47.85	▼ \$ (0.40)	▼ \$ (0.1)

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	Current	Δ from YD	Δ from 7D Avg
US Dry Production	90.7	▼ -1.41	▼ -0.93

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	27.8	▼ -0.81	▲ 2.20

	Current	Δ from YD	Δ from 7D Avg
US ResComm	38.5	▼ -1.16	▲ 6.06

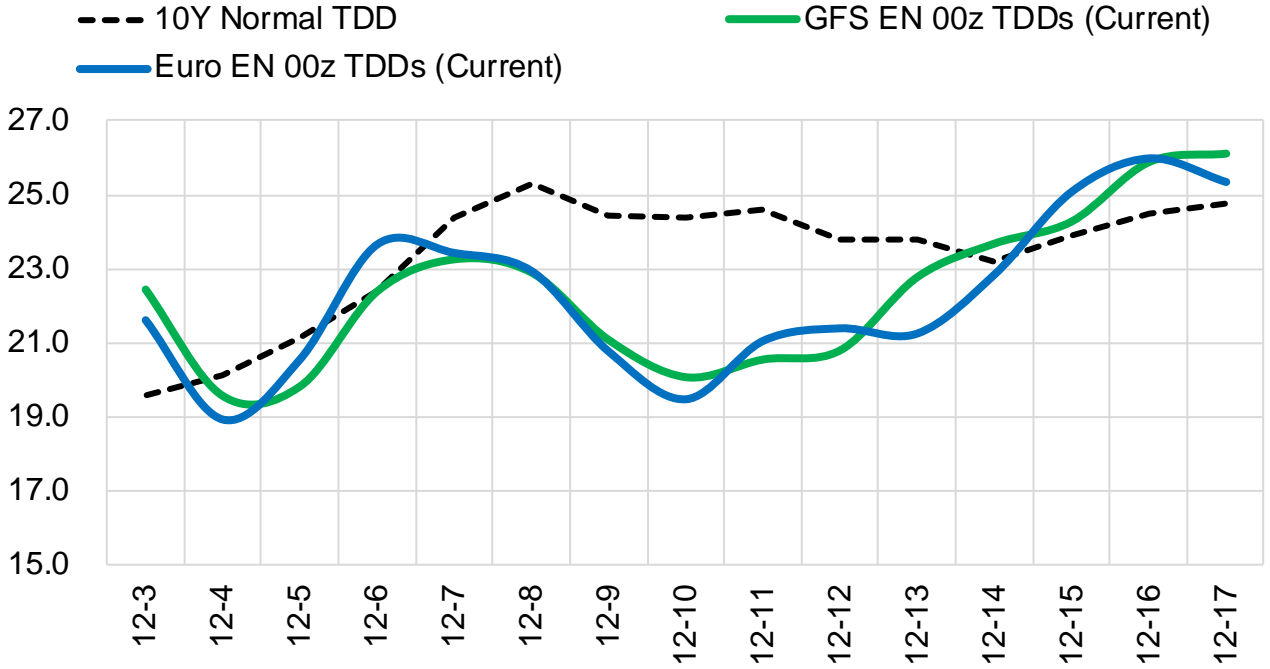
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	6.1	▲ 0.13	▲ 1.09

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	10.5	▼ -0.32	▲ 0.12

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.7	▲ 0.01	▲ 0.28

Short-term Weather Model Outlooks (00z)

L48 Region



Source: WSI , Bloomberg

Lower 48 Component Models

Daily Balances

	27-Nov	28-Nov	29-Nov	30-Nov	1-Dec	2-Dec	3-Dec	DoD	vs. 7D
Lower 48 Dry Production	91.1	91.5	91.6	92.5	91.2	92.1	90.7	▼ -1.4	▼ -1.0
Canadian Imports	4.5	4.7	4.8	5.0	5.7	6.0	6.1	▲ 0.1	▲ 1.0
L48 Power	22.5	23.4	23.8	28.9	29.8	28.6	27.8	▼ -0.8	▲ 1.7
L48 Residential & Commercial	26.8	29.8	31.6	35.0	39.7	39.6	38.5	▼ -1.2	▲ 4.7
L48 Industrial	22.3	22.3	22.4	23.1	23.5	23.4	23.3	▼ 0.0	▲ 0.5
L48 Lease and Plant Fuel	5.0	5.1	5.1	5.1	5.1	5.1	5.0	▼ -0.1	▼ 0.0
L48 Pipeline Distribution	2.3	2.5	2.6	3.0	3.2	3.1	3.0	▼ -0.1	▲ 0.3
L48 Regional Gas Consumption	78.9	83.0	85.5	95.1	101.2	99.9	97.7	▼ -2.2	▲ 7.1
Net LNG Delivered	9.26	10.38	10.39	10.82	10.81	10.78	10.47	▼ -0.3	▲ 0.1
Total Mexican Exports	6.5	6.3	6.1	6.4	6.5	6.7	6.7	▲ 0.0	▲ 0.3
Implied Daily Storage Activity	0.9	-3.5	-5.6	-14.8	-21.6	-19.3	-18.1		
EIA Reported Daily Storage Activity									
Daily Model Error									

EIA Storage Week Balances

	23-Oct	30-Oct	6-Nov	13-Nov	20-Nov	27-Nov	WoW	vs. 4W
Lower 48 Dry Production	89.2	87.4	89.6	88.2	90.9	91.6	▲ 0.7	▲ 2.6
Canadian Imports	3.7	4.8	4.9	3.9	5.1	4.5	▼ -0.6	▼ -0.2
L48 Power	28.6	28.0	24.7	24.4	24.6	24.8	▲ 0.1	▼ -0.7
L48 Residential & Commercial	16.1	22.7	23.1	16.8	27.2	26.7	▼ -0.5	▲ 4.2
L48 Industrial	22.5	24.1	23.0	24.0	23.4	23.1	▼ -0.3	▼ -0.5
L48 Lease and Plant Fuel	4.9	4.8	4.9	4.9	5.0	5.1	▲ 0.0	▲ 0.1
L48 Pipeline Distribution	2.2	2.5	2.3	1.9	2.4	2.4	▼ 0.0	▲ 0.1
L48 Regional Gas Consumption	74.2	82.1	78.0	72.1	82.7	82.0	▼ -0.6	▲ 3.3
Net LNG Exports	8.0	9.2	10.2	10.4	10.2	9.7	▼ -0.4	▼ -0.3
Total Mexican Exports	6.3	6.2	6.0	6.3	6.1	6.3	▲ 0.2	▲ 0.2
Implied Daily Storage Activity	4.3	-5.3	0.3	3.4	-2.9	-2.0	0.9	
EIA Reported Daily Storage Activity	4.1	-5.1	1.1	4.4	-2.6			
Daily Model Error	0.2	-0.2	-0.8	-1.1	-0.3			

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	91.3	▲ 0.9	▼ -3.8
Canadian Imports	4.8	4.5	4.9	3.8	4.3	4.6	5.9	▲ 1.3	▲ 1.4
L48 Power	24.4	28.9	41.0	34.1	29.4	24.6	28.8	▲ 4.1	▼ -0.1
L48 Residential & Commercial	39.3	39.1	7.7	8.8	16.2	24.2	39.3	▲ 15.0	▲ 0.2
L48 Industrial	22.4	24.4	20.3	19.2	22.3	23.3	23.4	▲ 0.1	▼ -1.0
L48 Lease and Plant Fuel	4.9	5.3	4.9	4.9	4.8	5.0	5.1	▲ 0.1	▼ -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	79.4	99.6	▲ 20.2	▼ -1.2
Net LNG Exports	4.5	7.8	4.0	5.9	8.0	10.1	10.7	▲ 0.6	▲ 2.9
Total Mexican Exports	4.5	5.0	6.3	6.4	6.2	6.2	6.6	▲ 0.4	▲ 1.6
Implied Daily Storage Activity	-10.7	-13.9	6.8	10.2	2.7	-0.7	-19.7		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

Regional S/D Models Storage Projection

Week Ending 27-Nov

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-2.1	0.9	-1.2	-8
East	-2.6	1.6	-1.0	-7
Midwest	-1.5	0.3	-1.3	-9
Mountain	3.2	-3.5	-0.3	-2
South Central	-1.1	2.5	1.4	10
Pacific	-0.1	0.0	-0.1	0

*Adjustment Factor is calculated based on historical regional deltas

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

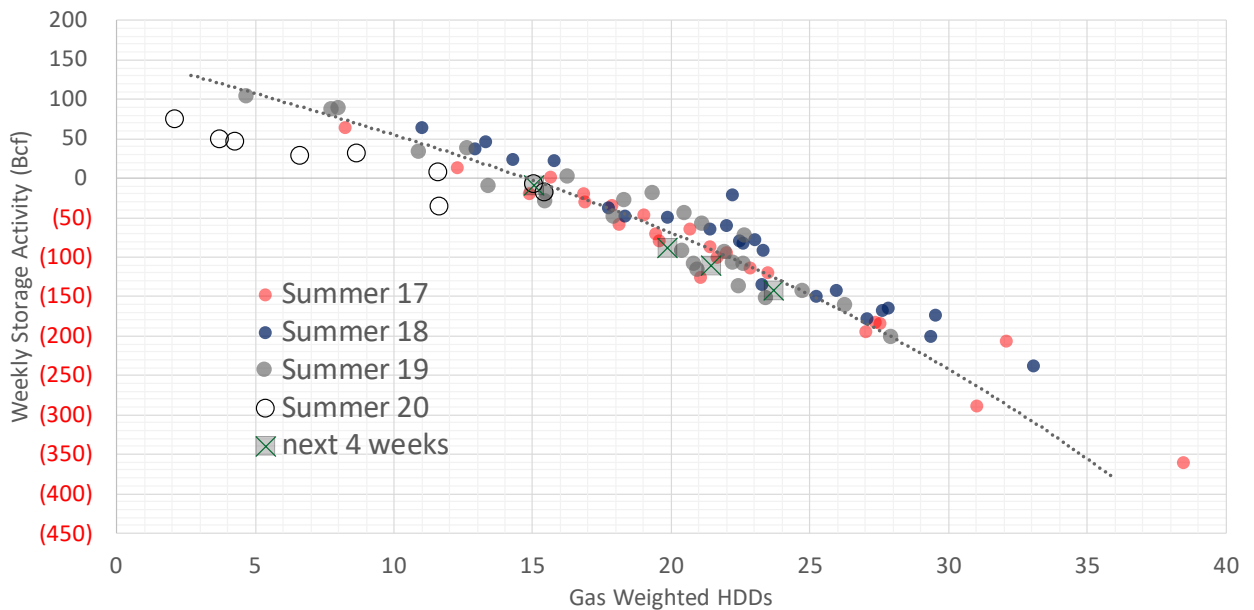


Weather Model Storage Projection

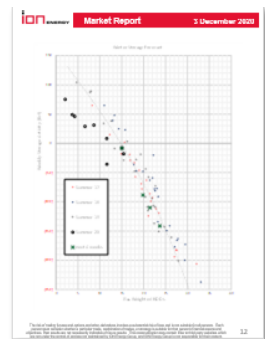
Next report
and beyond

Week Ending	Temp	Week Storage Projection
27-Nov	15.1	-8
04-Dec	19.9	-88
11-Dec	21.4	-110
18-Dec	23.7	-141

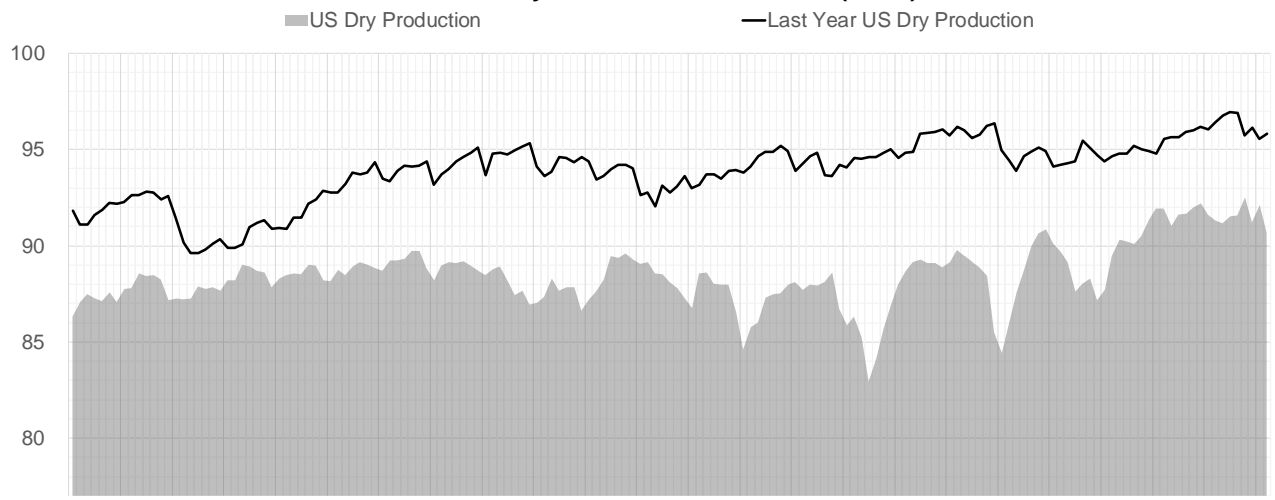
Winter Storage Forecast



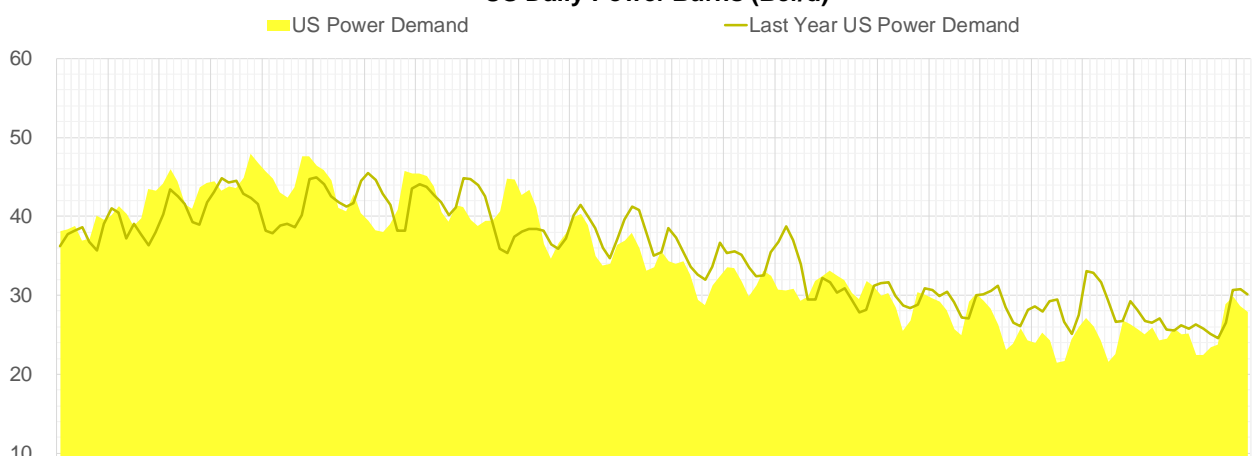
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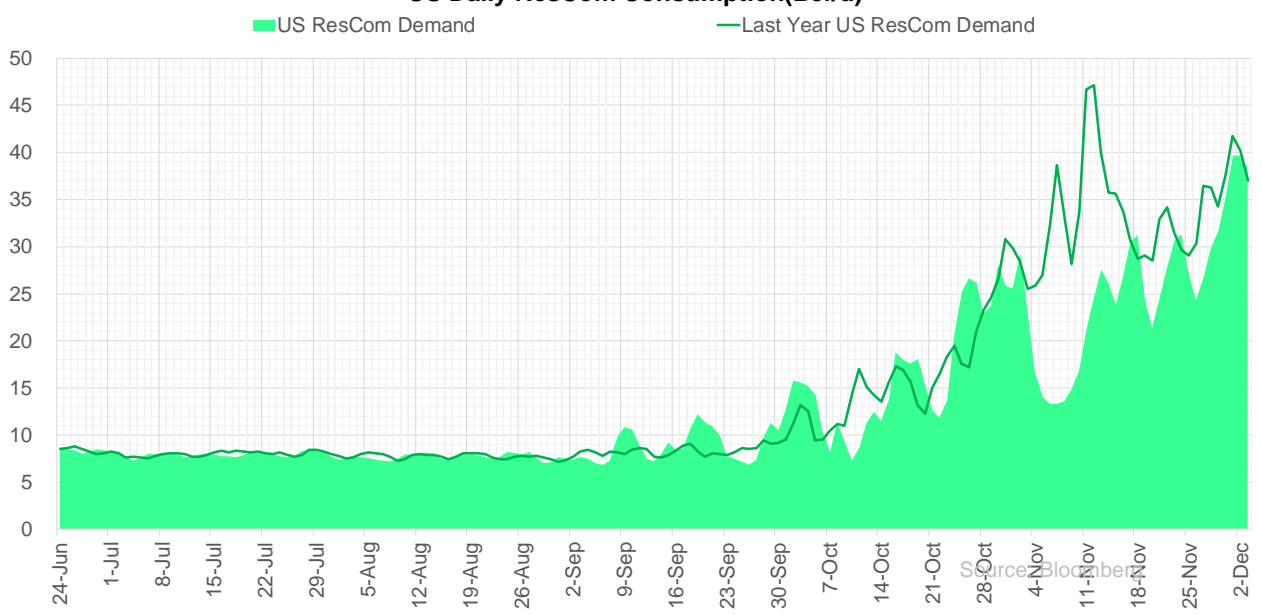
Supply – Demand Trends US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)

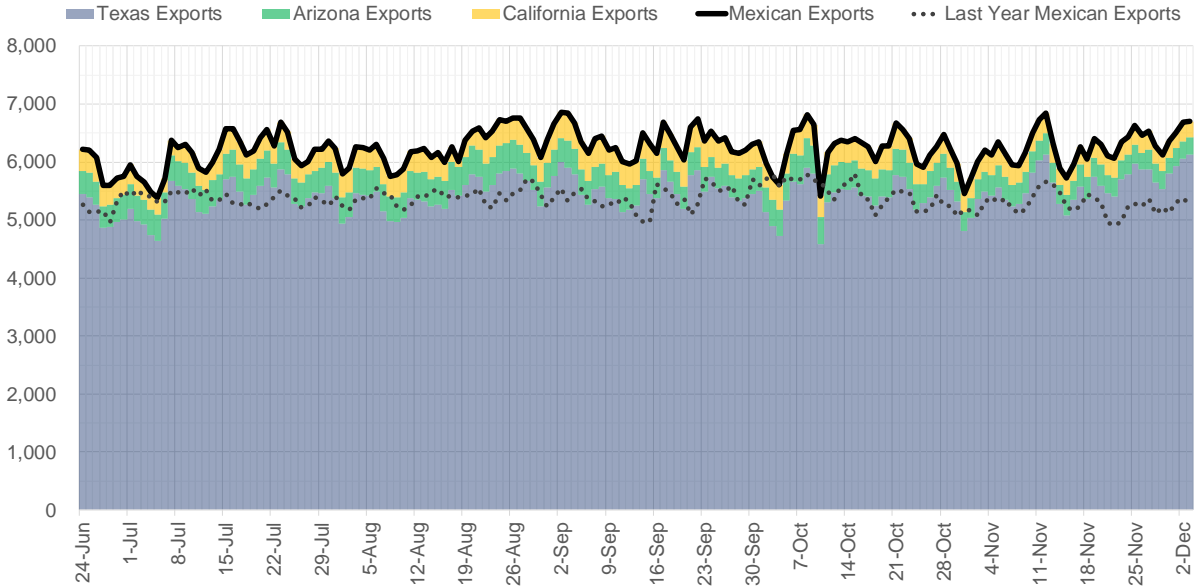


US Daily ResCom Consumption(Bcf/d)

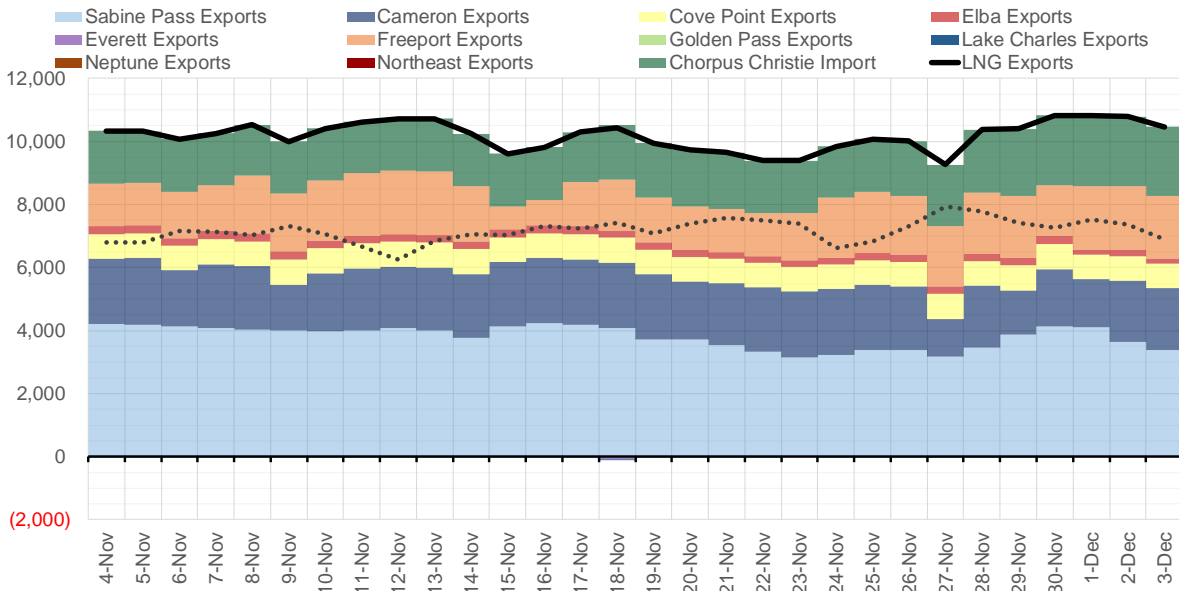


Source: Bloomberg

Mexican Exports (MMcf/d)



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



Source: Bloomberg

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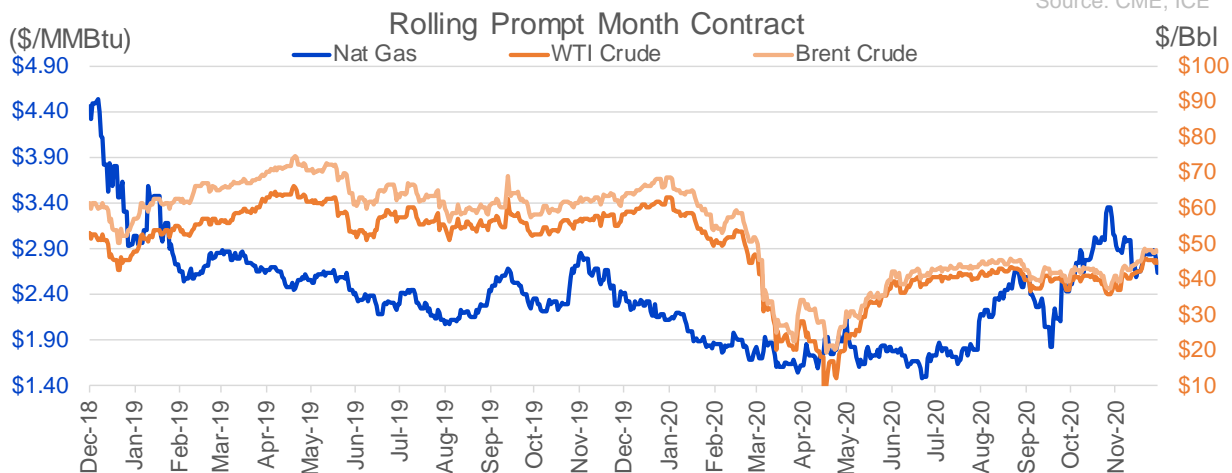
Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
3	2021	C	4.00	7486	1	2021	C	3.50	41621
1	2021	P	2.50	7127	3	2021	P	2.00	40303
1	2021	C	3.50	4506	3	2021	C	4.00	36330
1	2021	C	3.25	4341	1	2021	P	2.50	33032
3	2021	C	4.50	3213	4	2021	C	3.50	29501
3	2021	P	2.25	3178	4	2021	C	4.00	28547
2	2021	P	2.40	3168	3	2021	C	5.00	28173
2	2021	P	2.00	3109	1	2021	C	4.50	27947
1	2021	C	3.00	2990	10	2021	C	4.00	27761
3	2021	C	7.00	2582	3	2021	C	3.25	27606
1	2021	P	2.25	2311	1	2021	C	4.00	27087
1	2021	C	4.00	2269	3	2021	C	6.00	26277
1	2021	C	4.50	2255	1	2021	C	5.00	25919
1	2021	P	2.00	2172	10	2021	C	3.25	24002
1	2021	P	2.40	2031	1	2021	C	3.00	23791
2	2021	C	7.00	2000	3	2021	C	4.50	23693
4	2021	C	3.50	2000	2	2021	P	2.25	23595
1	2021	P	2.30	1770	3	2021	C	3.00	23525
3	2021	C	5.00	1750	3	2021	C	3.50	23165
2	2021	P	2.50	1675	3	2021	C	7.00	23139
1	2021	P	2.75	1600	1	2021	C	3.75	22284
2	2021	C	6.00	1403	3	2021	P	2.50	22232
4	2021	P	2.25	1327	2	2021	C	3.50	21948
1	2021	P	2.60	1132	1	2021	C	6.00	21138
2	2021	P	2.75	912	4	2021	C	3.25	20733
6	2021	P	2.25	850	2	2021	P	2.50	20144
1	2021	C	3.40	831	8	2021	C	4.00	19759
1	2021	C	3.75	827	2	2021	C	4.00	19001
3	2021	P	2.50	764	1	2021	C	3.25	18977
3	2021	C	3.50	760	4	2021	C	5.00	18828
10	2021	C	3.25	730	5	2021	C	3.00	18640
6	2021	P	2.00	650	10	2021	C	5.00	18574
1	2021	P	2.80	633	8	2021	P	2.25	18317
7	2021	C	3.25	630	1	2021	P	2.00	18052
1	2023	C	3.00	625	2	2021	C	5.00	17273
2	2023	C	3.00	625	4	2021	C	2.75	17236
3	2023	C	3.00	625	1	2021	P	2.25	16726
11	2021	P	2.50	600	4	2021	C	3.00	15833
12	2021	P	2.50	600	5	2021	C	3.50	15588
3	2021	P	2.00	588	4	2021	P	2.00	15510
1	2021	C	3.30	571	10	2021	C	3.00	14589
1	2021	C	3.10	558	1	2021	P	2.75	14406
4	2021	P	2.00	550	1	2021	P	3.00	13986
2	2021	C	3.25	538	6	2021	C	4.00	13681
4	2021	P	2.75	510	1	2021	C	7.00	13527
1	2021	C	3.20	506	5	2021	C	3.25	13496
3	2021	C	3.75	506	2	2021	C	4.50	13328
3	2021	C	6.00	500	6	2021	P	2.50	13285
6	2021	C	2.75	500	2	2021	P	2.00	13154
					4	2021	P	2.25	13110

Source: CME, ICE

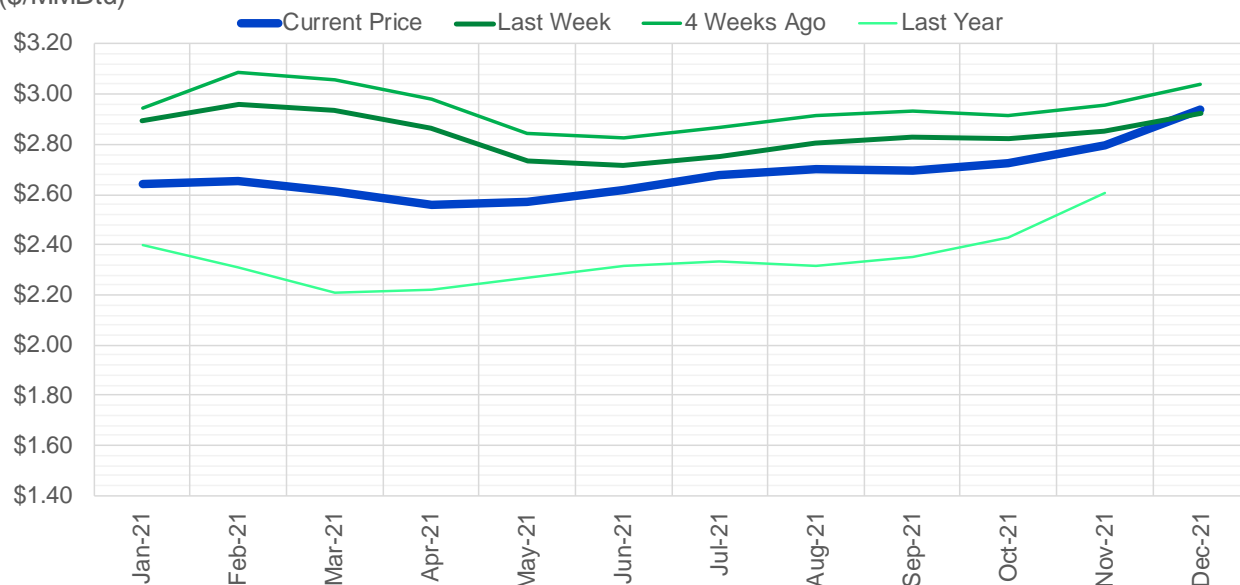
Nat Gas Futures Open Interest CME, and ICE Combined

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	298899	297401	1498	JAN 21	102629	102079	550.5
FEB 21	96590	97322	-732	FEB 21	71158	71429	-271.25
MAR 21	195204	194300	904	MAR 21	93304	93189	115
APR 21	86784	86188	596	APR 21	70262	70339	-77.75
MAY 21	54769	55399	-630	MAY 21	73250	72934	315.75
JUN 21	37810	37321	489	JUN 21	61347	61262	85
JUL 21	30464	29647	817	JUL 21	62880	62762	118.75
AUG 21	26170	26219	-49	AUG 21	64524	64256	268.25
SEP 21	37505	37747	-242	SEP 21	59421	59310	110.75
OCT 21	92144	92138	6	OCT 21	73247	73171	75.75
NOV 21	40572	39617	955	NOV 21	51587	51871	-284.5
DEC 21	33478	33259	219	DEC 21	50464	50334	129.25
JAN 22	34556	33758	798	JAN 22	47816	47604	212.25
FEB 22	23581	22452	1129	FEB 22	38361	38322	39
MAR 22	26896	26700	196	MAR 22	40552	40867	-314.75
APR 22	23771	24317	-546	APR 22	40709	40957	-248
MAY 22	12519	12493	26	MAY 22	32267	32127	139.75
JUN 22	6785	6678	107	JUN 22	31172	31090	82.5
JUL 22	5823	5735	88	JUL 22	32786	32654	132
AUG 22	5033	5035	-2	AUG 22	31353	31218	134.75
SEP 22	4454	4449	5	SEP 22	31131	31049	82
OCT 22	8239	8197	42	OCT 22	35338	35230	108
NOV 22	5873	5868	5	NOV 22	31646	31577	69
DEC 22	6368	6311	57	DEC 22	34064	34034	29.75
JAN 23	4855	4905	-50	JAN 23	15416	15338	77.5
FEB 23	1130	1130	0	FEB 23	14436	14451	-15.5
MAR 23	2562	2562	0	MAR 23	14027	14275	-248.25
APR 23	2202	2368	-166	APR 23	13557	13333	224.5
MAY 23	452	451	1	MAY 23	12374	12388	-13.75
JUN 23	517	517	0	JUN 23	12316	12301	15



(\$/MMBtu)

Nat Gas Term Structure



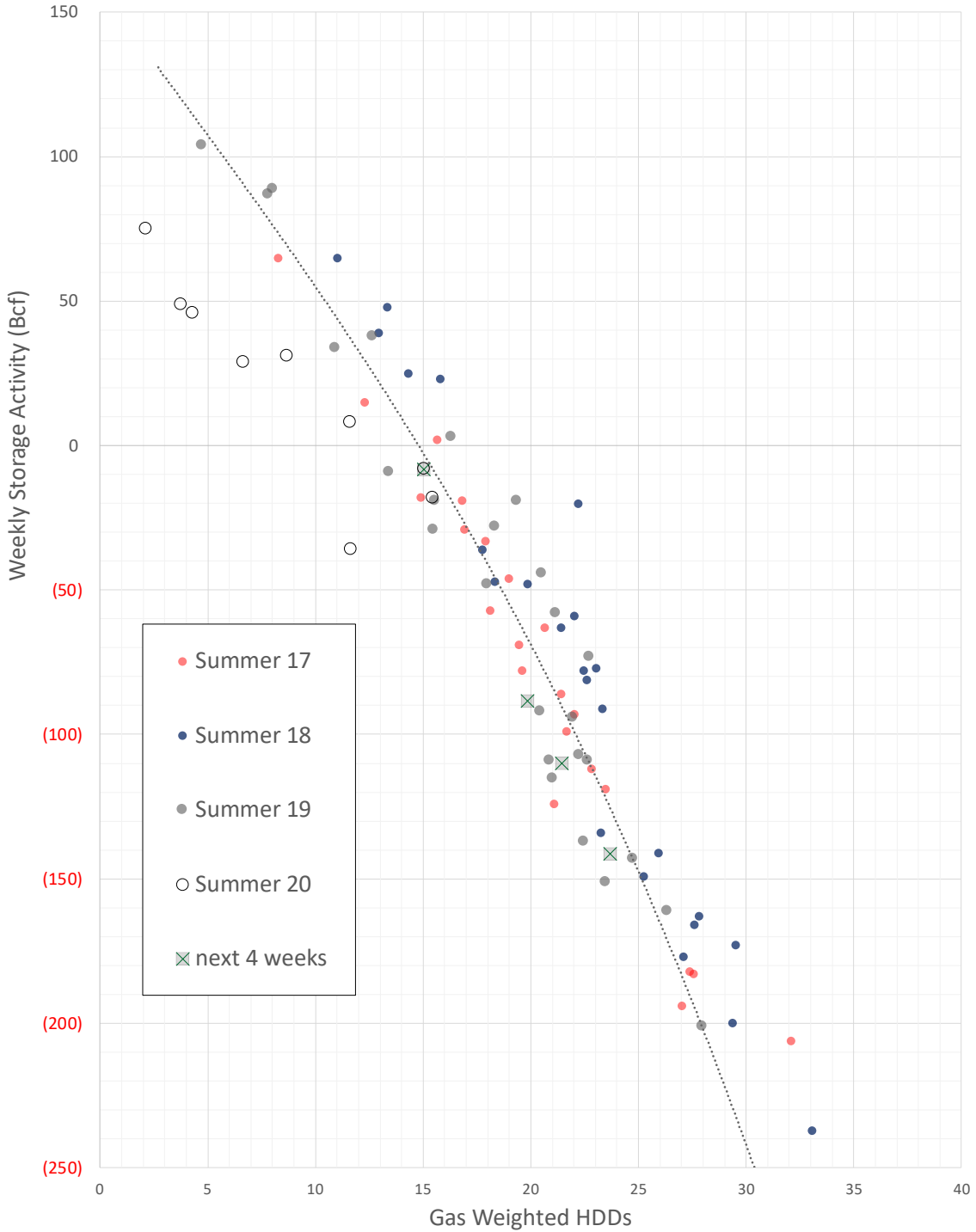
	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
Current Price	\$2.644	\$2.655	\$2.613	\$2.557	\$2.570	\$2.616	\$2.677	\$2.703	\$2.697	\$2.723	\$2.797	\$2.939
Last Week	\$2.896	\$2.961	\$2.936	\$2.865	\$2.734	\$2.718	\$2.754	\$2.807	\$2.827	\$2.822	\$2.851	\$2.924
vs. Last Week	-\$0.252	-\$0.306	-\$0.323	-\$0.308	-\$0.164	-\$0.102	-\$0.077	-\$0.104	-\$0.130	-\$0.099	-\$0.054	\$0.015
4 Weeks Ago	\$2.942	\$3.084	\$3.058	\$2.977	\$2.844	\$2.825	\$2.866	\$2.916	\$2.930	\$2.917	\$2.958	\$3.041
vs. 4 Weeks Ago	-\$0.298	-\$0.429	-\$0.445	-\$0.420	-\$0.274	-\$0.209	-\$0.189	-\$0.213	-\$0.233	-\$0.194	-\$0.161	-\$0.102
Last Year	\$2.427	\$2.398	\$2.312	\$2.211	\$2.219	\$2.267	\$2.318	\$2.332	\$2.318	\$2.349	\$2.426	\$2.605
vs. Last Year	\$0.217	\$0.257	\$0.301	\$0.346	\$0.351	\$0.349	\$0.359	\$0.371	\$0.379	\$0.374	\$0.371	\$0.334

	Units	Cash Settled	Prompt Settle	Cash to Prompt
AGT Citygate	\$/MMBtu	2.36	3.74	1.38
TETCO M3	\$/MMBtu	2.23	2.36	0.13
FGT Zone 3	\$/MMBtu	2.45	2.90	0.45
Zone 6 NY	\$/MMBtu	2.45	2.64	0.19
Chicago Citygate	\$/MMBtu	2.60	1.73	-0.87
Michcon	\$/MMBtu	2.53	2.59	0.06
Columbia TCO Pool	\$/MMBtu	2.26	2.04	-0.22
Ventura	\$/MMBtu	2.57	2.62	0.05
Rockies/Opal	\$/MMBtu	3.14	2.63	-0.51
El Paso Permian Basin	\$/MMBtu	2.61	2.30	-0.31
Socal Citygate	\$/MMBtu	4.87	3.23	-1.64
Malin	\$/MMBtu	3.15	3.26	0.11
Houston Ship Channel	\$/MMBtu	2.77	2.81	0.04
Henry Hub Cash	\$/MMBtu	2.75	2.62	-0.13
AECO Cash	C\$/GJ	1.99	2.24	0.25
Station2 Cash	C\$/GJ	1.90	3.91	2.01
Dawn Cash	C\$/GJ	2.53	2.59	0.06

Source: CME, Bloomberg

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jan21/Apr21	\$/MMBtu	-0.087	▲ 0.140	▲ 0.153	▲ 0.327
NatGas Mar21/Apr21	\$/MMBtu	-0.056	▲ 0.075	▼ -0.189	▼ -0.314
NatGas Oct21/Nov21	\$/MMBtu	0.074	▲ 0.001	▼ -0.009	▲ 0.004
NatGas Apr21/Oct21	\$/MMBtu	0.166	▲ 0.056	▲ 0.040	▼ -0.173
WTI Crude	\$/Bbl	44.82	▼ -0.890	▲ 6.030	▼ -13.610
Brent Crude	\$/Bbl	47.85	▲ 0.050	▲ 6.920	▼ -15.540
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	135.69	▼ -2.970	▲ 18.730	▼ -57.610
Propane, Mt. Bel	cents/Gallon	0.58	▲ 0.033	▲ 0.018	▲ 0.058
Ethane, Mt. Bel	cents/Gallon	0.20	▼ -0.020	▼ -0.032	▲ 0.014
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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