

	Current	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$ 1.74	▼ \$ (0.03)	▲ \$ 0.02

	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 34.12	▲ \$ 0.63	▲ \$ 3.6

	Current	Δ from YD	Δ from 7D Avg
Brent Prompt	\$ 36.52	▲ \$ 0.77	▲ \$ 3.1

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00z GWDD Change

Cooler Change

Warmer Change

ECMWF Ensemble 00z	1-5 Day	6-10 Day	11-15 Day	Total
12 Hr Chg	1.3	6.2	2.2	9.7
24 Hr Chg	-0.2	4.3	-5.5	-1.3

GFS Ensemble 00z	1-5 Day	6-10 Day	11-15 Day	Total
12 Hr Chg	2.2	4.1	0.2	6.5
24 Hr Chg	0.8	1.0	-5.9	-4.1

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	82.7	▲ 0.43	▼ -1.24

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	25.7	▼ -0.14	▼ -0.83

	Current	Δ from YD	Δ from 7D Avg
US ResComm	11.5	▼ -1.73	▲ 0.53

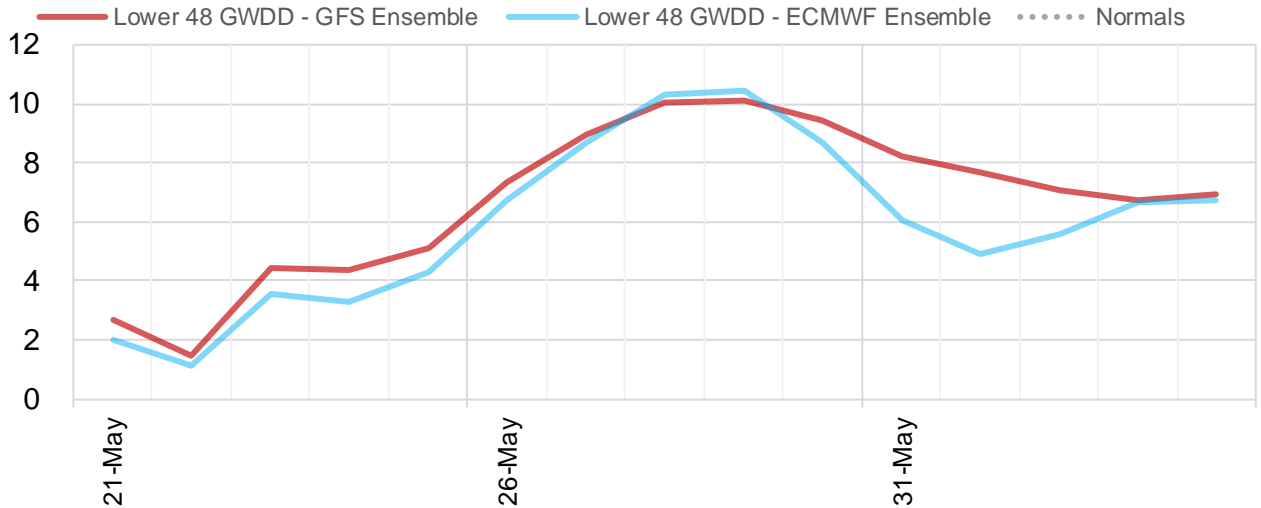
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.2	▼ -0.03	▲ 0.10

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	5.8	▼ -0.13	▼ -0.47

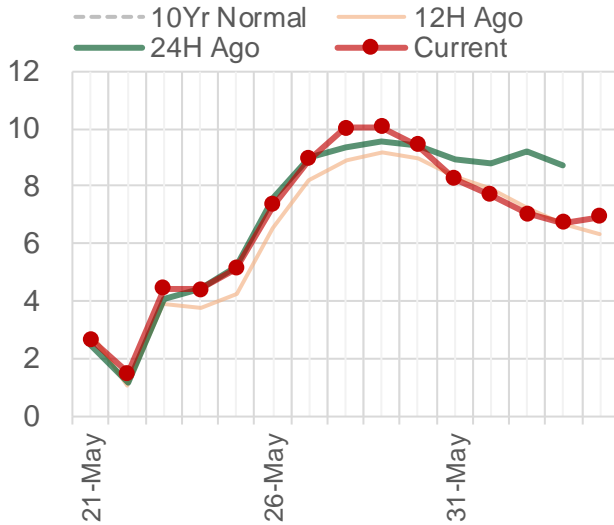
	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	5.6	▲ 0.11	▲ 0.77

Short-term Weather Model Outlooks (00z)

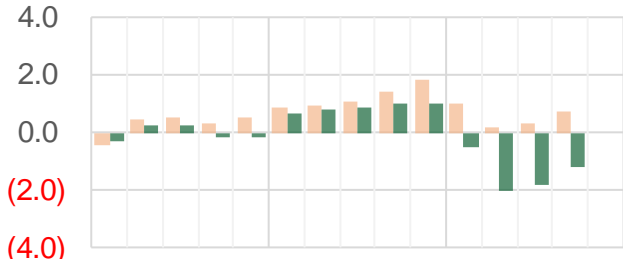
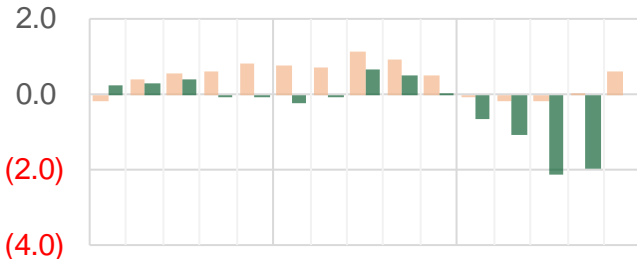
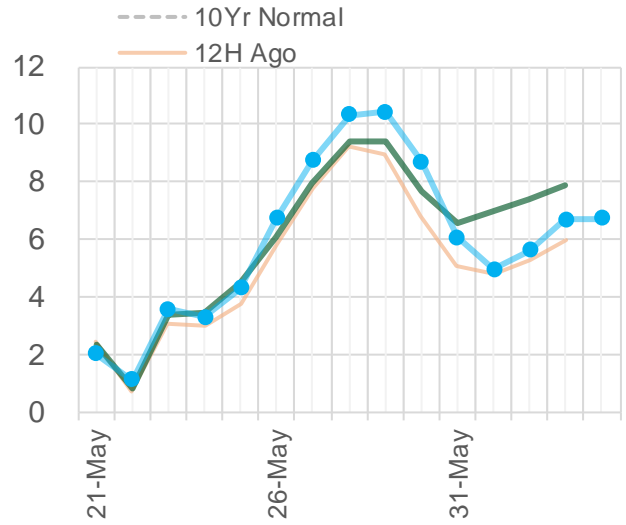
Lower 48 TDD Forecast



Lower 48 GWDD - GFS Ensemble



Lower 48 GWDD - ECMWF Ensemble



Source: WSI, Bloomberg

Lower 48 Component Models

Daily Balances

	15-May	16-May	17-May	18-May	19-May	20-May	21-May	DoD	vs. 7D
Lower 48 Dry Production	85.4	84.2	83.7	83.6	83.1	82.3	82.7	▲ 0.4	▼ -1.0
Canadian Imports	4.2	4.0	4.0	4.0	4.1	4.2	4.2	▼ 0.0	▲ 0.1
L48 Power	27.3	26.7	26.3	26.8	26.0	25.9	25.7	▼ -0.1	▼ -0.8
L48 Residential & Commercial	8.8	9.2	10.2	11.3	12.2	13.3	11.5	▼ -1.7	▲ 0.7
L48 Industrial	18.2	18.6	19.0	19.3	19.5	19.5	19.5	▼ 0.0	▲ 0.5
L48 Lease and Plant Fuel	4.8	4.7	4.7	4.7	4.6	4.6	4.6	▲ 0.0	▼ -0.1
L48 Pipeline Distribution	1.8	1.8	1.8	1.9	1.9	1.9	1.8	▼ -0.1	▼ 0.0
L48 Regional Gas Consumption	60.9	61.0	62.0	64.0	64.2	65.2	63.2	▼ -2.0	▲ 0.3
Net LNG Exports	6.5	6.5	6.4	6.4	6.2	6.0	5.8	▼ -0.1	▼ -0.5
Total Mexican Exports	4.6	4.6	4.6	4.9	5.6	5.5	5.6	▲ 0.1	▲ 0.7
Implied Daily Storage Activity	17.5	16.1	14.6	12.4	11.1	9.8	12.1		
EIA Reported Daily Storage Activity									
Daily Model Error									

EIA Storage Week Balances

	10-Apr	17-Apr	24-Apr	1-May	8-May	15-May	WoW	vs. 4W
Lower 48 Dry Production	91.7	91.5	90.9	89.7	86.6	86.2	▼ -0.4	▼ -3.5
Canadian Imports	3.7	4.4	3.9	3.4	3.6	4.0	▲ 0.4	▲ 0.2
L48 Power	26.5	25.5	24.9	24.5	24.4	24.8	▲ 0.4	▼ 0.0
L48 Residential & Commercial	20.4	26.1	22.7	17.0	14.7	19.5	▲ 4.8	▼ -0.6
L48 Industrial	19.0	18.7	18.3	18.4	18.1	18.2	▲ 0.0	▼ -0.2
L48 Lease and Plant Fuel	5.2	5.2	5.1	5.1	4.8	4.8	▼ 0.0	▼ -0.2
L48 Pipeline Distribution	2.3	2.5	2.3	2.0	1.9	2.2	▲ 0.3	▲ 0.0
L48 Regional Gas Consumption	73.3	78.0	73.3	67.0	64.1	69.5	▲ 5.4	▼ -1.1
Net LNG Exports	8.4	8.6	8.1	7.5	7.7	6.9	▼ -0.8	▼ -1.0
Total Mexican Exports	5.0	4.8	5.0	4.8	4.7	4.7	▼ 0.0	▼ -0.2
Implied Daily Storage Activity	8.8	4.5	8.3	13.8	13.7	9.0	-4.7	
EIA Reported Daily Storage Activity	10.4	6.1	10.0	15.6	14.7			
Daily Model Error	-1.6	-1.6	-1.7	-1.8	-1.0			

Monthly Balances

	2Yr Ago May-18	LY May-19	Jan-20	Feb-20	Mar-20	Apr-20	MTD May-20	MoM	vs. LY
Lower 48 Dry Production	81.2	89.1	92.6	91.9	91.9	91.0	85.4	▼ -5.5	▼ -3.7
Canadian Imports	5.8	4.7	4.8	5.3	4.1	3.9	3.9	▼ 0.0	▼ -0.8
L48 Power	27.3	26.9	30.0	29.9	27.4	25.3	25.2	▼ -0.1	▼ -1.7
L48 Residential & Commercial	10.6	12.8	41.4	40.5	27.9	21.8	15.1	▼ -6.7	▲ 2.3
L48 Industrial	21.7	22.8	24.2	24.7	22.2	18.7	18.5	▼ -0.3	▼ -4.3
L48 Lease and Plant Fuel	4.6	4.9	5.1	5.1	5.2	5.1	4.8	▼ -0.4	▼ -0.2
L48 Pipeline Distribution	1.6	1.8	3.0	3.0	2.4	2.3	2.0	▼ -0.3	▲ 0.2
L48 Regional Gas Consumption	65.8	69.1	103.6	103.2	85.1	73.3	65.5	▼ -7.8	▼ -3.6
Net LNG Exports	3.1	5.6	8.3	8.5	8.5	8.2	7.0	▼ -1.3	▲ 1.4
Total Mexican Exports	4.4	5.1	5.2	5.3	5.6	4.9	4.8	▼ -0.1	▼ -0.3
Implied Daily Storage Activity	13.6	13.9	-19.7	-19.8	-3.3	8.5	12.0		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

Regional S/D Models Storage Projection

Week Ending 15-May

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	8.8	1.7	10.5	79
East	-1.0	2.6	1.6	12
Midwest	2.0	0.9	2.9	22
Mountain	2.6	-1.9	0.7	6
South Central	2.8	0.6	3.4	26
Pacific	2.4	-0.5	1.9	13

*Adjustment Factor is calculated based on historical regional deltas

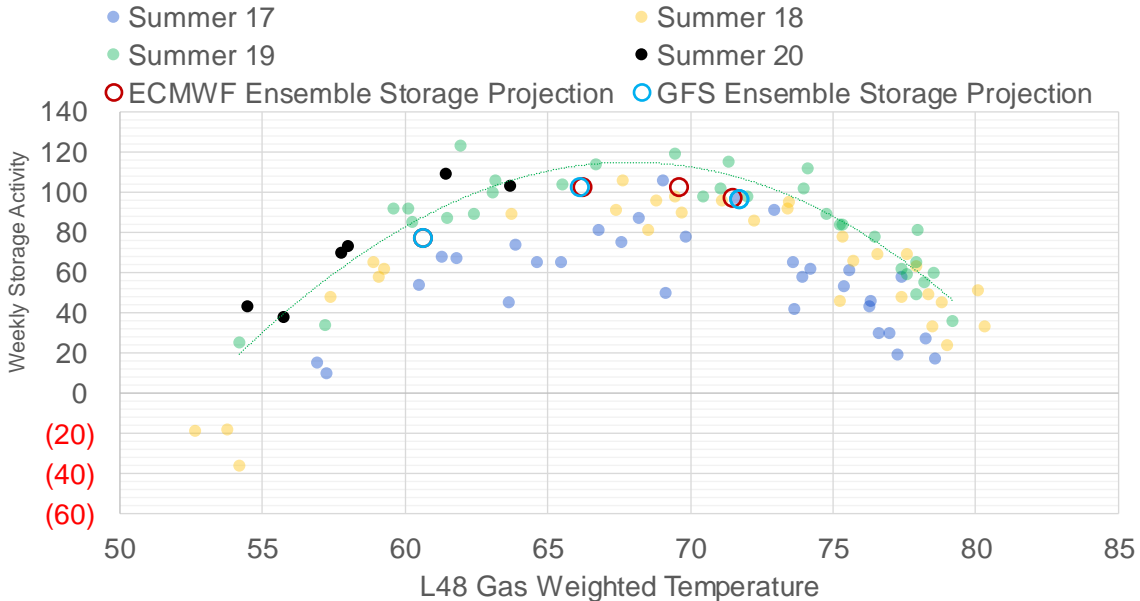
U.S. underground natural gas storage facilities by type (July 2015)



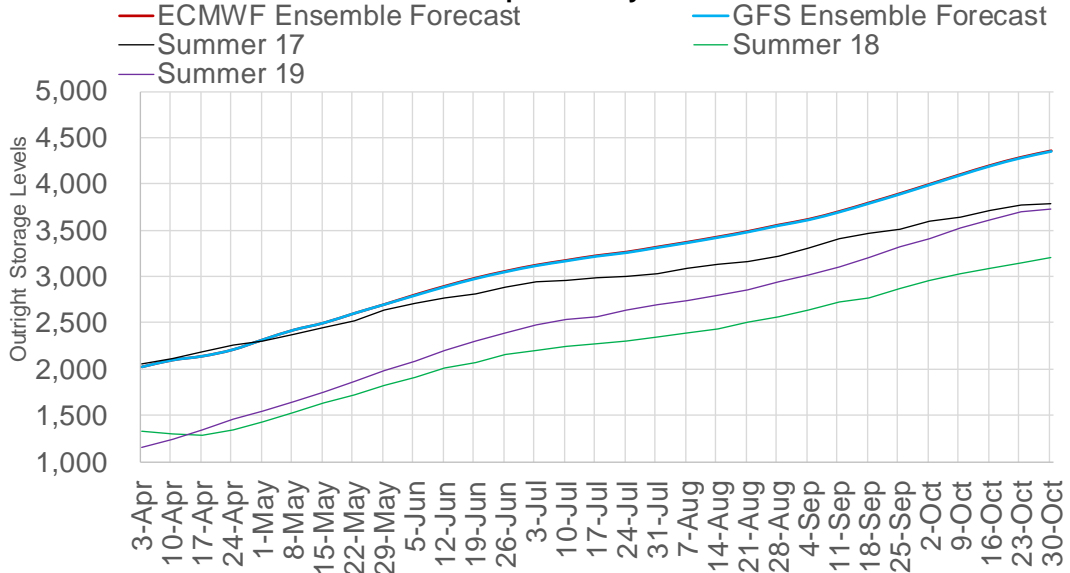
Weather Model Storage Projection

Week Ending	Week Storage Projection
15-May	77
22-May	103
29-May	97
5-Jun	99

Weather Storage Model - Next 4 Week Forecast

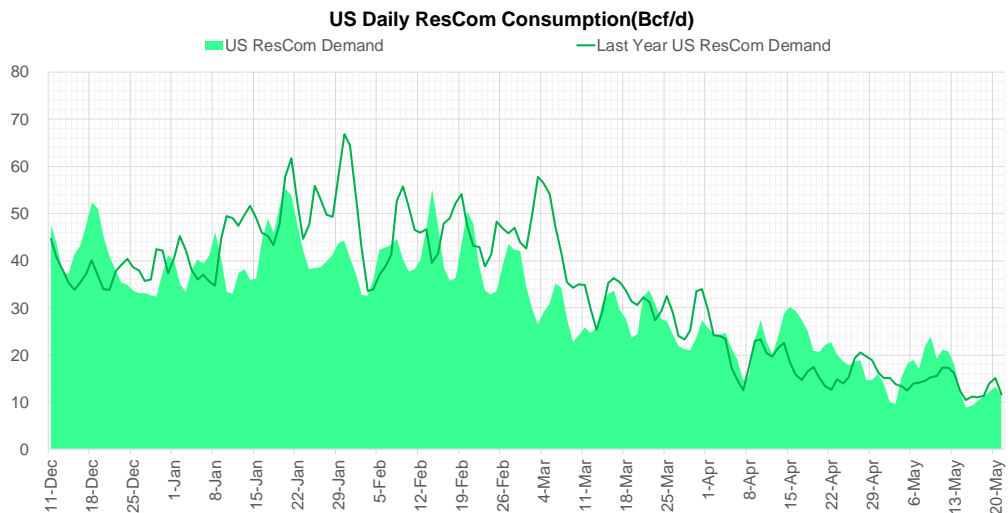
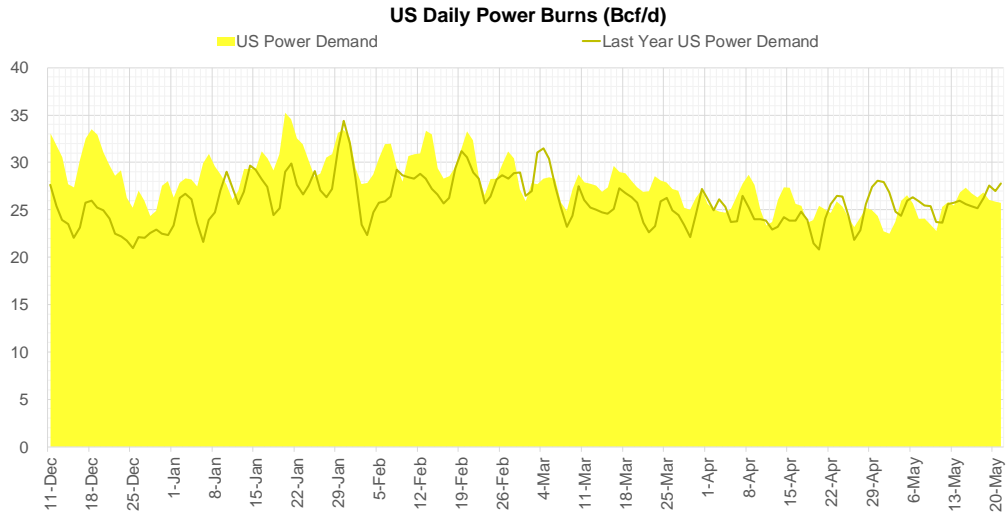
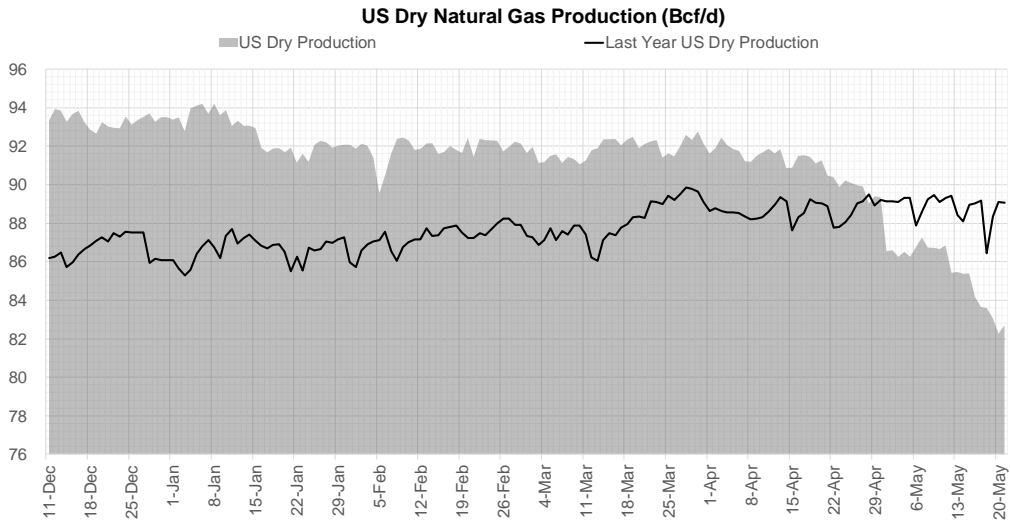


Weather Based End of Winter Projection (Bcf) 10Y normals past 15 day forecast window



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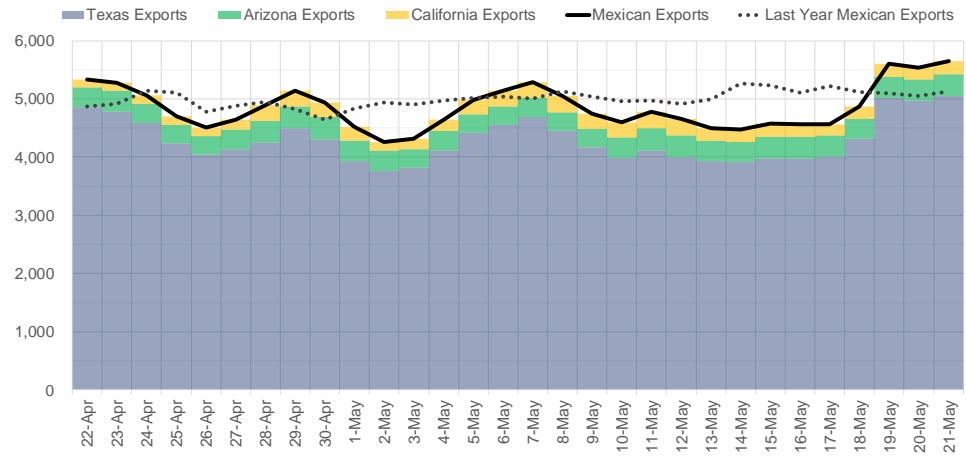
Supply – Demand Trends



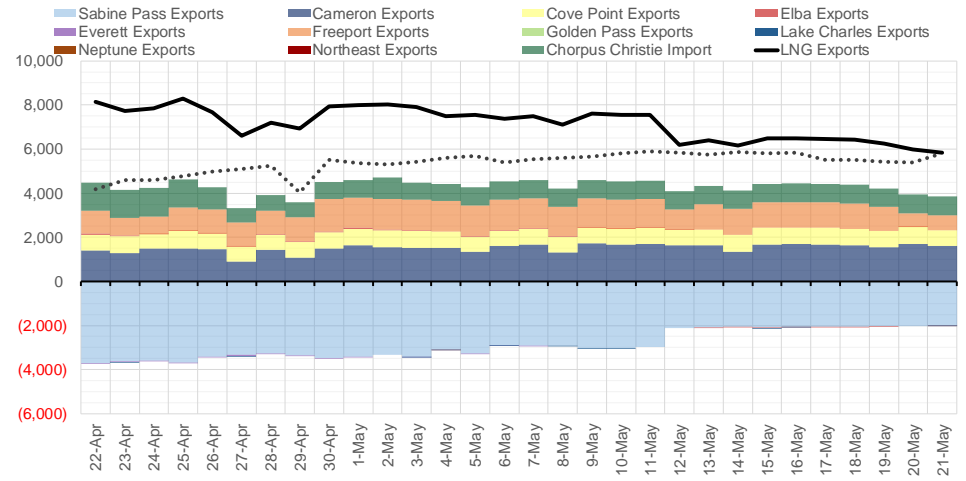
Source: Bloomberg

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Mexican Exports - Last 30 days (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

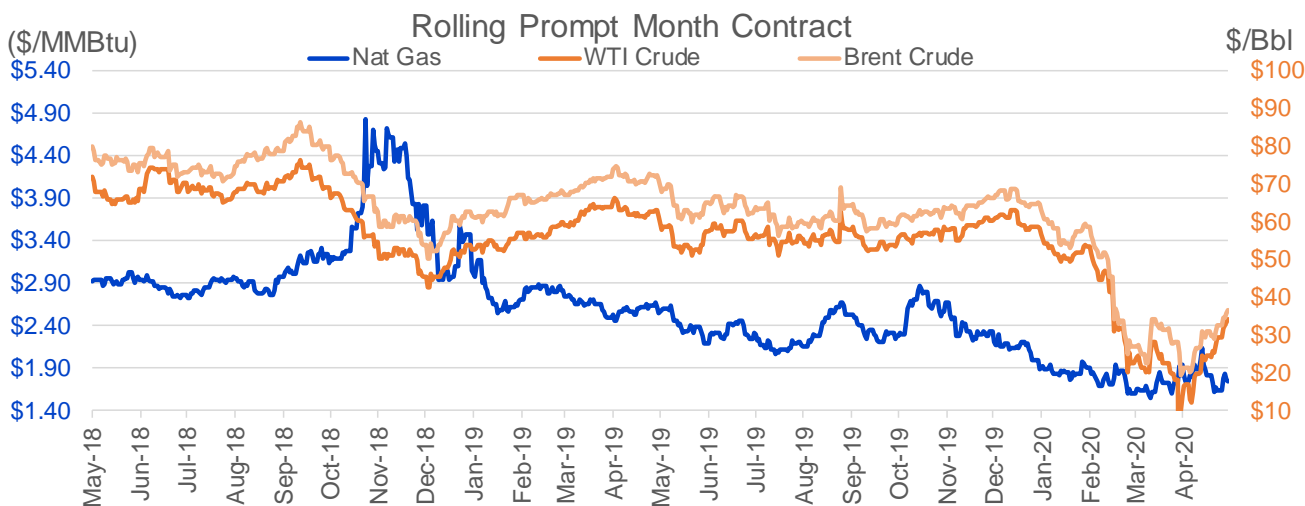
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
6	2020	C	2.00	8882	6	2020	P	1.25	39875
8	2020	C	2.50	8730	10	2020	C	3.00	38923
7	2020	P	1.50	8501	6	2020	C	2.50	37255
6	2020	C	1.90	5744	6	2020	C	2.25	34789
9	2020	C	2.50	5552	6	2020	P	1.50	34540
8	2020	P	1.50	5146	10	2020	P	1.50	33901
6	2020	C	1.85	5122	3	2021	P	2.00	33093
9	2020	P	1.20	4040	7	2020	P	1.50	32457
8	2020	P	1.20	4035	10	2020	C	2.75	31084
10	2020	P	1.20	4000	6	2020	C	2.00	30887
9	2020	P	1.75	3732	10	2020	P	1.60	29769
7	2020	P	1.75	3731	6	2020	P	1.75	28880
10	2020	P	1.50	3565	10	2020	P	2.00	28523
6	2020	P	1.60	3552	9	2020	C	2.50	26476
7	2020	C	2.00	3547	7	2020	C	3.00	26129
7	2020	P	1.60	3525	6	2020	P	2.00	25418
7	2020	C	2.75	3227	7	2020	P	1.75	25185
8	2020	P	1.75	2911	7	2020	C	2.50	23119
6	2020	P	1.75	2783	10	2020	C	2.50	22813
6	2020	P	1.40	2719	9	2020	P	1.50	21987
7	2020	P	1.85	2711	9	2020	C	2.75	21468
7	2020	C	2.25	2543	6	2020	C	3.00	21358
6	2020	P	1.65	2417	6	2020	P	1.60	20894
6	2020	P	1.80	2286	7	2020	P	2.00	20739
8	2020	C	2.25	2165	8	2020	P	1.50	19901
8	2020	P	1.30	2026	10	2020	P	1.25	19681
10	2020	P	1.10	2010	10	2020	P	1.75	19658
8	2020	P	1.10	2000	1	2021	C	3.00	19622
9	2020	P	1.10	2000	8	2020	C	3.00	19006
9	2020	P	1.30	2000	6	2020	P	1.70	18974
10	2020	P	1.25	2000	1	2021	C	3.50	18867
10	2020	P	1.30	2000	7	2020	C	2.30	18782
1	2021	C	5.00	2000	7	2020	C	2.75	18708
9	2020	P	1.50	1978	7	2020	C	2.25	17860
6	2020	P	1.50	1792	11	2020	C	4.00	17814
6	2020	C	1.95	1787	10	2020	P	2.10	17643
6	2020	P	1.85	1761	10	2020	C	3.25	17417
10	2020	C	3.00	1760	9	2020	C	3.00	17320
7	2020	C	2.50	1638	6	2020	P	1.40	16798
7	2020	C	2.70	1520	6	2020	P	1.00	16758
11	2021	C	3.25	1500	10	2020	C	2.25	16495
11	2021	P	2.00	1500	4	2021	C	3.00	16469
11	2021	P	2.50	1500	7	2020	P	1.25	15787
7	2020	C	2.10	1489	8	2020	C	2.75	15014
6	2020	C	1.80	1443	6	2020	C	2.75	14552
9	2020	C	2.25	1443	9	2020	C	2.25	14454
7	2020	P	1.25	1412	9	2020	P	2.00	14327
8	2020	C	2.00	1410	10	2020	P	1.00	14249
4	2021	P	2.00	1350	3	2021	C	3.50	14243
					3	2021	C	3	14148

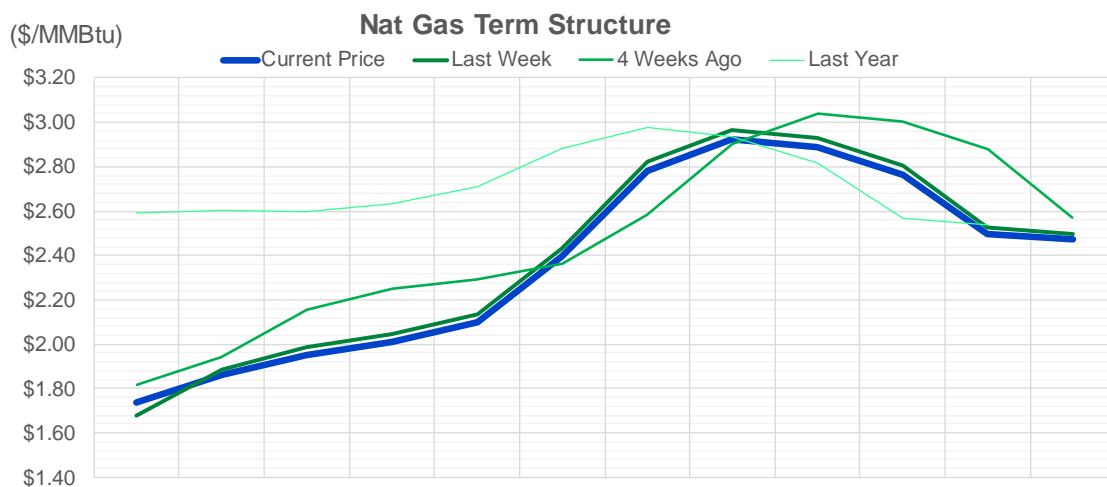
Source: CME, Nasdaq, ICE

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)				NASDAQ Henry Hub Futures (10,000 MMBtu)			
	Current	Prior	Daily Change		Current	Prior	Daily Change		Current	Prior	Daily Change
JUN 20	35829	56426	-20597	JUN 20	68997	70574	-1577	JUN 20	81	81	0
JUL 20	337878	335352	2526	JUL 20	82324	82202	121.25	JUL 20	80	80	0
AUG 20	70263	68507	1756	AUG 20	67574	67409	165.5	AUG 20	280	280	0
SEP 20	141055	139588	1467	SEP 20	65316	65686	-370	SEP 20	81	81	0
OCT 20	101555	101854	-299	OCT 20	74282	74839	-556.75	OCT 20	760	760	0
NOV 20	44350	43663	687	NOV 20	58496	57061	1434.5	NOV 20	631	631	0
DEC 20	59441	63282	-3841	DEC 20	57130	56950	180.25	DEC 20	132	132	0
JAN 21	92460	92595	-135	JAN 21	69534	69803	-269	JAN 21	151	151	0
FEB 21	34307	33726	581	FEB 21	43121	43118	3.25	FEB 21	23	23	0
MAR 21	60745	60087	658	MAR 21	58265	58617	-351.5	MAR 21	1101	1101	0
APR 21	69591	70534	-943	APR 21	51753	52070	-317.5	APR 21	775	775	0
MAY 21	26559	26705	-146	MAY 21	44581	44424	157.5	MAY 21	41	41	0
JUN 21	16995	17051	-56	JUN 21	40713	40627	85.75	JUN 21	40	40	0
JUL 21	11981	12132	-151	JUL 21	42480	42363	116.5	JUL 21	41	41	0
AUG 21	10238	9867	371	AUG 21	43022	42999	23	AUG 21	41	41	0
SEP 21	11549	12361	-812	SEP 21	40412	40214	198	SEP 21	40	40	0
OCT 21	23875	23546	329	OCT 21	51870	51867	3	OCT 21	326	326	0
NOV 21	16125	16375	-250	NOV 21	35434	35335	98.75	NOV 21	405	405	0
DEC 21	13120	13067	53	DEC 21	36199	35986	213	DEC 21	5	5	0
JAN 22	11596	11389	207	JAN 22	27437	27277	160	JAN 22	36	36	0
FEB 22	6067	6032	35	FEB 22	24278	24128	150.5	FEB 22	33	33	0
MAR 22	13477	13284	193	MAR 22	26382	26452	-69.5	MAR 22	900	900	0
APR 22	10965	10902	63	APR 22	22535	22485	50	APR 22	1035	1035	0
MAY 22	4504	4362	142	MAY 22	20838	20695	142.5	MAY 22	36	36	0
JUN 22	2051	2050	1	JUN 22	20269	20209	60.5	JUN 22	35	35	0
JUL 22	1801	1801	0	JUL 22	21072	21033	39	JUL 22	36	36	0
AUG 22	1255	1255	0	AUG 22	20299	20236	62.25	AUG 22	36	36	0
SEP 22	1320	1320	0	SEP 22	20200	20140	60.5	SEP 22	35	35	0
OCT 22	1890	1890	0	OCT 22	22779	22623	156.25	OCT 22	479	479	0
NOV 22	1357	1340	17	NOV 22	18487	18434	53	NOV 22	35	35	0

Source: CME, Nasdaq, ICE





	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21
Current Price	\$1.739	\$1.864	\$1.949	\$2.011	\$2.099	\$2.393	\$2.782	\$2.925	\$2.888	\$2.764	\$2.499	\$2.474
Last Week	\$1.681	\$1.884	\$1.985	\$2.043	\$2.137	\$2.431	\$2.823	\$2.967	\$2.927	\$2.804	\$2.526	\$2.497
vs. Last Week	\$0.058	-\$0.020	-\$0.036	-\$0.032	-\$0.038	-\$0.038	-\$0.041	-\$0.042	-\$0.039	-\$0.040	-\$0.027	-\$0.023
4 Weeks Ago	\$1.815	\$1.942	\$2.155	\$2.252	\$2.292	\$2.363	\$2.585	\$2.900	\$3.039	\$3.004	\$2.877	\$2.573
vs. 4 Weeks Ago	-\$0.076	-\$0.078	-\$0.206	-\$0.241	-\$0.193	\$0.030	\$0.197	\$0.025	-\$0.151	-\$0.240	-\$0.378	-\$0.099
Last Year	\$2.578	\$2.592	\$2.604	\$2.600	\$2.631	\$2.710	\$2.882	\$2.975	\$2.935	\$2.818	\$2.570	\$2.537
vs. Last Year	-\$0.839	-\$0.728	-\$0.655	-\$0.589	-\$0.532	-\$0.317	-\$0.100	-\$0.050	-\$0.047	-\$0.054	-\$0.071	-\$0.063

	Units	Cash Settled	Prompt Settle	Cash to Prompt
AGT Citygate	\$/MMBtu	1.75	1.43	-0.32
TETCO M3	\$/MMBtu	1.52	1.28	-0.24
FGT Zone 3	\$/MMBtu	1.49	1.71	0.22
Zone 6 NY	\$/MMBtu	1.49	1.36	-0.13
Chicago Citygate	\$/MMBtu	1.76	1.63	-0.13
Michcon	\$/MMBtu	1.72	1.63	-0.09
Columbia TCO Pool	\$/MMBtu	1.67	1.42	-0.25
Ventura	\$/MMBtu	1.65	1.60	-0.05
Rockies/Opal	\$/MMBtu	1.60	1.48	-0.12
El Paso Permian Basin	\$/MMBtu	1.64	1.41	-0.23
Socal Citygate	\$/MMBtu	1.93	1.69	-0.24
Malin	\$/MMBtu	1.68	1.56	-0.12
Houston Ship Channel	\$/MMBtu	1.82	1.66	-0.16
Henry Hub Cash	\$/MMBtu	1.85	1.59	-0.26
AECO Cash	C\$/GJ	1.53	1.40	-0.13
Station2 Cash	C\$/GJ	1.53	1.50	-0.03
Dawn Cash	C\$/GJ	1.73	1.65	-0.08

Source: CME, Bloomberg

	Units	Current Price	vs. Last Week	vs. 4 Weeks		vs. Last Year
				Ago		
NatGas Jan/Apr	\$/MMBtu	-0.52	▲ 0.000	▲ 0.000	▼ -0.105	
NatGas Mar/Apr	\$/MMBtu	0.187	▲ 0.000	▲ 0.000	▼ -0.068	
NatGas Oct/Nov	\$/MMBtu	0.27	▼ -0.002	▲ 0.037	▲ 0.215	
NatGas Oct/Jan	\$/MMBtu	0.77	▲ 0.011	▲ 0.083	▲ 0.471	
WTI Crude	\$/Bbl	32.50	▲ 6.720	▲ 22.490	▼ -30.490	
Brent Crude	\$/Bbl	34.65	▲ 4.670	▲ 15.320	▼ -37.530	
Fuel Oil, NY Harbour 1%	\$/Bbl	98.03	▲ 0.000	▲ 0.000	▲ 0.000	
Heating Oil	cents/Gallon	97.36	▲ 13.520	▲ 24.670	▼ -110.580	
Propane, Mt. Bel	cents/Gallon	0.41	▲ 0.025	▲ 0.091	▼ -0.183	
Ethane, Mt. Bel	cents/Gallon	0.23	▲ 0.024	▲ 0.102	▲ 0.000	
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▼ -0.050	
Coal, ILB	\$/MTon	31.05	▲ 0.000	▲ 0.000	▼ -10.000	