

	Current	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$ 1.88	▲ \$ 0.16	▲ \$ 0.14

	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 32.69	▼ \$ (0.12)	▼ \$ (0.8)

	Current	Δ from YD	Δ from 7D Avg
Brent Prompt	\$ 34.85	▲ \$ 0.11	▼ \$ (0.6)

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- [Nat Gas Futures Open Interest](#)
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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	1.7	-2.1	-3.3	-3.7
24 Hr Chg	1.5	-4.9	-3.4	-6.9

GFS Ensemble 00z	1-5 Day	6-10 Day	11-15 Day	Total
12 Hr Chg	1.0	-1.2	10.1	9.9
24 Hr Chg	0.1	-0.4	2.9	2.6

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	83.2	▼ -0.28	▼ -0.16

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	32.8	▲ 0.54	▲ 3.96

	Current	Δ from YD	Δ from 7D Avg
US ResComm	8.0	▼ -0.05	▼ -0.84

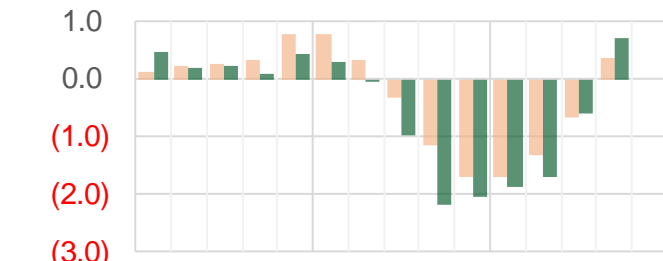
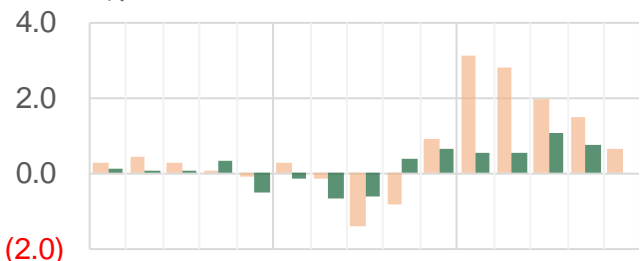
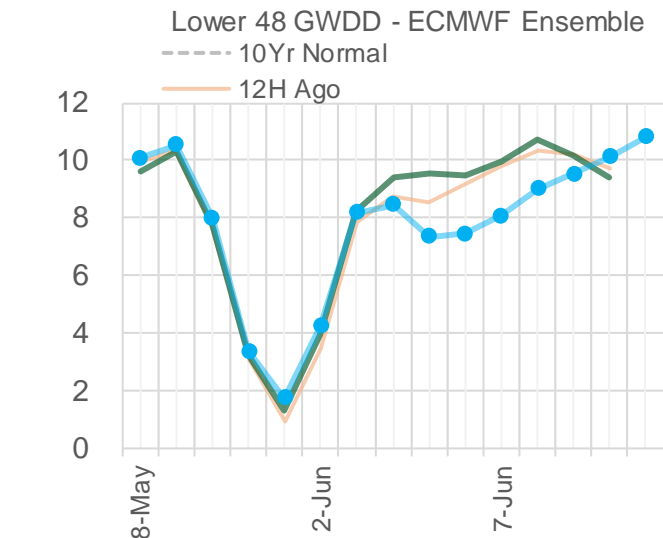
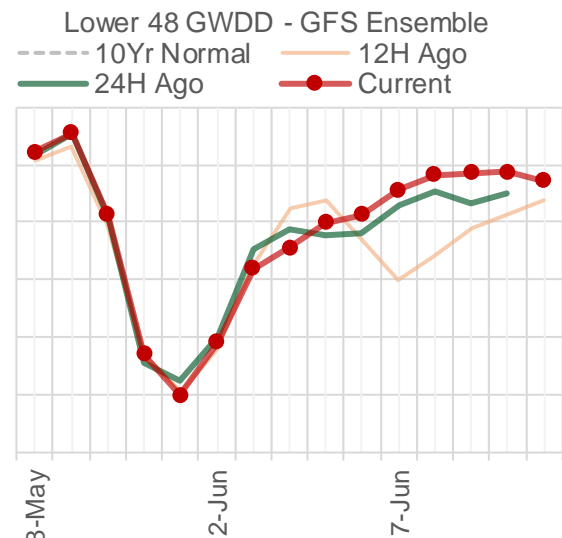
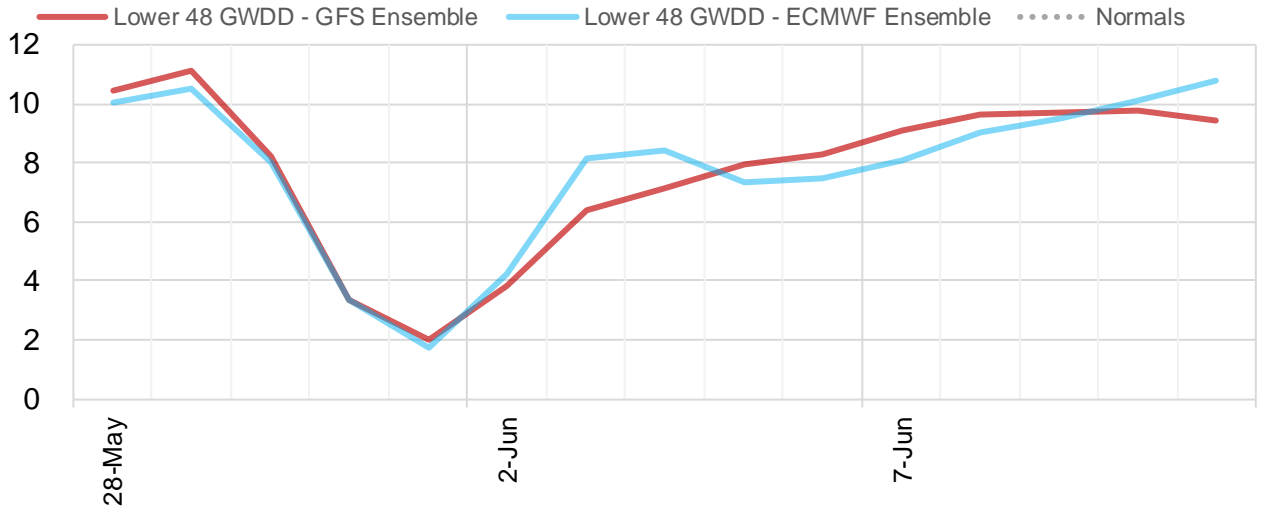
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.8	▼ -0.04	▲ 0.77

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	6.5	▲ 0.05	▲ 0.46

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	5.0	▼ -0.01	▼ -0.09

Short-term Weather Model Outlooks (00z)

Lower 48 TDD Forecast



Source: WSI, Bloomberg

The risk of trading futures and options and other derivatives involves a substantial risk of loss and is not suitable for all persons. Each person must consider whether a particular trade, combination of trades, or strategy is suitable for that person's financial means and objectives. Past results are not necessarily indicative of future results. This communication may contain links to third party websites which are not under the control of and are not maintained by ION Energy Group, and ION Energy Group is not responsible for their content.

Lower 48 Component Models

Daily Balances

	22-May	23-May	24-May	25-May	26-May	27-May	28-May	DoD	vs. 7D
Lower 48 Dry Production	82.8	83.4	83.6	83.9	83.8	83.5	83.2	▼ -0.3	▼ -0.3
Canadian Imports	3.8	3.7	3.7	3.8	4.1	4.8	4.8	▼ 0.0	▲ 0.8
L48 Power	27.7	27.3	27.2	28.6	32.4	32.3	32.8	▲ 0.5	▲ 3.6
L48 Residential & Commercial	8.8	8.4	8.7	8.4	8.0	8.1	8.0	▼ -0.1	▼ -0.4
L48 Industrial	18.6	18.5	18.7	18.9	19.1	19.3	19.4	▲ 0.1	▲ 0.6
L48 Lease and Plant Fuel	4.6	4.7	4.7	4.7	4.7	4.7	4.7	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	1.8	1.8	1.8	1.8	2.0	2.0	2.0	▲ 0.0	▲ 0.2
L48 Regional Gas Consumption	61.5	60.6	61.1	62.5	66.2	66.3	66.9	▲ 0.6	▲ 3.9
Net LNG Exports	5.7	5.8	5.6	6.3	6.4	6.4	6.5	▲ 0.0	▲ 0.4
Total Mexican Exports	5.4	4.9	4.8	4.9	4.8	5.0	5.0	▼ 0.0	▲ 0.0
Implied Daily Storage Activity	14.0	15.8	15.8	14.0	10.5	10.7	9.7		
EIA Reported Daily Storage Activity									
Daily Model Error									

EIA Storage Week Balances

4.0

	17-Apr	24-Apr	1-May	8-May	15-May	22-May	WoW	vs. 4W
Lower 48 Dry Production	91.4	90.8	89.7	86.5	86.1	83.5	▼ -2.6	▼ -4.8
Canadian Imports	4.4	3.9	3.4	3.6	4.0	4.1	▲ 0.1	▲ 0.4
L48 Power	25.6	24.9	24.5	24.5	24.8	26.5	▲ 1.7	▲ 1.8
L48 Residential & Commercial	26.1	22.7	17.0	14.7	19.5	10.9	▼ -8.6	▼ -7.6
L48 Industrial	18.7	18.3	18.1	18.3	16.9	18.3	▲ 1.4	▲ 0.4
L48 Lease and Plant Fuel	5.2	5.1	5.1	4.8	4.8	4.7	▼ -0.1	▼ -0.3
L48 Pipeline Distribution	2.5	2.3	2.0	1.9	2.2	1.9	▼ -0.3	▼ -0.3
L48 Regional Gas Consumption	78.0	73.4	66.7	64.3	68.3	62.3	▼ -6.1	▼ -5.9
Net LNG Exports	8.6	8.1	7.5	7.7	6.9	6.3	▼ -0.7	▼ -1.3
Total Mexican Exports	4.8	5.0	4.8	4.7	4.7	5.2	▲ 0.5	▲ 0.4
Implied Daily Storage Activity	4.4	8.2	14.0	13.4	10.1	13.9	3.7	
EIA Reported Daily Storage Activity	6.1	10.0	15.6	14.7	11.6			
Daily Model Error	-1.7	-1.8	-1.5	-1.3	-1.4			

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	91.8	91.0	84.9	▼ -6.1	▼ -4.2
Canadian Imports	5.8	4.7	4.8	5.3	4.1	3.9	3.9	▲ 0.1	▼ -0.7
L48 Power	27.3	26.9	30.0	29.9	27.4	25.4	26.4	▲ 1.0	▼ -0.5
L48 Residential & Commercial	10.6	12.8	41.4	40.5	27.9	21.8	13.4	▼ -8.4	▲ 0.6
L48 Industrial	21.7	22.2	24.4	24.7	22.0	18.6	18.1	▼ -0.5	▼ -4.1
L48 Lease and Plant Fuel	4.6	4.9	5.1	5.1	5.2	5.1	4.7	▼ -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	68.6	103.9	103.2	84.9	73.2	64.6	▼ -8.6	▼ -3.9
Net LNG Exports	3.1	5.6	8.3	8.5	8.5	8.2	6.7	▼ -1.5	▲ 1.1
Total Mexican Exports	4.4	5.1	5.2	5.3	5.6	4.9	4.9	▼ 0.0	▼ -0.2
Implied Daily Storage Activity	13.6	14.5	-20.0	-19.8	-3.1	8.5	12.6		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

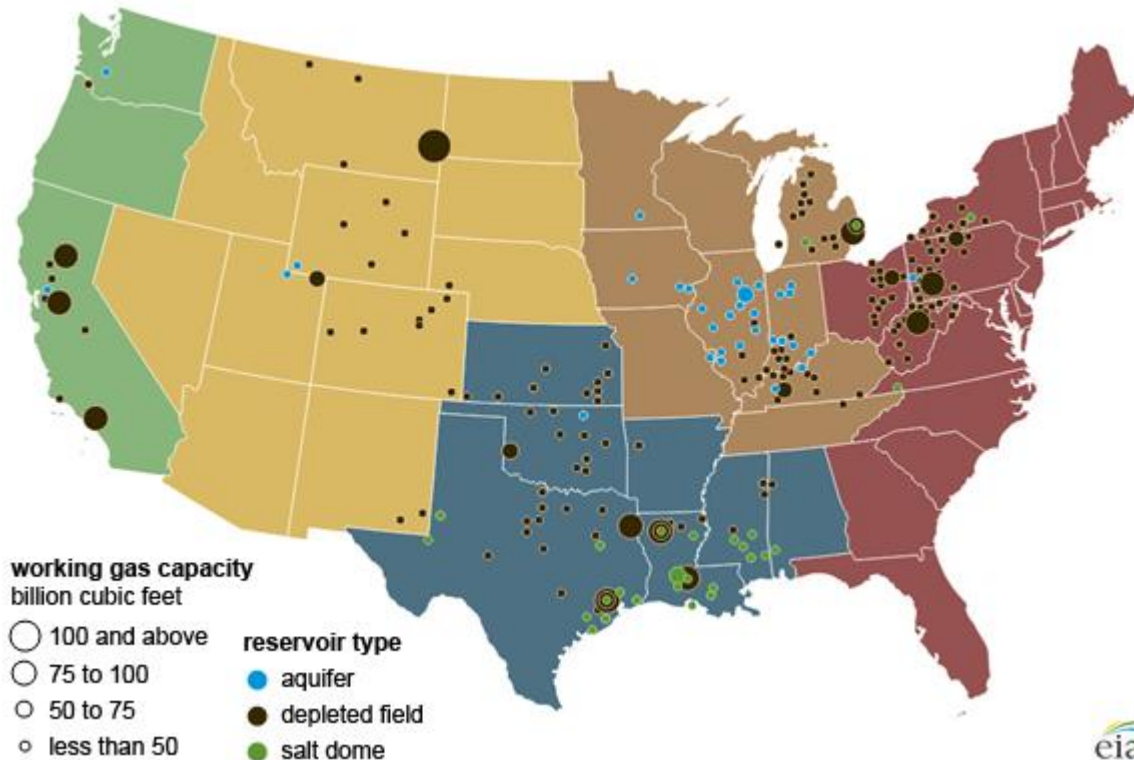
Regional S/D Models Storage Projection

Week Ending 22-May

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	13.6	1.7	15.3	107
East	2.3	2.9	5.2	37
Midwest	3.7	0.8	4.5	32
Mountain	3.0	-1.7	1.3	9
South Central	2.3	0.2	2.6	18
Pacific	2.3	-0.6	1.7	12

*Adjustment Factor is calculated based on historical regional deltas

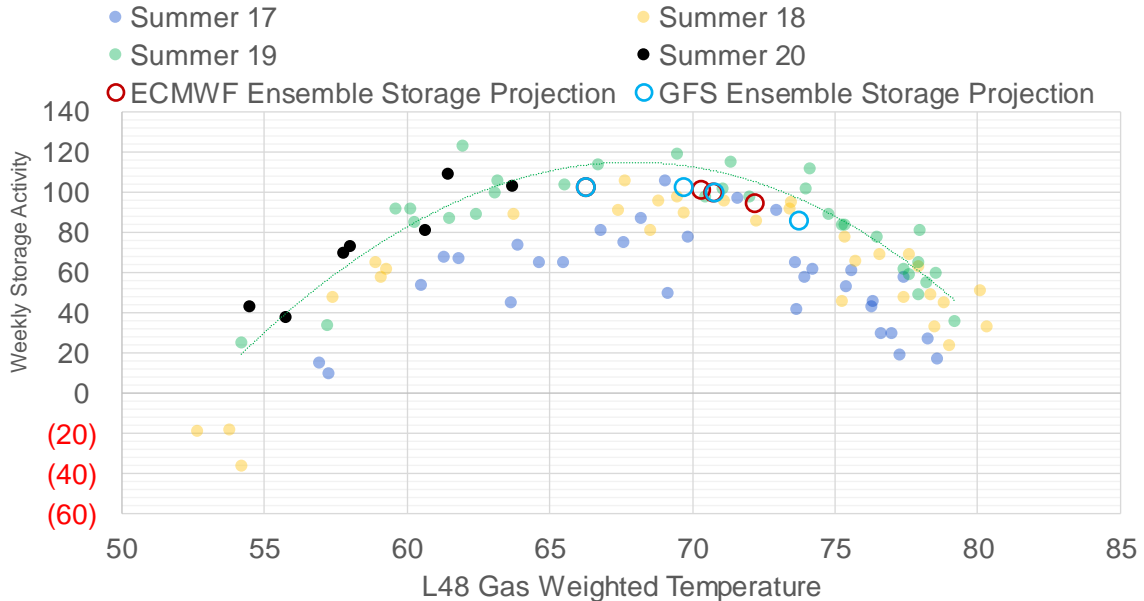
U.S. underground natural gas storage facilities by type (July 2015)



Weather Model Storage Projection

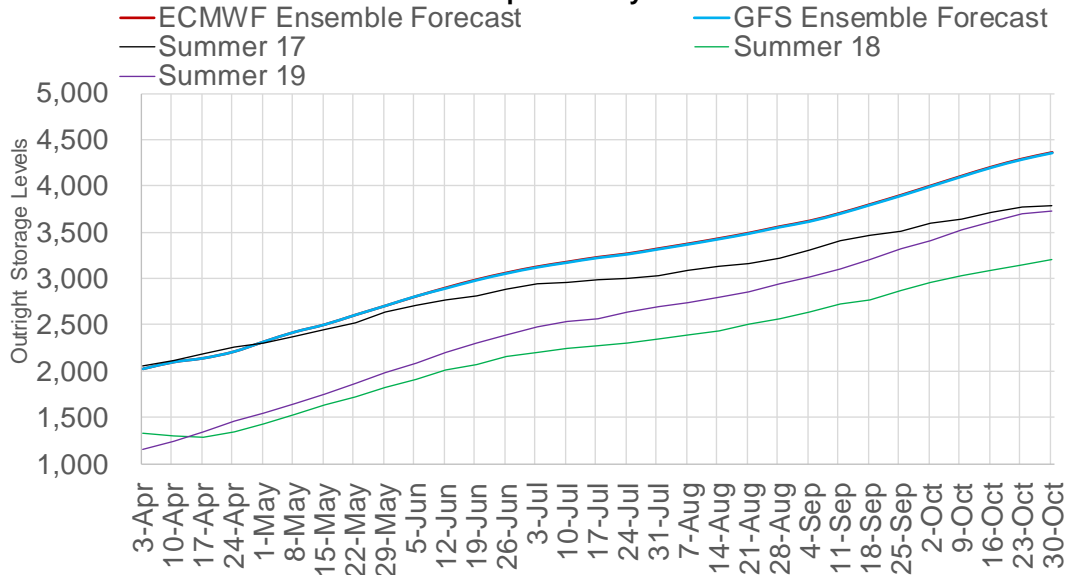
Week Ending	Week Storage Projection
22-May	103
29-May	100
5-Jun	102
12-Jun	90

Weather Storage Model - Next 4 Week Forecast



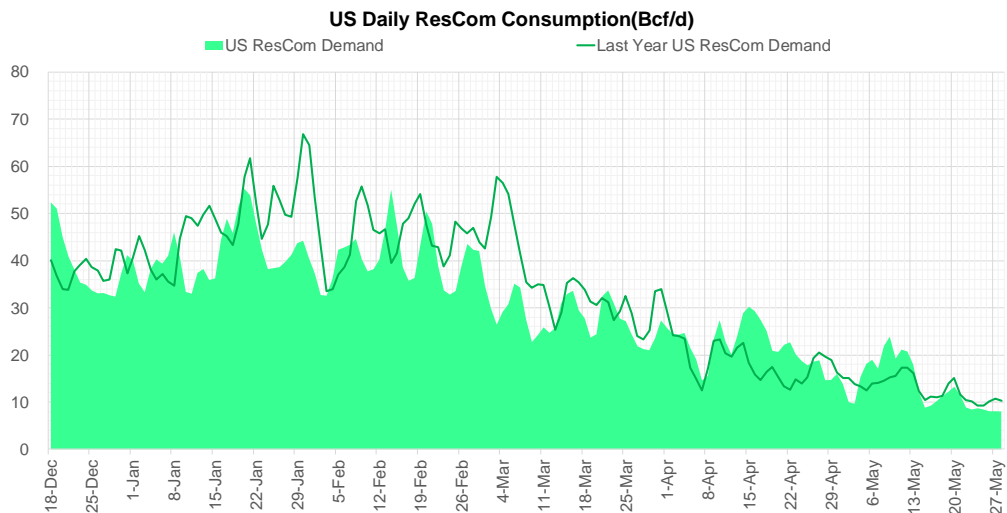
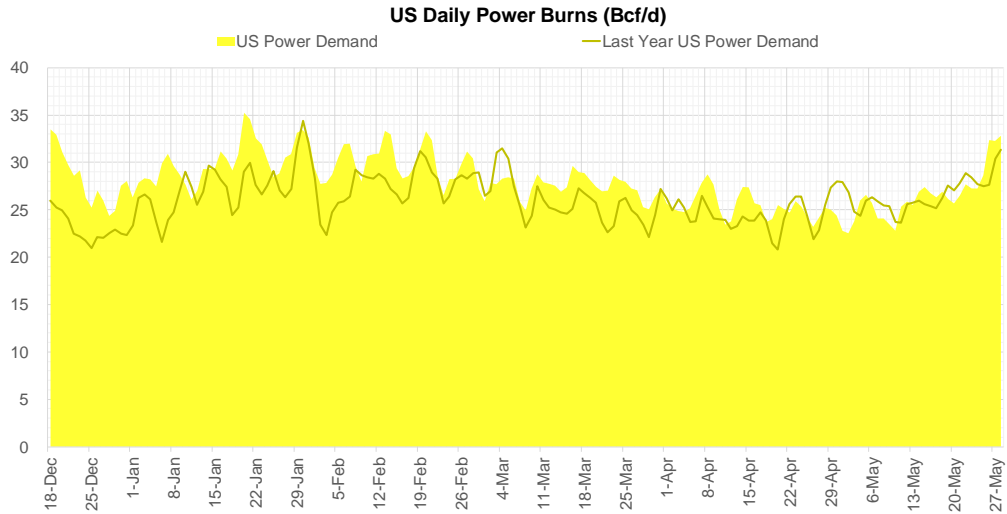
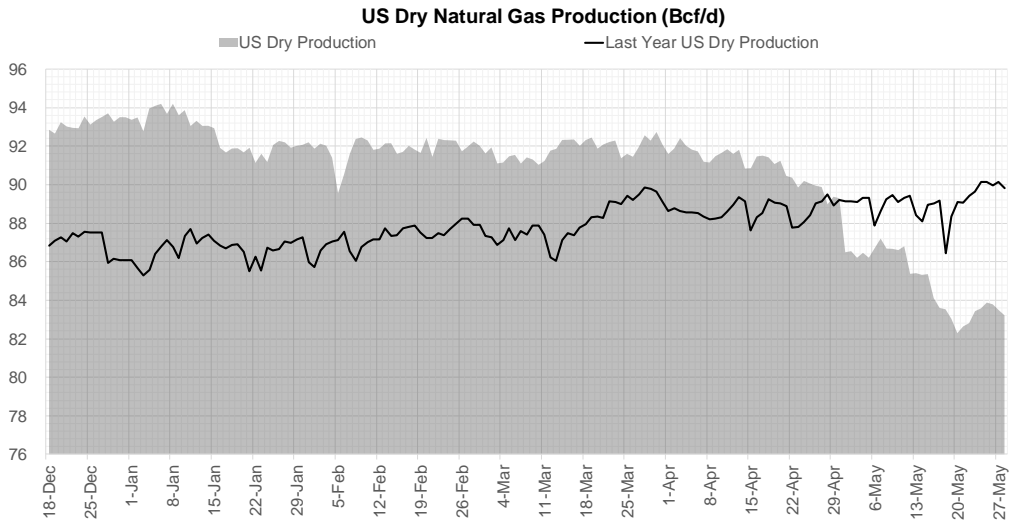
Weather Based End of Winter Projection (Bcf)

10Y normals past 15 day forecast window



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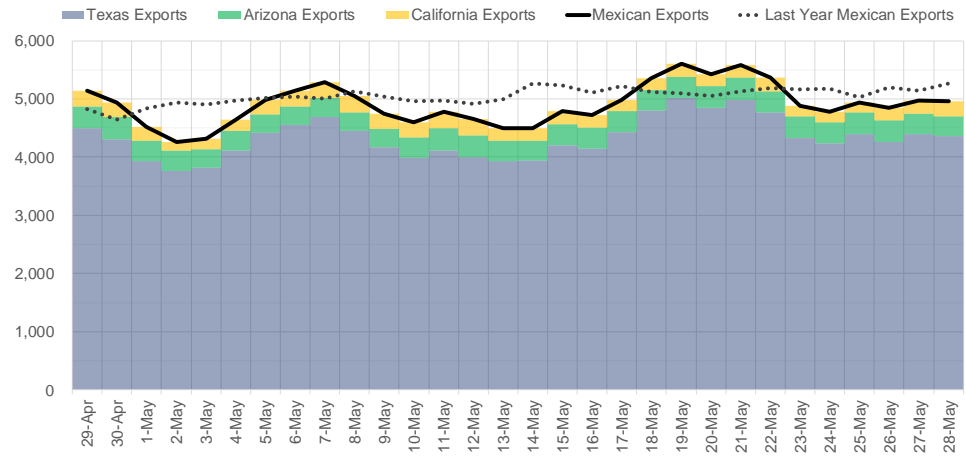
Supply – Demand Trends



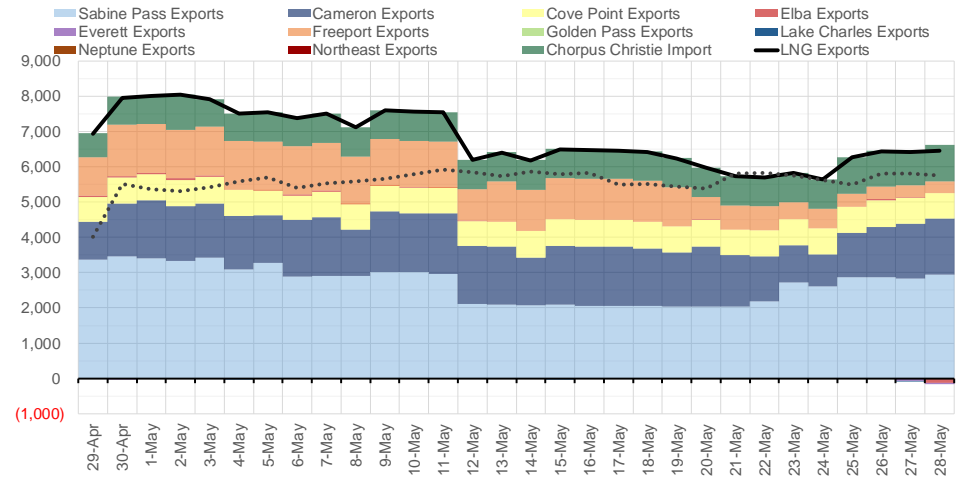
Source: Bloomberg

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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

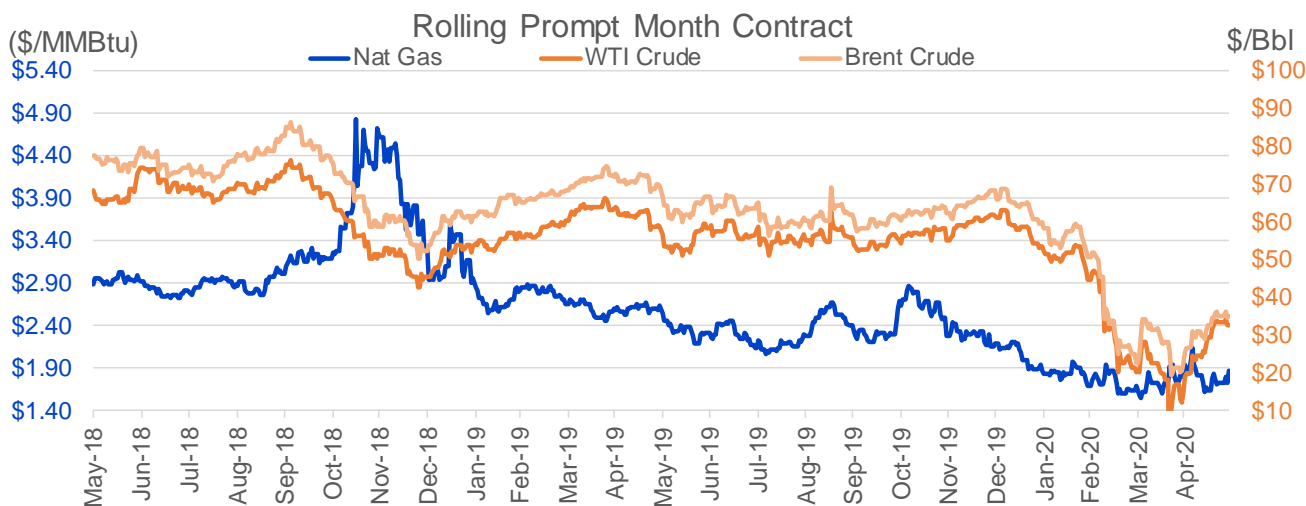
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
7	2020	C	1.95	5970	6	2020	P	1.25	39917
6	2020	P	1.70	4309	10	2020	C	3.00	38511
6	2020	C	1.80	4213	6	2020	C	2.50	36980
8	2020	P	1.50	3208	10	2020	P	1.50	36246
6	2020	P	1.75	3172	6	2020	C	2.25	34676
7	2020	P	1.55	3151	6	2020	P	1.50	33755
7	2020	P	1.65	2905	3	2021	P	2.00	33293
7	2020	P	1.80	2447	7	2020	P	1.50	32856
7	2020	P	1.70	2445	10	2020	C	2.75	30693
7	2020	P	1.50	2429	10	2020	P	1.60	29293
6	2020	C	1.85	2410	6	2020	P	1.75	28091
7	2020	P	1.90	2332	6	2020	C	2.00	27838
7	2020	C	2.25	2190	10	2020	P	2.00	27078
7	2020	C	2.00	1894	7	2020	C	3.00	26150
7	2020	P	1.85	1849	9	2020	C	2.50	25942
6	2020	P	1.80	1795	7	2020	P	1.75	25759
7	2020	C	1.90	1664	10	2020	C	2.50	23499
7	2020	P	1.60	1628	7	2020	C	2.50	23476
7	2020	C	2.10	1527	6	2020	P	2.00	23464
7	2020	P	1.75	1264	9	2020	P	1.50	22200
8	2020	P	1.25	1262	10	2020	P	1.25	21811
7	2020	P	1.40	1189	9	2020	C	2.75	21144
8	2020	C	2.10	1017	7	2020	P	2.00	20575
8	2020	P	1.70	1002	10	2020	P	1.75	20226
8	2020	C	2.25	870	1	2021	C	3.00	19823
9	2020	C	2.30	870	7	2020	C	2.25	19328
6	2020	C	1.75	806	8	2020	C	3.00	18922
5	2030	C	6.75	754	1	2021	C	3.50	18872
8	2020	C	2.05	716	11	2020	C	4.00	18814
8	2020	P	1.80	709	8	2020	P	1.50	18461
8	2020	P	1.95	670	7	2020	C	2.30	18387
8	2020	P	1.60	667	8	2020	C	2.50	18099
8	2020	P	1.40	656	10	2020	P	2.10	17913
7	2020	C	2.75	626	9	2020	C	3.00	17861
12	2020	P	2.50	600	6	2020	P	1.60	17554
1	2021	P	2.50	600	10	2020	C	3.25	17327
6	2020	P	1.85	594	6	2020	C	3.00	16933
7	2020	C	3.00	577	10	2020	C	2.25	16811
6	2020	P	1.60	486	6	2020	P	1.00	16758
7	2020	C	2.40	458	7	2020	P	1.25	16424
12	2020	C	3.50	455	4	2021	C	3.00	16273
7	2020	C	2.50	446	7	2020	C	2.75	16236
7	2020	C	2.20	436	6	2020	P	1.70	15865
7	2020	C	2.60	426	9	2020	C	2.25	15695
8	2020	P	2.00	380	8	2020	C	2.75	15276
7	2020	C	2.05	378	6	2020	P	1.40	14681
8	2020	P	1.75	378	3	2021	C	3.00	14398
7	2020	P	1.95	336	9	2020	P	1.75	14385
6	2020	P	1.67	302	7	2020	P	1.00	14371
					8	2020	P	1	14263

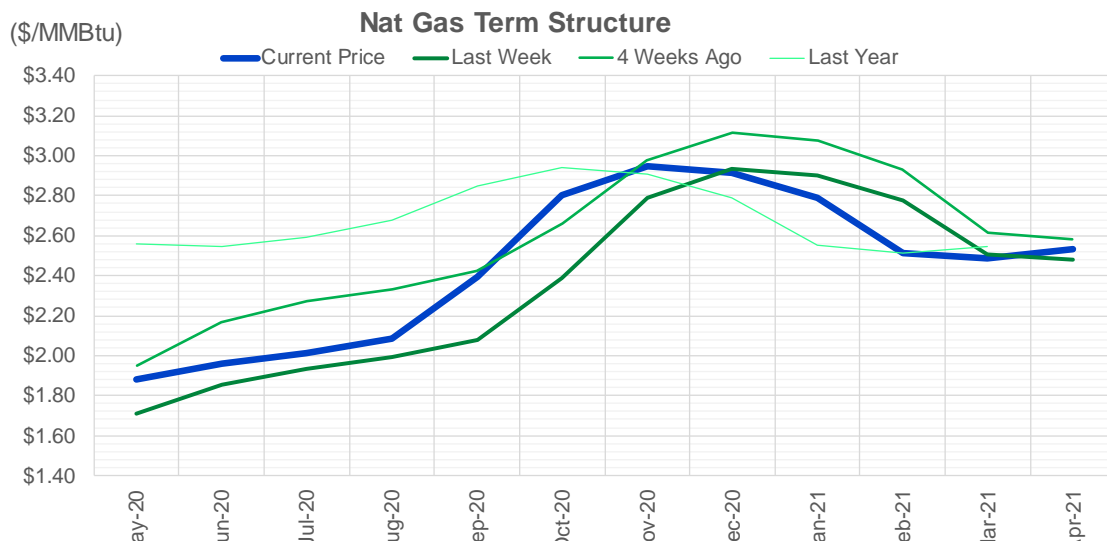
Source: CME, Nasdaq, ICE

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	2113	16079	-13966	JUN 20	68844	67266	1578.5	JUN 20	81	81	0
JUL 20	354657	352938	1719	JUL 20	84835	83004	1831.25	JUL 20	80	80	0
AUG 20	76059	74503	1556	AUG 20	69073	68994	79.75	AUG 20	280	280	0
SEP 20	148670	147287	1383	SEP 20	66084	66041	43.75	SEP 20	81	81	0
OCT 20	103323	102163	1160	OCT 20	75585	75606	-21.75	OCT 20	760	760	0
NOV 20	44412	44020	392	NOV 20	59708	59317	391.5	NOV 20	631	631	0
DEC 20	56620	57031	-411	DEC 20	57287	57260	26.75	DEC 20	132	132	0
JAN 21	96171	95392	779	JAN 21	69155	69110	44.75	JAN 21	151	151	0
FEB 21	35575	35684	-109	FEB 21	43546	43467	79	FEB 21	23	23	0
MAR 21	62648	62793	-145	MAR 21	58241	58255	-14	MAR 21	1101	1101	0
APR 21	70539	70541	-2	APR 21	51435	51355	80	APR 21	775	775	0
MAY 21	25713	25623	90	MAY 21	44435	44344	90.75	MAY 21	41	41	0
JUN 21	16639	16776	-137	JUN 21	41365	41186	179	JUN 21	40	40	0
JUL 21	12253	12211	42	JUL 21	42917	42852	64.75	JUL 21	41	41	0
AUG 21	10493	10231	262	AUG 21	43168	43150	18.25	AUG 21	41	41	0
SEP 21	11620	11669	-49	SEP 21	40826	40793	33.5	SEP 21	40	40	0
OCT 21	24172	23892	280	OCT 21	52413	52314	99.25	OCT 21	326	326	0
NOV 21	16283	16571	-288	NOV 21	35807	35708	99.75	NOV 21	405	405	0
DEC 21	13395	13387	8	DEC 21	36285	36137	147.75	DEC 21	5	5	0
JAN 22	11284	11507	-223	JAN 22	27645	27511	133.75	JAN 22	36	36	0
FEB 22	6430	6182	248	FEB 22	24622	24496	125.5	FEB 22	33	33	0
MAR 22	13480	13470	10	MAR 22	26492	26558	-65.75	MAR 22	900	900	0
APR 22	10651	10838	-187	APR 22	23167	23096	70.75	APR 22	1035	1035	0
MAY 22	4339	4341	-2	MAY 22	20773	20895	-121.75	MAY 22	36	36	0
JUN 22	2059	2058	1	JUN 22	20125	20012	113.5	JUN 22	35	35	0
JUL 22	1801	1801	0	JUL 22	20971	21126	-155	JUL 22	36	36	0
AUG 22	1255	1255	0	AUG 22	20531	20407	123.5	AUG 22	36	36	0
SEP 22	1320	1320	0	SEP 22	20426	20305	121	SEP 22	35	35	0
OCT 22	1890	1890	0	OCT 22	23178	22820	358.25	OCT 22	479	479	0
NOV 22	1357	1357	0	NOV 22	18533	18577	-44	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	\$1.878	\$1.959	\$2.011	\$2.087	\$2.397	\$2.804	\$2.948	\$2.915	\$2.792	\$2.513	\$2.488	\$2.530
Last Week	\$1.710	\$1.852	\$1.933	\$1.993	\$2.081	\$2.388	\$2.792	\$2.935	\$2.899	\$2.776	\$2.506	\$2.478
vs. Last Week	\$0.168	\$0.107	\$0.078	\$0.094	\$0.316	\$0.416	\$0.156	-\$0.020	-\$0.107	-\$0.263	-\$0.018	\$0.052
4 Weeks Ago	\$1.949	\$2.170	\$2.275	\$2.331	\$2.424	\$2.662	\$2.975	\$3.115	\$3.073	\$2.934	\$2.617	\$2.581
vs. 4 Weeks Ago	-\$0.071	-\$0.211	-\$0.264	-\$0.244	-\$0.027	\$0.142	-\$0.027	-\$0.200	-\$0.281	-\$0.421	-\$0.129	-\$0.051
Last Year	\$2.547	\$2.557	\$2.549	\$2.592	\$2.675	\$2.848	\$2.944	\$2.905	\$2.788	\$2.550	\$2.515	\$2.548
vs. Last Year	-\$0.669	-\$0.598	-\$0.538	-\$0.505	-\$0.278	-\$0.044	\$0.004	\$0.010	\$0.004	-\$0.037	-\$0.027	-\$0.018

	Units	Cash Settled	Prompt Settle	Cash to Prompt
AGT Citygate	\$/MMBtu	1.90	1.49	-0.41
TETCO M3	\$/MMBtu	1.54	1.39	-0.15
FGT Zone 3	\$/MMBtu	1.43	1.80	0.37
Zone 6 NY	\$/MMBtu	1.43	1.38	-0.05
Chicago Citygate	\$/MMBtu	1.70	1.73	0.03
Michcon	\$/MMBtu	1.69	1.71	0.02
Columbia TCO Pool	\$/MMBtu	1.64	1.52	-0.12
Ventura	\$/MMBtu	1.71	1.71	0.00
Rockies/Opal	\$/MMBtu	1.65	1.57	-0.08
El Paso Permian Basin	\$/MMBtu	1.60	1.53	-0.07
Socal Citygate	\$/MMBtu	2.30	1.78	-0.52
Malin	\$/MMBtu	1.46	1.65	0.19
Houston Ship Channel	\$/MMBtu	1.78	1.74	-0.04
Henry Hub Cash	\$/MMBtu	1.79	1.69	-0.10
AECO Cash	C\$/GJ	1.53	1.57	0.04
Station2 Cash	C\$/GJ	1.51	1.61	0.10
Dawn Cash	C\$/GJ	1.65	1.74	0.09

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	▼ -0.119	
NatGas Mar/Apr	\$/MMBtu	0.187	▲ 0.000	▲ 0.000	▼ -0.055	
NatGas Oct/Nov	\$/MMBtu	0.30	▲ 0.037	▲ 0.073	▲ 0.246	
NatGas Oct/Jan	\$/MMBtu	0.84	▲ 0.067	▲ 0.160	▲ 0.527	
WTI Crude	\$/Bbl	34.35	▲ 1.850	▲ 22.010	▼ -24.790	
Brent Crude	\$/Bbl	36.17	▲ 1.520	▲ 15.710	▼ -33.940	
Fuel Oil, NY Harbour 1%	\$/Bbl	98.03	▲ 0.000	▲ 0.000	▲ 0.000	
Heating Oil	cents/Gallon	99.08	▲ 1.720	▲ 36.000	▼ -100.170	
Propane, Mt. Bel	cents/Gallon	0.41	▲ 0.004	▲ 0.087	▼ -0.169	
Ethane, Mt. Bel	cents/Gallon	0.22	▼ -0.006	▲ 0.093	▼ -0.005	
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▼ -0.150	
Coal, ILB	\$/MTon	31.05	▲ 0.000	▲ 0.000	▼ -10.000	