

	Current	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$ 1.90	▲ \$ 0.05	▲ \$ 0.10

	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 40.48	▼ \$ (0.79)	▼ \$ (0.8)

	Current	Δ from YD	Δ from 7D Avg
Brent Prompt	\$ 43.03	▼ \$ (0.72)	▼ \$ (0.4)

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- [Short-term Weather Model Outlooks](#)
- [Lower 48 Component Models](#)
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- [Weather Model Storage Projection](#)
- [Supply – Demand Trends](#)
- [Nat Gas Options Volume and Open Interest](#)
- [Nat Gas Futures Open Interest](#)
- [Price Summary](#)

### 00z GWDD Change

Cooler Change

Warmer Change

ECMWF Ensemble 00z	1-5 Day	6-10 Day	11-15 Day	Total
12 Hr Chg	1.0	-2.4	0.6	-0.8
24 Hr Chg	-0.6	-4.1	1.1	-3.6

GFS Ensemble 00z	1-5 Day	6-10 Day	11-15 Day	Total
12 Hr Chg	-0.4	2.5	1.2	3.3
24 Hr Chg	-1.7	0.1	-2.2	-3.8

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	85.7	▲ 0.02	▼ -0.41

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	45.3	▲ 0.31	▼ -0.07

	Current	Δ from YD	Δ from 7D Avg
US ResComm	7.9	▼ -0.01	▲ 0.32

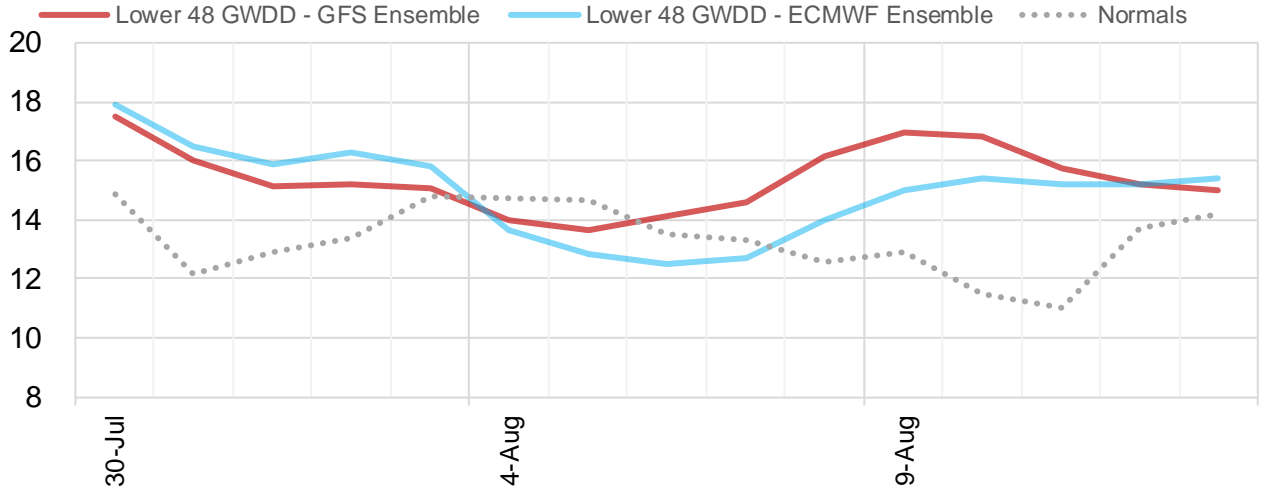
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.9	▲ 0.03	▲ 0.47

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	3.4	▲ 0.05	▲ 0.24

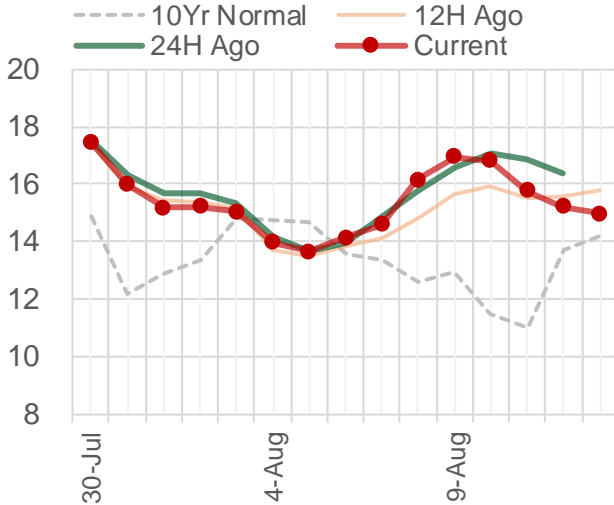
	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.3	▲ 0.11	▲ 0.12

## Short-term Weather Model Outlooks (00z)

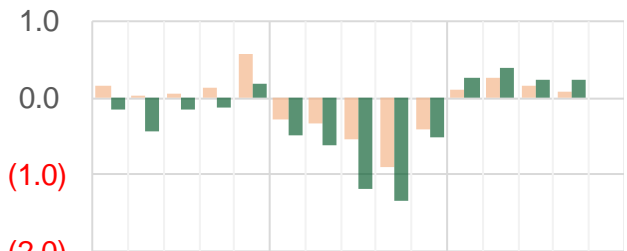
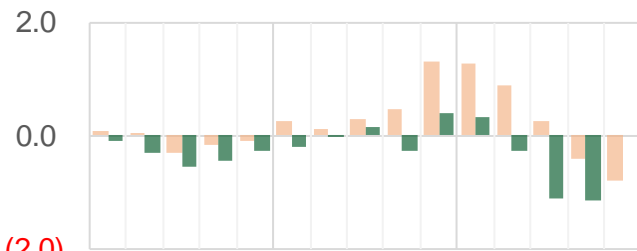
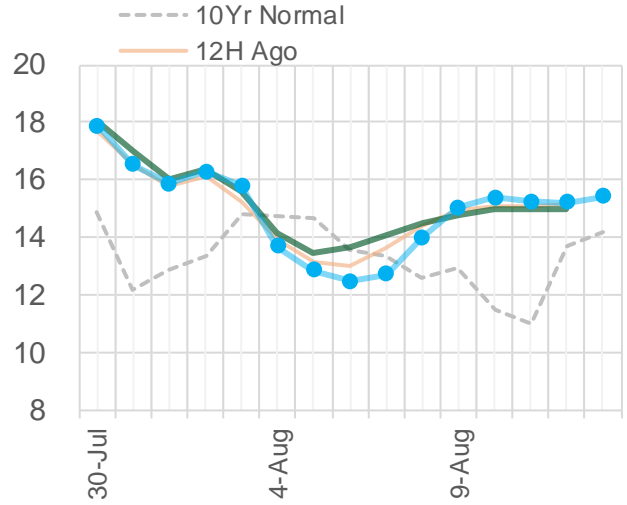
Lower 48 TDD Forecast



Lower 48 GWDD - GFS Ensemble



Lower 48 GWDD - ECMWF Ensemble



Source: WSI, Bloomberg

### Lower 48 Component Models

#### Daily Balances

	24-Jul	25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	DoD	vs. 7D
<b>Lower 48 Dry Production</b>	<b>86.2</b>	<b>86.1</b>	<b>86.6</b>	<b>86.5</b>	<b>85.8</b>	<b>85.7</b>	<b>85.7</b>	▲ 0.0	▼ -0.4
<b>Canadian Imports</b>	<b>4.1</b>	<b>4.1</b>	<b>4.2</b>	<b>4.6</b>	<b>5.0</b>	<b>4.8</b>	<b>4.9</b>	▲ 0.0	▲ 0.4
L48 Power	43.1	42.4	44.1	48.8	49.0	45.0	45.3	▲ 0.3	▼ -0.1
L48 Residential & Commercial	7.4	7.2	7.4	7.9	8.0	8.0	7.9	▼ 0.0	▲ 0.3
L48 Industrial	17.1	16.9	16.9	17.1	17.4	17.8	18.9	▲ 1.1	▲ 1.7
L48 Lease and Plant Fuel	4.8	4.8	4.8	4.8	4.8	4.8	4.8	▲ 0.0	▼ 0.0
L48 Pipeline Distribution	2.3	2.3	2.3	2.6	2.6	2.4	2.4	▲ 0.0	▲ 0.0
<b>L48 Regional Gas Consumption</b>	<b>74.6</b>	<b>73.6</b>	<b>75.6</b>	<b>81.2</b>	<b>81.7</b>	<b>77.9</b>	<b>79.4</b>	▲ 1.5	▲ 2.0
<b>Net LNG Exports</b>	<b>2.9</b>	<b>3.1</b>	<b>3.1</b>	<b>3.0</b>	<b>3.1</b>	<b>3.3</b>	<b>3.4</b>	▲ 0.0	▲ 0.3
<b>Total Mexican Exports</b>	<b>6.5</b>	<b>6.1</b>	<b>6.0</b>	<b>5.7</b>	<b>6.2</b>	<b>6.2</b>	<b>6.3</b>	▲ 0.1	▲ 0.2
<b>Implied Daily Storage Activity</b>	<b>6.2</b>	<b>7.4</b>	<b>6.1</b>	<b>1.2</b>	<b>-0.2</b>	<b>3.1</b>	<b>1.5</b>		
<b>EIA Reported Daily Storage Activity</b>									
<b>Daily Model Error</b>									

#### EIA Storage Week Balances

	19-Jun	26-Jun	3-Jul	10-Jul	17-Jul	24-Jul	WoW	vs. 4W
<b>Lower 48 Dry Production</b>	<b>85.1</b>	<b>84.9</b>	<b>85.2</b>	<b>85.6</b>	<b>85.5</b>	<b>86.2</b>	▲ 0.7	▲ 0.9
<b>Canadian Imports</b>	<b>3.8</b>	<b>4.2</b>	<b>4.1</b>	<b>4.3</b>	<b>4.5</b>	<b>4.4</b>	▼ -0.1	▲ 0.1
L48 Power	30.3	37.1	38.5	41.8	43.0	45.7	▲ 2.7	▲ 5.6
L48 Residential & Commercial	8.0	7.4	7.4	7.3	7.4	7.6	▲ 0.2	▲ 0.2
L48 Industrial	19.0	19.3	19.8	18.8	18.3	17.4	▼ -0.9	▼ -1.6
L48 Lease and Plant Fuel	4.8	4.8	4.8	4.8	4.8	4.8	▲ 0.0	▲ 0.0
L48 Pipeline Distribution	1.8	2.1	2.2	2.2	2.3	2.4	▲ 0.1	▲ 0.2
<b>L48 Regional Gas Consumption</b>	<b>63.8</b>	<b>70.7</b>	<b>72.6</b>	<b>74.9</b>	<b>75.7</b>	<b>77.9</b>	▲ 2.2	▲ 4.5
<b>Net LNG Exports</b>	<b>3.8</b>	<b>4.0</b>	<b>4.0</b>	<b>3.0</b>	<b>3.3</b>	<b>3.6</b>	▲ 0.3	▲ 0.0
<b>Total Mexican Exports</b>	<b>5.6</b>	<b>5.9</b>	<b>5.8</b>	<b>5.9</b>	<b>6.2</b>	<b>6.4</b>	▲ 0.2	▲ 0.4
<b>Implied Daily Storage Activity</b>	<b>15.7</b>	<b>8.5</b>	<b>6.9</b>	<b>6.0</b>	<b>4.8</b>	<b>2.7</b>	-2.1	
<b>EIA Reported Daily Storage Activity</b>	<b>17.1</b>	<b>9.3</b>	<b>8.0</b>	<b>6.4</b>	<b>5.3</b>			
<b>Daily Model Error</b>	<b>-1.5</b>	<b>-0.8</b>	<b>-1.1</b>	<b>-0.4</b>	<b>-0.5</b>			

#### Monthly Balances

	2Yr Ago Jul-18	LY Jul-19	Mar-20	Apr-20	May-20	Jun-20	MTD Jul-20	MoM	vs. LY
<b>Lower 48 Dry Production</b>	<b>81.8</b>	<b>90.1</b>	<b>93.3</b>	<b>91.8</b>	<b>86.0</b>	<b>84.9</b>	<b>85.8</b>	▲ 0.9	▼ -4.3
<b>Canadian Imports</b>	<b>5.6</b>	<b>5.0</b>	<b>4.1</b>	<b>4.0</b>	<b>3.9</b>	<b>4.0</b>	<b>4.4</b>	▲ 0.4	▼ -0.6
L48 Power	39.1	40.9	28.3	25.3	26.3	34.3	43.7	▲ 9.5	▲ 2.8
L48 Residential & Commercial	7.8	8.1	27.5	20.9	12.3	7.7	7.5	▼ -0.2	▼ -0.7
L48 Industrial	20.7	20.3	22.8	20.7	20.3	19.6	18.1	▼ -1.5	▼ -2.2
L48 Lease and Plant Fuel	4.6	5.0	5.2	5.1	4.8	4.8	4.8	▲ 0.0	▼ -0.2
L48 Pipeline Distribution	2.2	2.2	2.5	2.1	1.9	2.0	2.3	▲ 0.3	▲ 0.1
<b>L48 Regional Gas Consumption</b>	<b>74.3</b>	<b>76.6</b>	<b>86.4</b>	<b>74.2</b>	<b>65.6</b>	<b>68.3</b>	<b>76.4</b>	▲ 8.1	▼ -0.2
<b>Net LNG Exports</b>	<b>3.3</b>	<b>6.0</b>	<b>8.5</b>	<b>8.2</b>	<b>6.7</b>	<b>4.0</b>	<b>3.3</b>	▼ -0.8	▼ -2.7
<b>Total Mexican Exports</b>	<b>5.0</b>	<b>5.4</b>	<b>5.6</b>	<b>4.9</b>	<b>4.9</b>	<b>5.7</b>	<b>6.1</b>	▲ 0.4	▲ 0.7
<b>Implied Daily Storage Activity</b>	<b>4.8</b>	<b>7.1</b>	<b>-3.1</b>	<b>8.4</b>	<b>12.7</b>	<b>10.9</b>	<b>4.4</b>		
<b>EIA Reported Daily Storage Activity</b>									
<b>Daily Model Error</b>									

Source: Bloomberg, analytix.ai

### Regional S/D Models Storage Projection

Week Ending 24-Jul

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	2.4	0.7	3.2	22
East	-0.6	2.0	1.4	10
Midwest	2.6	-0.7	1.9	13
Mountain	2.8	-2.4	0.4	3
South Central	-3.0	2.2	-0.8	-6
Pacific	0.7	-0.3	0.3	2

\*Adjustment Factor is calculated based on historical regional deltas

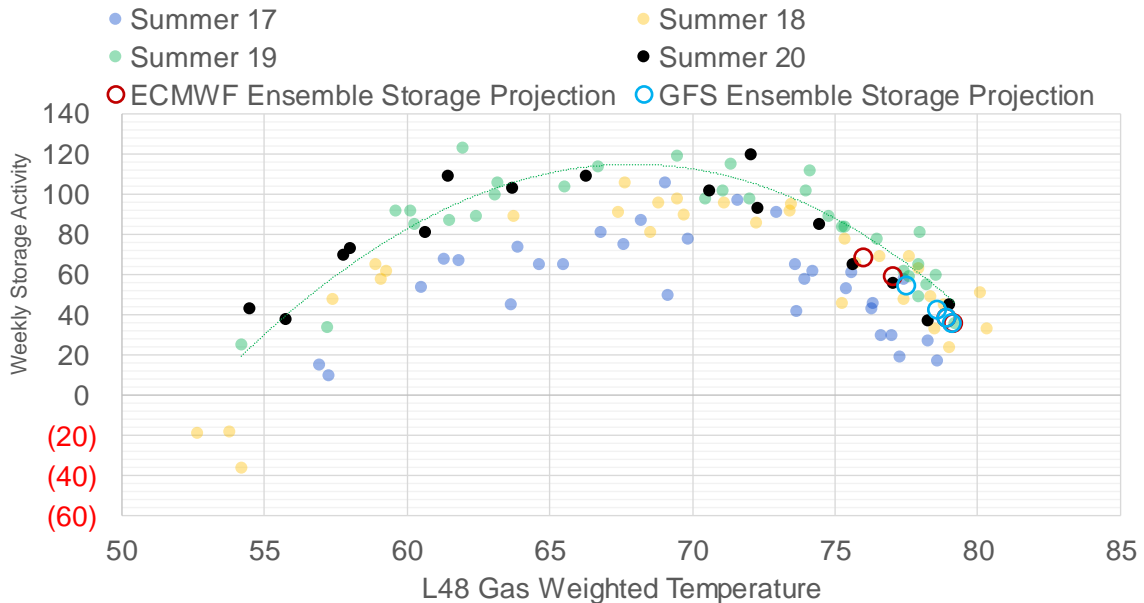
U.S. underground natural gas storage facilities by type (July 2015)



## Weather Model Storage Projection

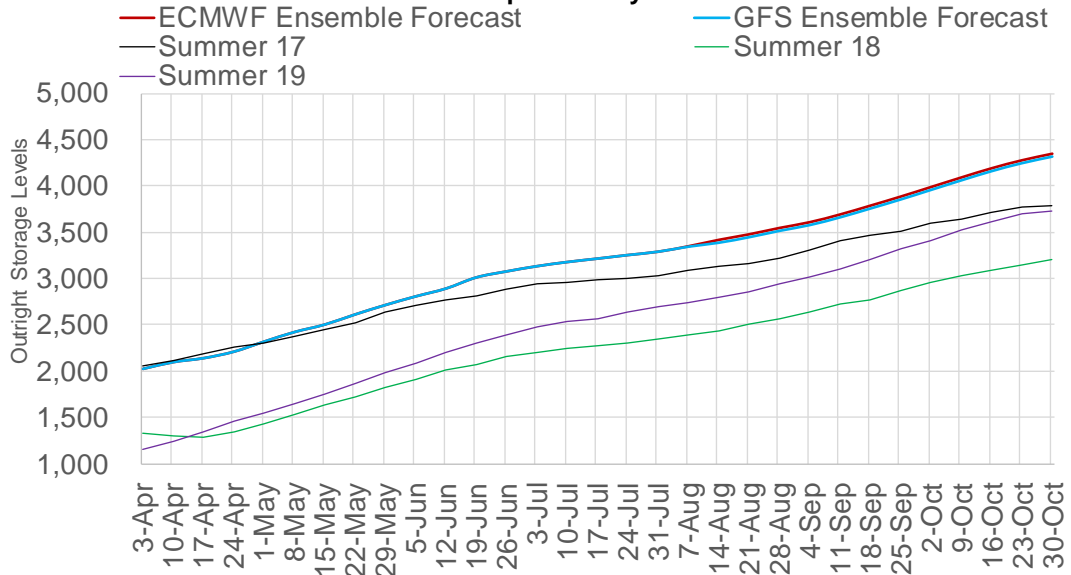
Next report and beyond	
Week Ending	Week Storage Projection
31-Jul	36
7-Aug	57
14-Aug	56

### Weather Storage Model - Next 4 Week Forecast

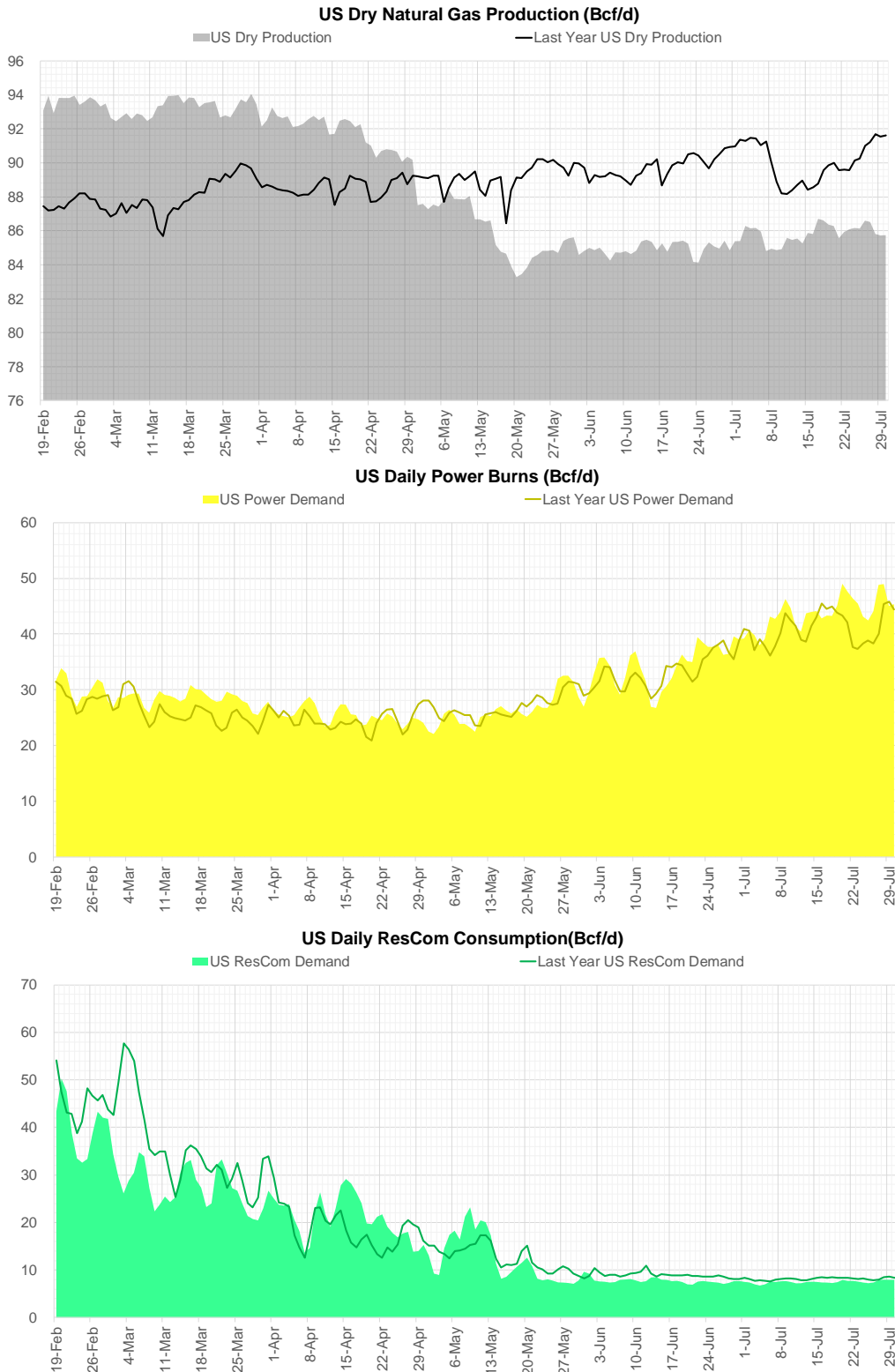


### Weather Based End of Winter Projection (Bcf)

10Y normals past 15 day forecast window



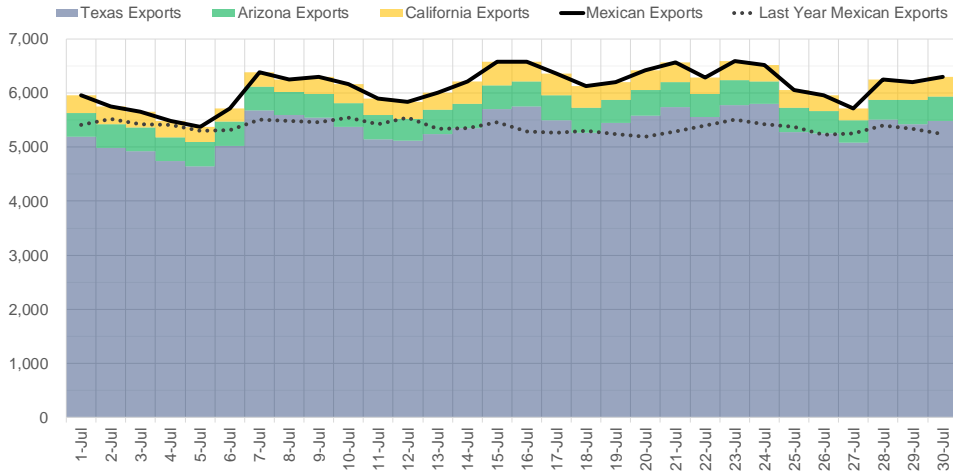
## Supply – Demand Trends



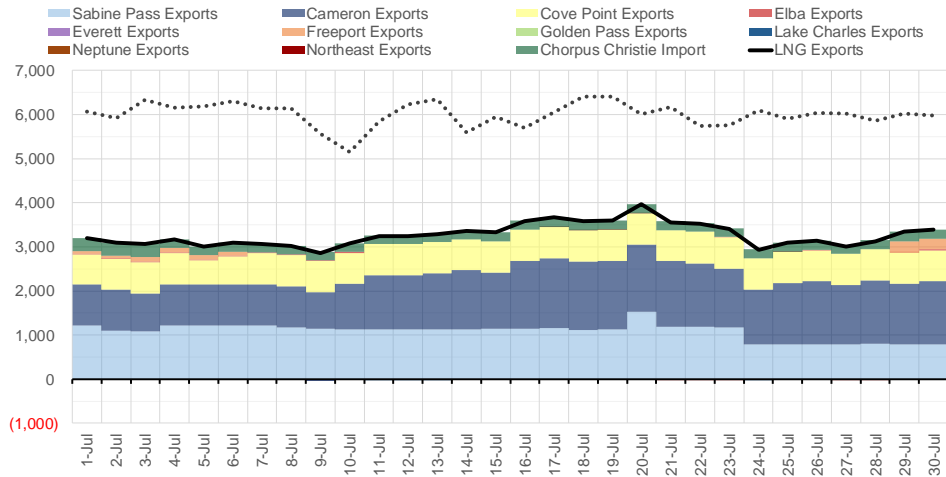
Source: Bloomberg

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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
9	2020	P	1.50	8288	10	2020	C	2.75	50413
9	2020	C	2.25	6263	10	2020	P	1.50	49910
10	2020	P	1.50	5884	10	2020	C	2.50	38494
10	2020	C	2.50	4323	3	2021	P	2.00	35531
9	2020	P	1.75	4289	10	2020	P	1.60	33072
10	2020	C	3.00	3744	10	2020	C	3.00	31596
9	2020	P	1.65	3456	10	2020	P	2.00	30683
9	2020	C	2.00	3097	9	2020	C	2.50	30085
9	2020	P	1.40	2987	9	2020	P	1.50	29445
10	2020	P	1.80	2958	10	2020	P	1.25	28474
9	2020	C	2.50	2680	10	2020	P	1.75	26794
9	2020	P	1.60	2578	9	2020	C	3.00	24442
12	2020	C	5.00	2500	9	2020	P	1.00	24080
10	2020	P	1.75	2424	9	2020	P	1.75	23417
9	2020	C	2.40	2420	10	2020	P	1.00	23114
9	2020	C	2.30	2402	9	2020	P	1.20	22368
10	2020	C	2.70	2231	3	2021	C	3.00	21754
9	2020	P	1.70	2209	9	2020	C	2.00	20467
10	2020	C	2.25	2139	3	2021	C	6.00	20454
9	2020	C	2.35	2064	9	2020	P	1.25	19859
9	2020	P	1.80	2062	9	2020	P	1.30	19535
4	2021	C	7.00	2001	9	2020	C	2.25	19442
9	2020	P	1.30	1958	10	2020	C	2.10	19377
11	2020	C	2.75	1710	10	2020	P	1.30	18950
10	2020	P	1.25	1697	9	2020	C	2.75	18750
1	2021	P	2.00	1552	1	2021	C	3.50	18372
9	2020	C	2.05	1504	10	2020	C	3.25	18191
11	2020	C	3.00	1462	10	2020	P	2.10	18182
10	2020	P	2.00	1443	3	2021	C	3.50	18155
3	2021	C	3.25	1401	10	2020	C	2.25	17967
3	2021	C	4.75	1400	12	2020	P	2.00	17493
3	2021	P	2.25	1400	1	2021	C	3.00	17413
9	2020	P	1.55	1319	11	2020	P	1.75	16339
10	2020	C	2.30	1265	10	2020	C	2.40	16221
9	2020	C	2.10	1250	10	2020	C	2.00	15898
2	2021	C	3.00	1060	12	2020	P	1.50	15755
1	2021	P	1.75	1052	4	2021	C	3.00	15496
3	2021	C	3.00	1030	9	2020	C	2.10	14334
9	2020	P	1.25	1016	11	2020	C	3.50	14006
4	2021	C	5.00	1000	9	2020	P	2.00	13954
4	2021	C	8.00	1000	1	2021	C	3.75	13718
9	2020	C	2.20	994	1	2021	C	4.50	13057
9	2020	C	1.90	948	9	2020	C	3.25	12912
10	2020	P	1.70	930	4	2021	P	2.00	12724
11	2020	C	2.50	903	10	2021	C	3.00	12550
9	2020	C	2.15	869	1	2021	P	2.50	12507
11	2020	P	1.75	792	10	2020	P	1.20	12395
9	2020	C	3.00	770	9	2020	P	1.60	12204
10	2020	P	1.40	732	5	2021	C	3.00	12203
					10	2020	C	2.2	12165

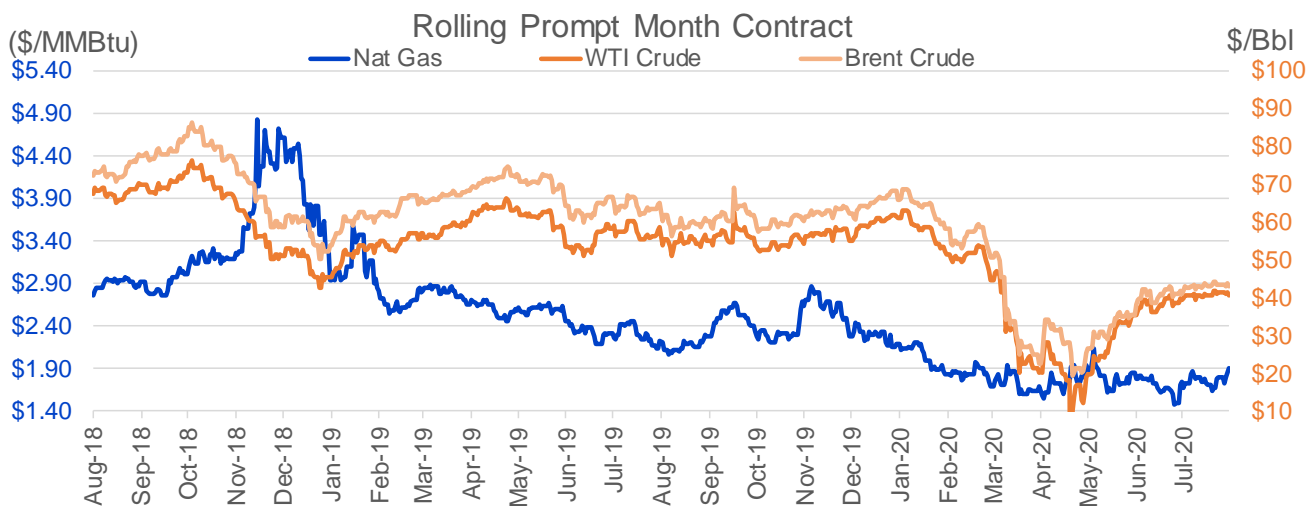
Source: CME, Nasdaq, ICE



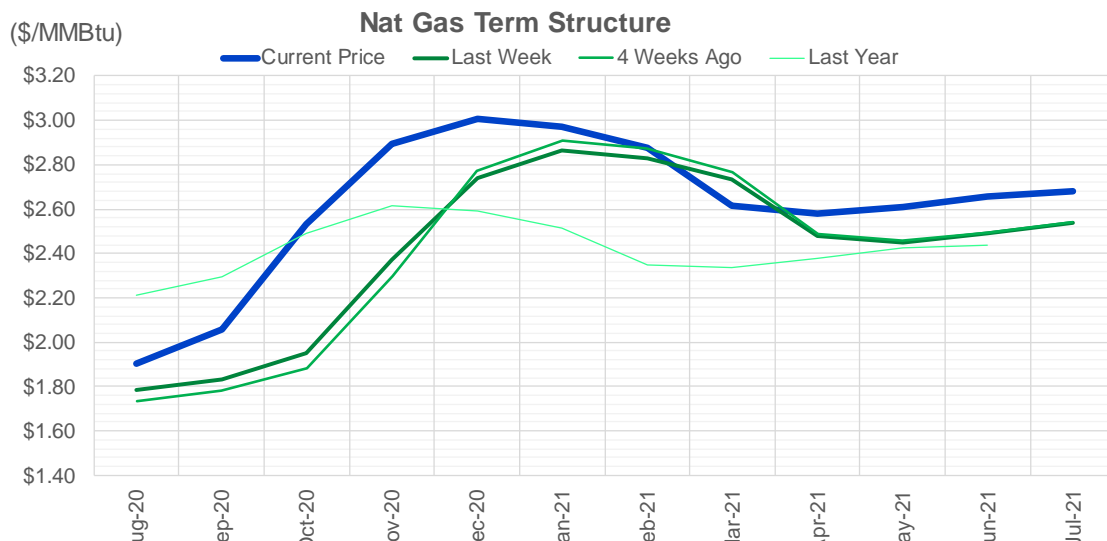
## Nat Gas Futures Open Interest CME, and ICE Combined

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
SEP 20	10	2388	-2378	SEP 20	69641	70969	-1328.25
OCT 20	348920	342188	6732	OCT 20	80520	77611	2909.75
NOV 20	154303	151559	2744	NOV 20	81780	81501	278.75
DEC 20	102628	103176	-548	DEC 20	66341	66931	-589.5
JAN 21	89282	87800	1482	JAN 21	64658	64174	483.5
FEB 21	131933	130736	1197	FEB 21	84879	82607	2272
MAR 21	41670	41832	-162	MAR 21	50783	50173	610
APR 21	78187	78876	-689	APR 21	68761	67578	1183.25
MAY 21	78437	77580	857	MAY 21	56966	55986	980
JUN 21	37030	36429	601	JUN 21	47817	47686	131.5
JUL 21	21369	21268	101	JUL 21	46429	46551	-121.75
AUG 21	18125	17962	163	AUG 21	47374	47188	185.75
SEP 21	15329	15475	-146	SEP 21	47638	47421	216.75
OCT 21	17537	17165	372	OCT 21	44919	45296	-377
NOV 21	43469	43748	-279	NOV 21	66738	66859	-121
DEC 21	23212	22629	583	DEC 21	38764	38058	705.75
JAN 22	16093	15672	421	JAN 22	40481	40118	363.25
FEB 22	15857	15631	226	FEB 22	31931	31633	298
MAR 22	9072	8905	167	MAR 22	28560	28319	241
APR 22	13852	13692	160	APR 22	30707	30409	297.25
MAY 22	13823	13602	221	MAY 22	28999	28963	36
JUN 22	5496	5433	63	JUN 22	22964	22827	136.75
JUL 22	2706	2682	24	JUL 22	22697	22577	119.5
AUG 22	2148	2063	85	AUG 22	22582	22526	56.5
SEP 22	1631	1532	99	SEP 22	22453	22381	72
OCT 22	2193	2057	136	OCT 22	21976	22039	-63.25
NOV 22	2418	2343	75	NOV 22	23811	23565	246
DEC 22	1878	1764	114	DEC 22	21060	20984	76.5
JAN 23	1829	1475	354	JAN 23	21562	21475	86.5
FEB 23	2596	2596	0	FEB 23	11669	11631	37.75

Source: CME, ICE



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	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21
<b>Current Price</b>	<b>\$1.902</b>	<b>\$2.055</b>	<b>\$2.530</b>	<b>\$2.892</b>	<b>\$3.009</b>	<b>\$2.973</b>	<b>\$2.875</b>	<b>\$2.616</b>	<b>\$2.579</b>	<b>\$2.612</b>	<b>\$2.659</b>	<b>\$2.678</b>
Last Week	\$1.785	\$1.835	\$1.952	\$2.371	\$2.739	\$2.864	\$2.831	\$2.733	\$2.480	\$2.449	\$2.490	\$2.539
vs. Last Week	\$0.117	\$0.220	\$0.578	\$0.521	\$0.270	\$0.109	\$0.044	-\$0.117	\$0.099	\$0.163	\$0.169	\$0.139
4 Weeks Ago	\$1.734	\$1.785	\$1.884	\$2.297	\$2.773	\$2.907	\$2.873	\$2.768	\$2.490	\$2.457	\$2.495	\$2.540
vs. 4 Weeks Ago	\$0.168	\$0.270	\$0.646	\$0.595	\$0.236	\$0.066	\$0.002	-\$0.152	\$0.089	\$0.155	\$0.164	\$0.138
Last Year	\$2.202	\$2.212	\$2.293	\$2.488	\$2.617	\$2.589	\$2.514	\$2.349	\$2.335	\$2.380	\$2.427	\$2.438
vs. Last Year	-\$0.300	-\$0.157	\$0.237	\$0.404	\$0.392	\$0.384	\$0.361	\$0.267	\$0.244	\$0.232	\$0.232	\$0.240

	Units	Cash Settled	Prompt Settle	Cash to Prompt
AGT Citygate	\$/MMBtu	1.84	1.68	-0.16
TETCO M3	\$/MMBtu	1.90	1.73	-0.17
FGT Zone 3	\$/MMBtu	1.80	1.86	0.06
Zone 6 NY	\$/MMBtu	1.80	1.67	-0.13
Chicago Citygate	\$/MMBtu	1.77	1.71	-0.06
Michcon	\$/MMBtu	1.70	1.67	-0.03
Columbia TCO Pool	\$/MMBtu	1.60	1.56	-0.04
Ventura	\$/MMBtu	1.72	1.72	0.00
Rockies/Opal	\$/MMBtu	1.66	1.60	-0.06
El Paso Permian Basin	\$/MMBtu	1.42	1.51	0.09
Socal Citygate	\$/MMBtu	2.59	1.88	-0.72
Malin	\$/MMBtu	1.76	1.71	-0.05
Houston Ship Channel	\$/MMBtu	1.79	1.77	-0.02
Henry Hub Cash	\$/MMBtu	1.75	1.68	-0.07
AECO Cash	C\$/GJ	1.59	1.54	-0.05
Station2 Cash	C\$/GJ	1.57	1.68	0.11
Dawn Cash	C\$/GJ	1.72	1.70	-0.03

Source: CME, Bloomberg

	Units	Current Price	vs. Last Week	vs. 4 Weeks		vs. Last Year
				Ago		
NatGas Jan/Apr	\$/MMBtu	-0.39	▼ -0.009	▲ 0.024	▼ -0.005	
NatGas Mar/Apr	\$/MMBtu	-0.259	▼ -0.006	▼ -0.537	▼ -0.511	
NatGas Oct/Nov	\$/MMBtu	0.48	▲ 0.056	▲ 0.062	▲ 0.405	
NatGas Oct/Jan	\$/MMBtu	0.95	▲ 0.042	▼ -0.069	▲ 0.611	
WTI Crude	\$/Bbl	40.48	▼ -0.590	▼ -0.170	▼ -13.470	
Brent Crude	\$/Bbl	43.03	▼ -0.280	▼ -0.110	▼ -17.470	
Fuel Oil, NY Harbour 1%	\$/Bbl	98.03	▲ 0.000	▲ 0.000	▲ 0.000	
Heating Oil	cents/Gallon	123.02	▼ -2.390	▼ -0.090	▼ -62.270	
Propane, Mt. Bel	cents/Gallon	0.49	▼ -0.005	▲ 0.025	▲ 0.048	
Ethane, Mt. Bel	cents/Gallon	0.22	▼ -0.001	▲ 0.015	▲ 0.087	
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▲ 0.000	
Coal, ILB	\$/MTon	31.05	▲ 0.000	▲ 0.000	▼ -7.500	