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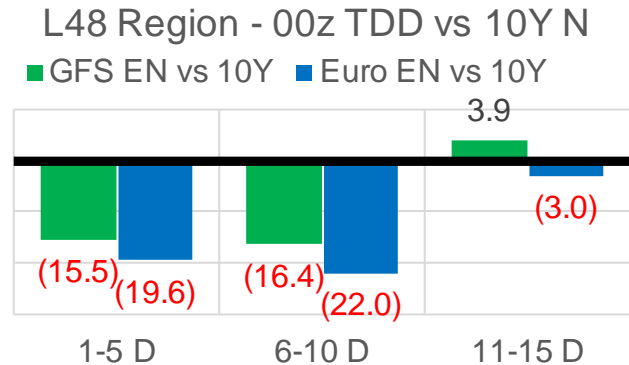
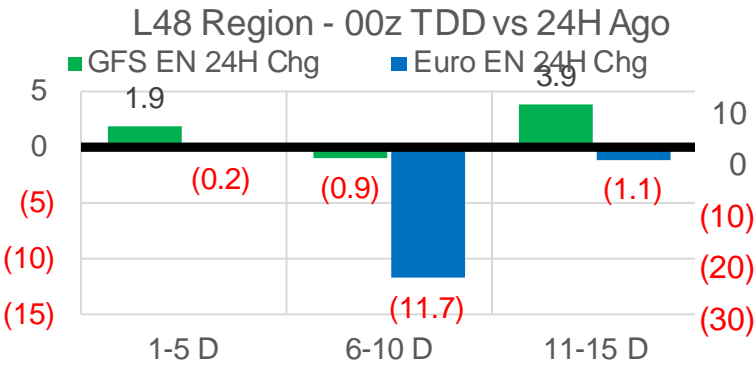
[Nat Gas Futures Open Interest](#)

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	Current	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$ 2.60	▼ \$ (0.11)	▼ \$ (0.27)

	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 41.54	▼ \$ (0.28)	▲ \$ 0.7

	Current	Δ from YD	Δ from 7D Avg
Brent Prompt	\$ 44.24	▼ \$ (0.10)	▲ \$ 0.8



	Current	Δ from YD	Δ from 7D Avg
US Dry Production	92.4	▼ -0.30	▲ 1.02

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	25.4	▲ 0.42	▲ 0.95

	Current	Δ from YD	Δ from 7D Avg
US ResComm	25.3	▼ -6.35	▼ -2.30

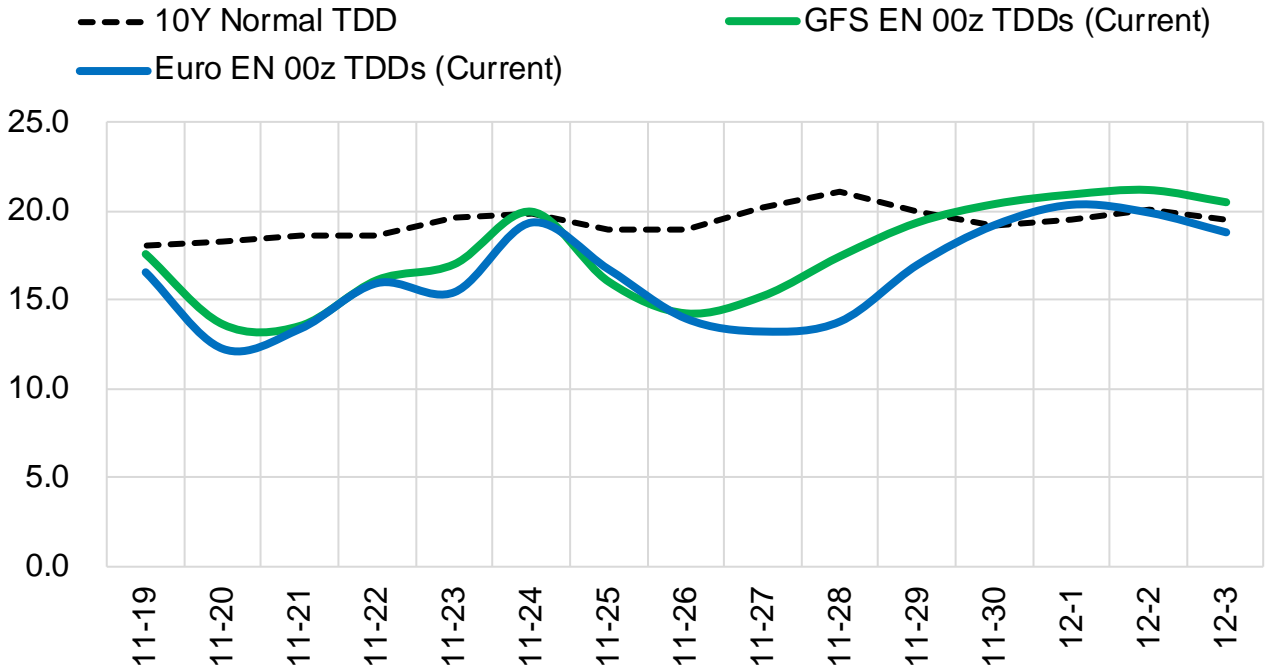
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.1	▼ -1.10	▼ -1.08

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	10.3	▼ -0.16	▲ 0.01

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.2	▲ 0.02	▼ -0.08

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

### L48 Region



Source: WSI , Bloomberg

## Lower 48 Component Models

### Daily Balances

	13-Nov	14-Nov	15-Nov	16-Nov	17-Nov	18-Nov	19-Nov	DoD	vs. 7D
<b>Lower 48 Dry Production</b>	<b>91.1</b>	<b>91.0</b>	<b>90.9</b>	<b>91.3</b>	<b>92.2</b>	<b>92.7</b>	<b>92.4</b>	▼ -0.3	▲ 0.8
<b>Canadian Imports</b>	<b>5.2</b>	<b>5.1</b>	<b>5.1</b>	<b>5.1</b>	<b>5.6</b>	<b>5.2</b>	<b>4.1</b>	▼ -1.1	▼ -1.1
L48 Power	24.1	21.5	22.1	26.4	26.0	24.9	25.4	▲ 0.4	▲ 1.2
L48 Residential & Commercial	28.0	26.7	24.2	27.1	30.9	31.7	25.3	▼ -6.4	▼ -2.8
L48 Industrial	26.6	26.2	26.0	26.2	26.3	25.4	23.9	▼ -1.5	▼ -2.2
L48 Lease and Plant Fuel	5.0	5.0	5.0	5.0	5.1	5.1	5.1	▲ 0.0	▲ 0.0
L48 Pipeline Distribution	2.4	2.2	2.2	2.5	2.7	2.6	2.4	▼ -0.3	▼ -0.1
<b>L48 Regional Gas Consumption</b>	<b>86.1</b>	<b>81.6</b>	<b>79.4</b>	<b>87.2</b>	<b>91.0</b>	<b>89.8</b>	<b>82.1</b>	▼ -7.7	▼ -3.8
<b>Net LNG Delivered</b>	<b>10.72</b>	<b>10.24</b>	<b>9.60</b>	<b>9.82</b>	<b>10.30</b>	<b>10.44</b>	<b>10.28</b>	▼ -0.2	▲ 0.1
<b>Total Mexican Exports</b>	<b>6.6</b>	<b>6.1</b>	<b>6.0</b>	<b>6.0</b>	<b>6.3</b>	<b>6.2</b>	<b>6.2</b>	▲ 0.0	▲ 0.0
<b>Implied Daily Storage Activity</b>	<b>-7.0</b>	<b>-1.8</b>	<b>1.0</b>	<b>-6.5</b>	<b>-9.8</b>	<b>-8.5</b>	<b>-2.0</b>		
<b>EIA Reported Daily Storage Activity</b>									
<b>Daily Model Error</b>									

### EIA Storage Week Balances

	9-Oct	16-Oct	23-Oct	30-Oct	6-Nov	13-Nov	WoW	vs. 4W
<b>Lower 48 Dry Production</b>	<b>88.1</b>	<b>86.7</b>	<b>90.0</b>	<b>88.1</b>	<b>90.4</b>	<b>89.0</b>	▼ -1.4	▲ 0.2
<b>Canadian Imports</b>	<b>4.5</b>	<b>4.0</b>	<b>3.6</b>	<b>4.8</b>	<b>4.9</b>	<b>3.9</b>	▼ -0.9	▼ -0.4
L48 Power	30.9	30.5	28.5	28.1	24.8	24.3	▼ -0.4	▼ -3.6
L48 Residential & Commercial	13.4	11.4	16.8	23.3	23.6	17.2	▼ -6.4	▼ -1.6
L48 Industrial	21.4	21.9	22.4	24.2	23.3	25.5	▲ 2.2	▲ 2.5
L48 Lease and Plant Fuel	4.8	4.8	4.9	4.8	5.0	4.9	▼ -0.1	▲ 0.0
L48 Pipeline Distribution	2.2	2.1	2.2	2.5	2.3	1.9	▼ -0.4	▼ -0.3
<b>L48 Regional Gas Consumption</b>	<b>72.8</b>	<b>70.6</b>	<b>75.0</b>	<b>82.9</b>	<b>78.9</b>	<b>73.8</b>	▼ -5.1	▼ -3.0
<b>Net LNG Exports</b>	<b>7.5</b>	<b>6.9</b>	<b>8.0</b>	<b>9.2</b>	<b>10.2</b>	<b>10.4</b>	▲ 0.1	▲ 1.8
<b>Total Mexican Exports</b>	<b>6.2</b>	<b>6.2</b>	<b>6.3</b>	<b>6.2</b>	<b>6.0</b>	<b>6.3</b>	▲ 0.3	▲ 0.1
<b>Implied Daily Storage Activity</b>	<b>6.1</b>	<b>7.0</b>	<b>4.2</b>	<b>-5.3</b>	<b>0.2</b>	<b>2.4</b>	<b>2.2</b>	
<b>EIA Reported Daily Storage Activity</b>	<b>6.6</b>	<b>7.0</b>	<b>4.1</b>	<b>-5.1</b>	<b>1.1</b>			
<b>Daily Model Error</b>	<b>-0.5</b>	<b>0.0</b>	<b>0.1</b>	<b>-0.2</b>	<b>-0.9</b>			

### Monthly Balances

	2Yr Ago Nov-18	LY Nov-19	Jul-20	Aug-20	Sep-20	Oct-20	MTD Nov-20	MoM	vs. LY
<b>Lower 48 Dry Production</b>	<b>88.1</b>	<b>95.3</b>	<b>88.3</b>	<b>88.6</b>	<b>88.6</b>	<b>88.3</b>	<b>90.5</b>	▲ 2.3	▼ -4.7
<b>Canadian Imports</b>	<b>4.1</b>	<b>4.5</b>	<b>4.4</b>	<b>4.9</b>	<b>3.8</b>	<b>4.3</b>	<b>4.6</b>	▲ 0.3	▲ 0.0
L48 Power	25.5	27.6	43.8	40.6	33.3	29.2	24.4	▼ -4.8	▼ -3.1
L48 Residential & Commercial	32.9	32.8	7.9	7.7	8.5	16.8	22.3	▲ 5.5	▼ -10.5
L48 Industrial	24.4	24.0	19.3	20.8	21.1	22.5	25.0	▲ 2.5	▲ 1.0
L48 Lease and Plant Fuel	5.0	5.3	4.9	5.0	4.9	4.9	5.0	▲ 0.1	▼ -0.3
L48 Pipeline Distribution	2.6	2.8	2.4	2.4	2.1	2.3	2.2	▼ -0.1	▼ -0.6
<b>L48 Regional Gas Consumption</b>	<b>90.3</b>	<b>92.5</b>	<b>78.3</b>	<b>76.4</b>	<b>69.8</b>	<b>75.7</b>	<b>79.0</b>	▲ 3.3	▼ -13.5
<b>Net LNG Exports</b>	<b>4.3</b>	<b>7.2</b>	<b>3.3</b>	<b>4.0</b>	<b>5.9</b>	<b>8.0</b>	<b>10.3</b>	▲ 2.3	▲ 3.1
<b>Total Mexican Exports</b>	<b>4.8</b>	<b>5.3</b>	<b>6.1</b>	<b>6.3</b>	<b>6.4</b>	<b>6.2</b>	<b>6.2</b>	▼ 0.0	▲ 0.9
<b>Implied Daily Storage Activity</b>	<b>-7.2</b>	<b>-5.1</b>	<b>4.9</b>	<b>6.8</b>	<b>10.2</b>	<b>2.6</b>	<b>-0.4</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 13-Nov

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	2.2	0.8	2.9	22
East	0.3	2.2	2.5	17
Midwest	1.5	1.3	2.7	19
Mountain	3.2	-3.4	-0.1	-1
South Central	-1.9	0.7	-1.1	-7
Pacific	-1.0	0.0	-1.0	-7

\*Adjustment Factor is calculated based on historical regional deltas

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

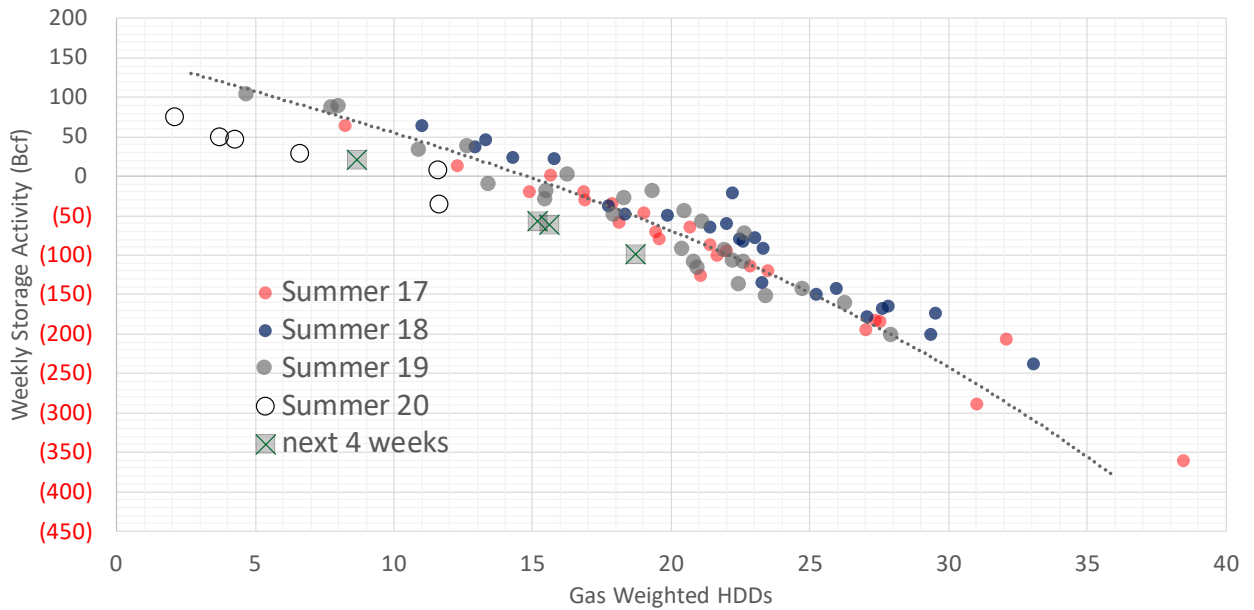


## Weather Model Storage Projection

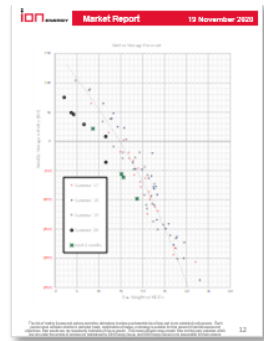
Next report  
and beyond

Week Ending	Temp	Week Storage Projection
13-Nov	8.7	22
20-Nov	15.6	-62
27-Nov	15.2	-56
04-Dec	18.7	-98

## Winter Storage Forecast

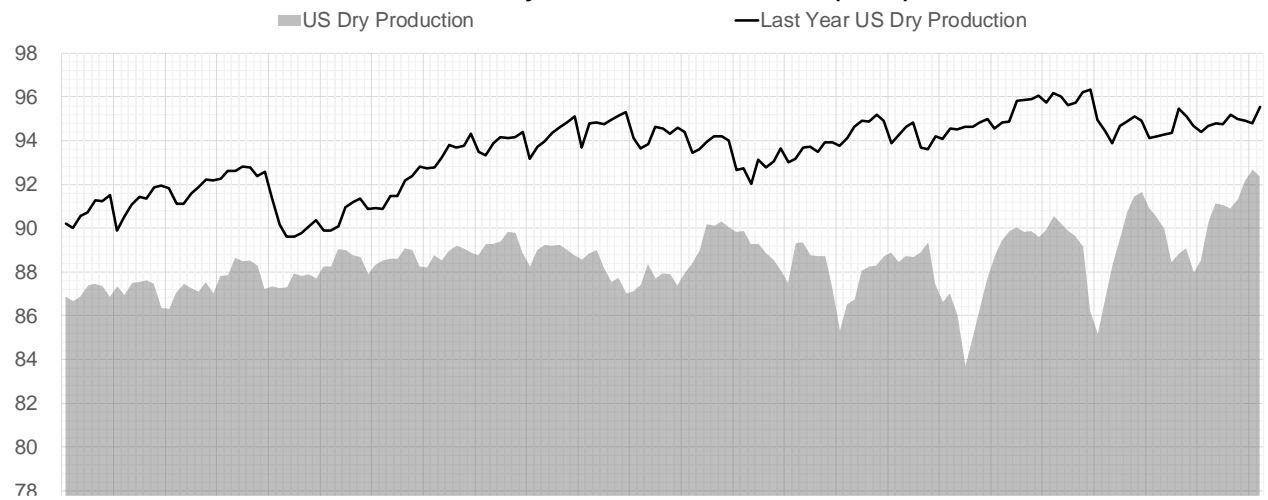


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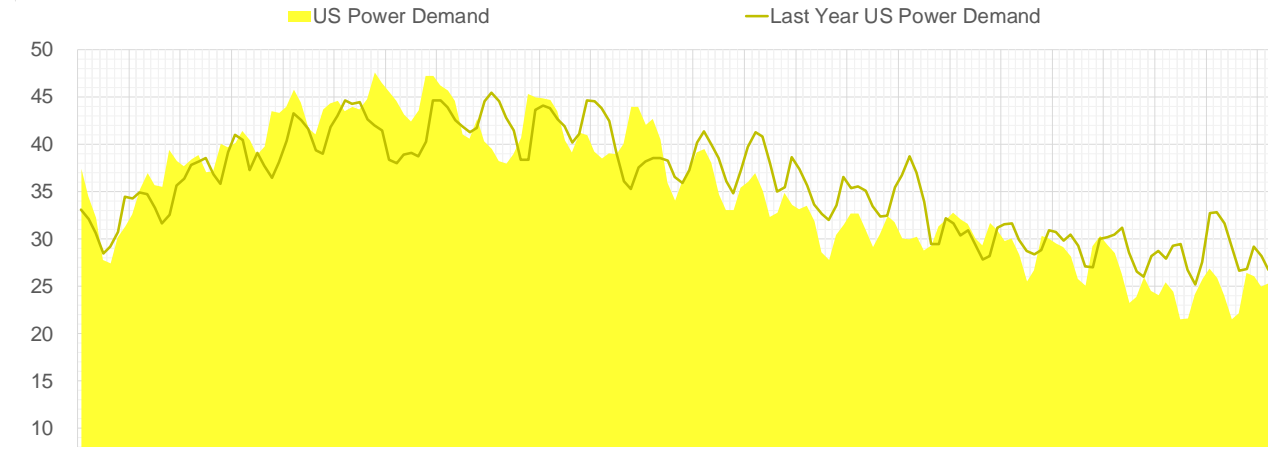


## Supply – Demand Trends

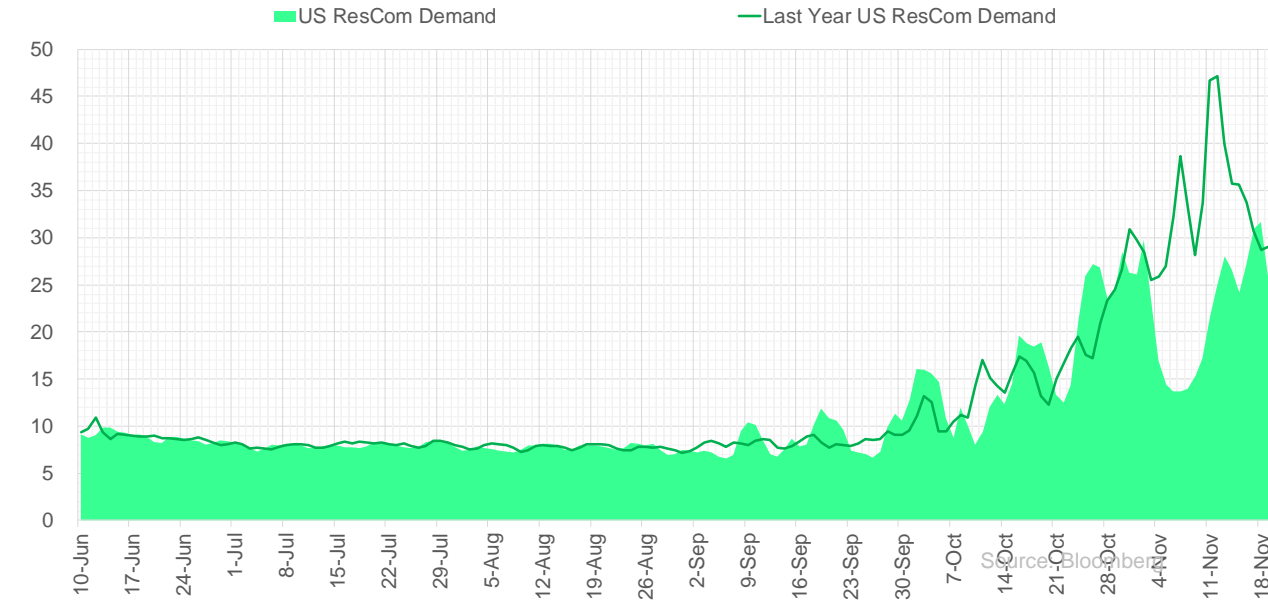
### US Dry Natural Gas Production (Bcf/d)



### US Daily Power Burns (Bcf/d)

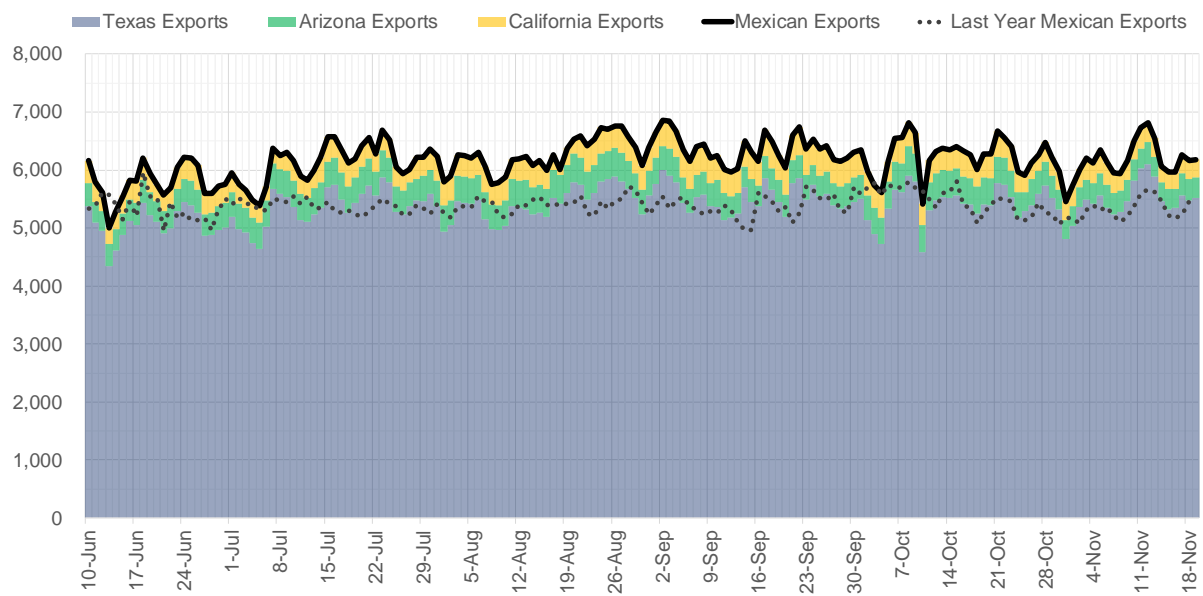


### US Daily ResCom Consumption (Bcf/d)

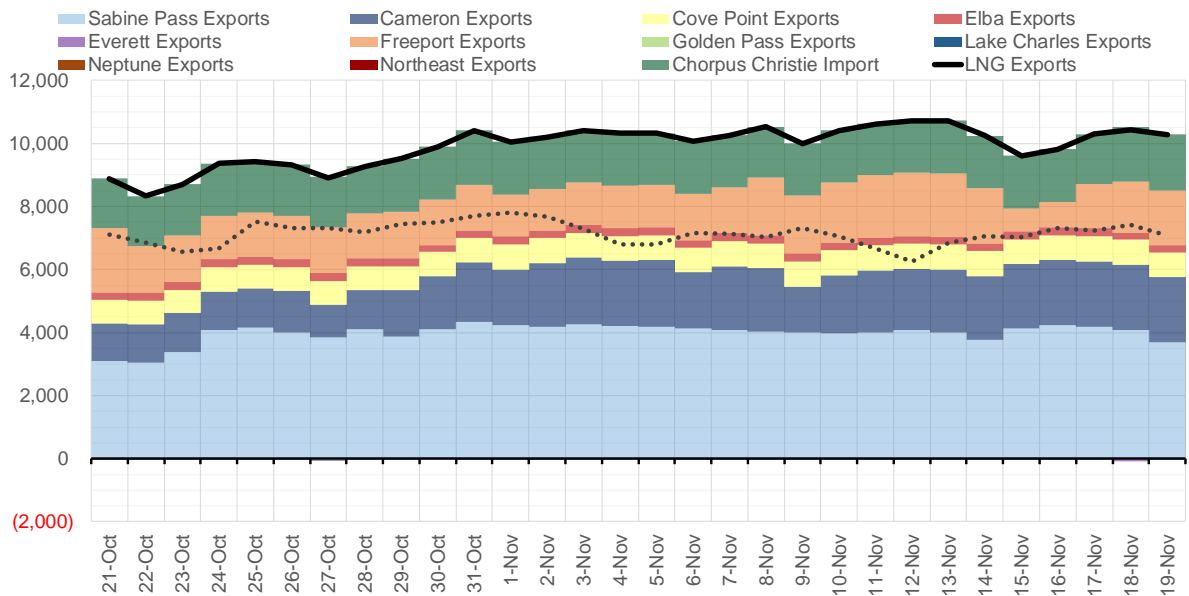


Source: Bloomberg

### 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
12	2020	C	3.00	5782	3	2021	C	4.00	39030
12	2020	P	2.50	4644	4	2021	C	4.00	38718
3	2021	C	4.00	4028	3	2021	P	2.00	38605
2	2021	C	3.50	3142	12	2020	P	2.00	31991
1	2021	C	3.75	3137	1	2021	C	3.50	30972
3	2021	P	2.50	3088	1	2021	C	4.50	29901
3	2021	C	4.25	2900	3	2021	C	3.25	28894
1	2021	C	3.50	2721	1	2021	P	2.50	28799
11	2021	C	4.00	2700	10	2021	C	4.00	28665
3	2021	P	2.00	2658	10	2021	C	3.25	27021
12	2020	C	2.90	2635	4	2021	C	5.00	26828
4	2021	P	2.00	2550	12	2020	C	3.75	26698
1	2021	C	3.25	2506	12	2020	C	3.50	25817
3	2021	C	3.00	2445	12	2020	C	4.00	25109
5	2021	C	4.50	2350	3	2021	C	6.00	24207
5	2021	P	2.00	2350	3	2021	C	7.00	24128
2	2021	C	4.25	2200	1	2021	C	5.00	23568
12	2020	P	2.60	2161	12	2020	P	2.50	23320
3	2021	C	3.50	2070	3	2021	C	5.00	23284
2	2021	P	2.25	2065	3	2021	C	3.00	23135
2	2021	C	4.75	2005	2	2021	P	2.25	23054
11	2021	C	3.50	2000	1	2021	C	3.75	22605
11	2021	P	2.00	2000	3	2021	C	4.50	22605
10	2021	C	4.00	1750	12	2020	C	4.50	22295
2	2021	C	3.25	1749	3	2021	C	3.50	22281
3	2021	P	2.25	1730	12	2020	P	2.75	21896
1	2021	P	2.50	1719	1	2021	C	4.00	21799
2	2021	C	3.75	1718	1	2021	C	6.00	21114
6	2021	P	2.50	1700	2	2021	P	2.50	21107
12	2020	P	2.70	1657	1	2021	C	3.00	20639
12	2020	P	2.65	1578	12	2020	C	3.00	20410
2	2021	P	2.50	1412	12	2020	C	3.25	20085
2	2021	C	3.00	1385	8	2021	P	2.25	19862
1	2021	P	2.25	1310	8	2021	C	4.00	19539
3	2021	C	3.25	1295	2	2021	C	3.50	19502
2	2021	C	4.00	1214	4	2021	C	3.25	19104
12	2020	P	2.75	1194	3	2021	P	2.50	18652
1	2021	P	2.60	1166	12	2020	P	3.00	18502
2	2021	P	2.40	1157	2	2021	C	4.00	18450
1	2021	P	2.75	1114	1	2021	P	2.00	18090
3	2021	C	3.75	1100	10	2021	C	5.00	17953
3	2021	P	2.40	1100	2	2021	C	5.00	17501
5	2021	C	3.00	1100	1	2021	P	2.25	16868
6	2021	C	3.00	1050	2	2021	C	4.50	16252
1	2021	C	4.00	1049	4	2021	C	3.00	16035
2	2021	C	6.00	1000	12	2020	C	5.00	15829
3	2021	C	7.00	1000	5	2021	C	3.00	15736
4	2021	C	3.75	1000	4	2021	P	2.00	15199
6	2021	C	4.00	1000	10	2021	C	3.00	15164
					12	2020	P	1.5	14450

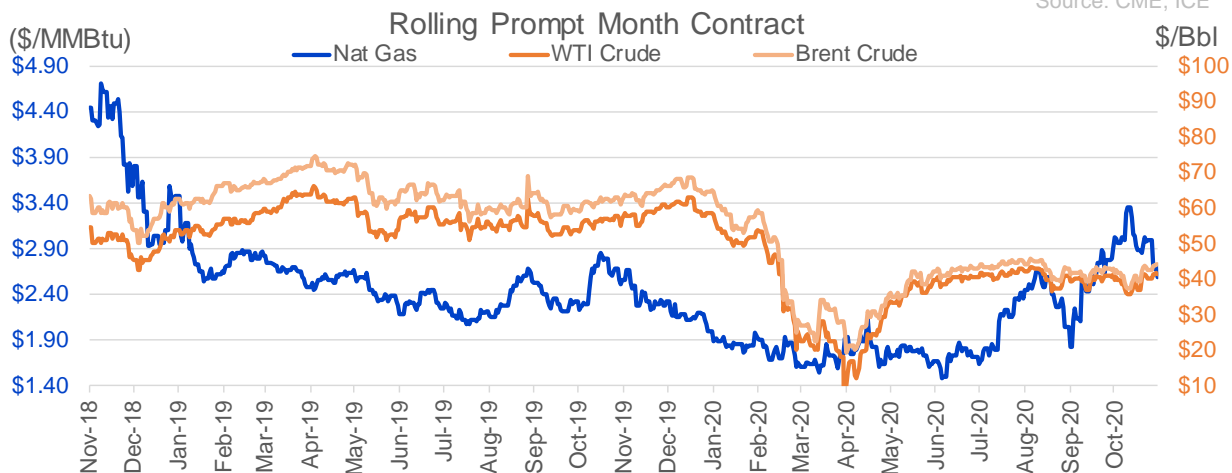
Source: CME, ICE



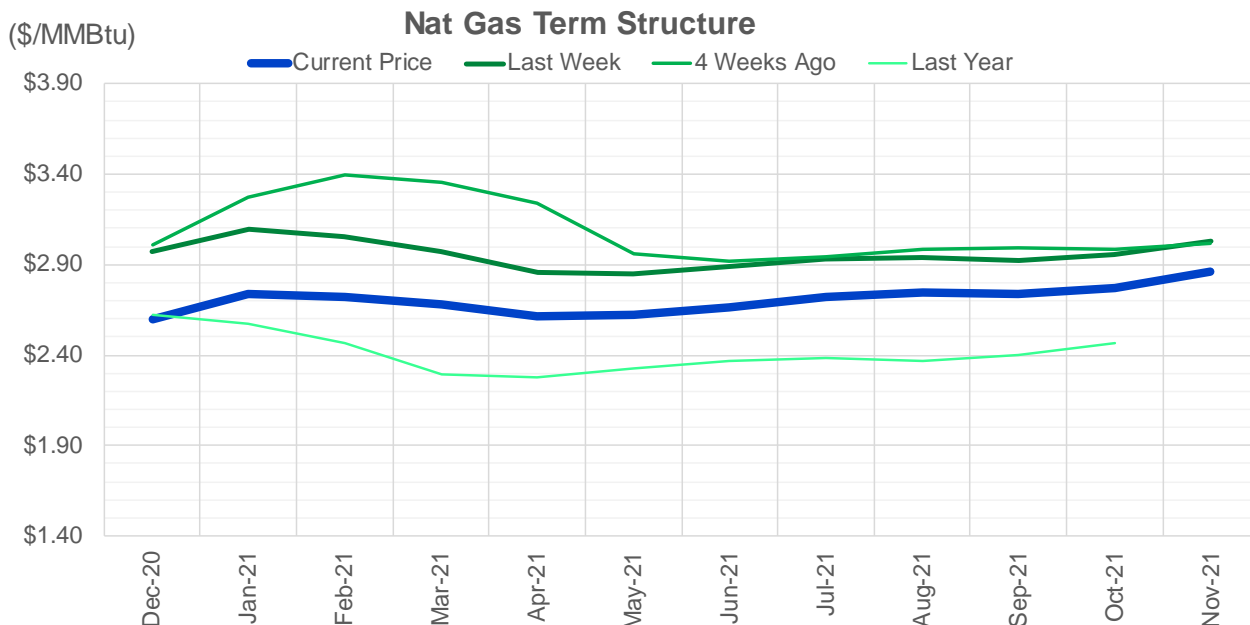
## Nat Gas Futures Open Interest CME, and ICE Combined

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
DEC 20	48959	69494	-20535	DEC 20	68673	69514	-841.25
JAN 21	295476	290741	4735	JAN 21	96165	93442	2723.5
FEB 21	99091	97142	1949	FEB 21	68161	66854	1307
MAR 21	174956	172185	2771	MAR 21	85531	85824	-292.5
APR 21	86693	87326	-633	APR 21	70832	71545	-712.5
MAY 21	58224	57400	824	MAY 21	72632	72457	174.25
JUN 21	36492	35155	1337	JUN 21	59187	58749	438.5
JUL 21	33205	32992	213	JUL 21	61717	61572	145.5
AUG 21	30649	26633	4016	AUG 21	65081	65125	-44.25
SEP 21	40728	36061	4667	SEP 21	58246	58185	60.5
OCT 21	103198	102646	552	OCT 21	69747	69620	127
NOV 21	40834	40644	190	NOV 21	52564	52678	-113.75
DEC 21	31483	31467	16	DEC 21	48972	48445	526.5
JAN 22	30546	32224	-1678	JAN 22	47294	46902	392.25
FEB 22	23902	23118	784	FEB 22	38294	38080	214.5
MAR 22	25344	25363	-19	MAR 22	41178	41106	71.75
APR 22	24336	25001	-665	APR 22	40445	41271	-825.5
MAY 22	12166	11968	198	MAY 22	31338	31085	252.25
JUN 22	6634	6645	-11	JUN 22	30318	30243	75.25
JUL 22	5706	4845	861	JUL 22	32052	31886	166.75
AUG 22	4653	4618	35	AUG 22	30737	30587	150.75
SEP 22	4601	4679	-78	SEP 22	29931	29856	75.25
OCT 22	7192	7078	114	OCT 22	34923	35147	-224.25
NOV 22	5529	5485	44	NOV 22	30726	30315	410.75
DEC 22	5328	5186	142	DEC 22	33013	32851	161.25
JAN 23	4533	4402	131	JAN 23	15087	15065	21.25
FEB 23	1115	1075	40	FEB 23	14034	14015	19.25
MAR 23	3086	2902	184	MAR 23	13868	13824	44.5
APR 23	1968	1853	115	APR 23	13163	13055	108.25
MAY 23	451	451	0	MAY 23	11984	11974	10

Source: CME, ICE



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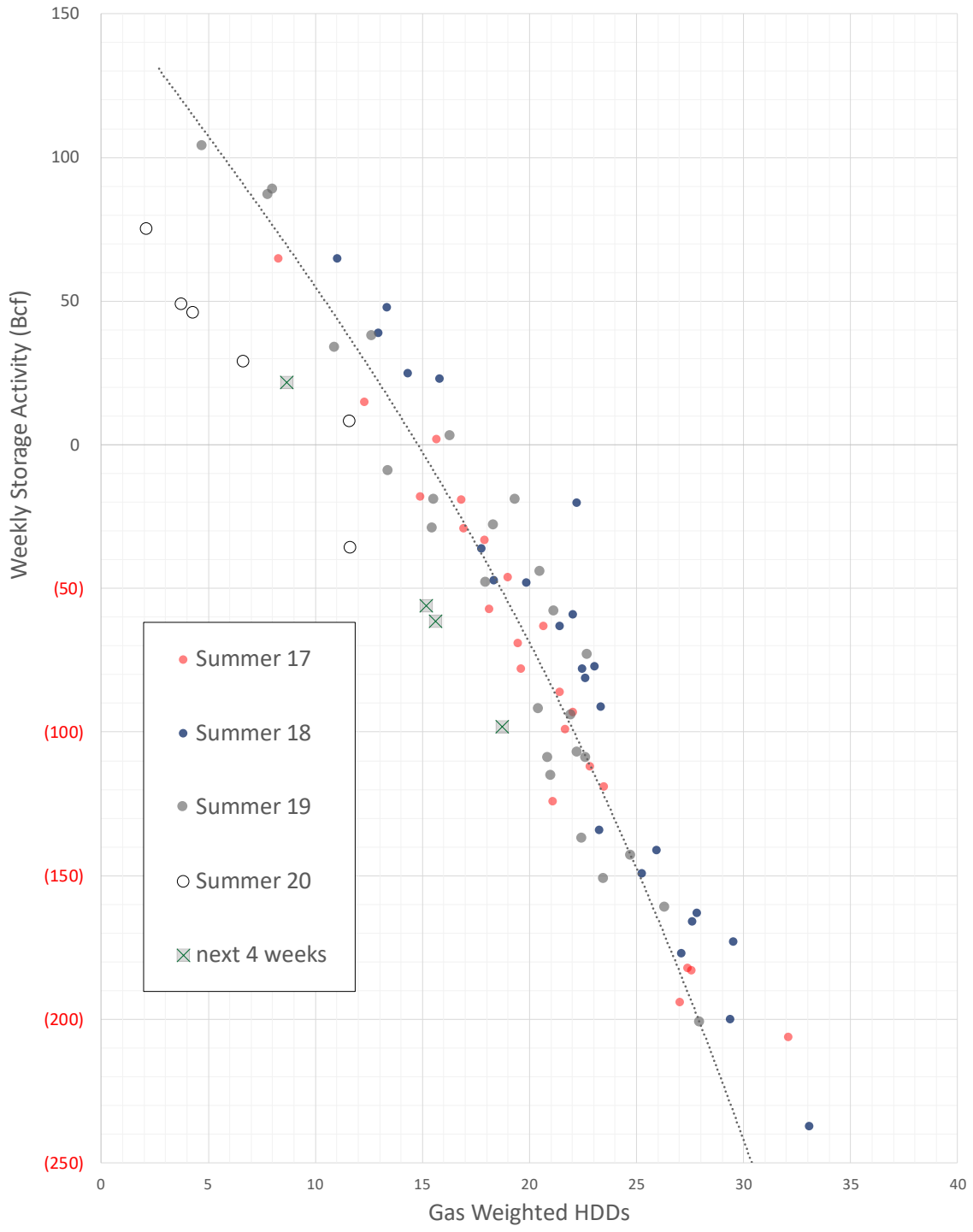
	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21
<b>Current Price</b>	<b>\$2.599</b>	<b>\$2.737</b>	<b>\$2.722</b>	<b>\$2.677</b>	<b>\$2.611</b>	<b>\$2.621</b>	<b>\$2.664</b>	<b>\$2.723</b>	<b>\$2.743</b>	<b>\$2.735</b>	<b>\$2.772</b>	<b>\$2.863</b>
Last Week	\$2.976	\$3.094	\$3.057	\$2.969	\$2.854	\$2.846	\$2.886	\$2.932	\$2.942	\$2.927	\$2.958	\$3.028
vs. Last Week	-\$0.377	-\$0.357	-\$0.335	-\$0.292	-\$0.243	-\$0.225	-\$0.222	-\$0.209	-\$0.199	-\$0.192	-\$0.186	-\$0.165
4 Weeks Ago	\$3.007	\$3.272	\$3.397	\$3.356	\$3.239	\$2.956	\$2.916	\$2.945	\$2.984	\$2.994	\$2.982	\$3.019
vs. 4 Weeks Ago	-\$0.408	-\$0.535	-\$0.675	-\$0.679	-\$0.628	-\$0.335	-\$0.252	-\$0.222	-\$0.241	-\$0.259	-\$0.210	-\$0.156
Last Year	\$2.567	\$2.622	\$2.569	\$2.462	\$2.293	\$2.280	\$2.323	\$2.370	\$2.382	\$2.370	\$2.397	\$2.467
vs. Last Year	\$0.032	\$0.115	\$0.153	\$0.215	\$0.318	\$0.341	\$0.341	\$0.353	\$0.361	\$0.365	\$0.375	\$0.396

	Units	Cash Settled	Prompt Settle	Cash to Prompt
AGT Citygate	\$/MMBtu	2.18	4.53	2.35
TETCO M3	\$/MMBtu	1.33	2.85	1.52
FGT Zone 3	\$/MMBtu	1.76	2.98	1.22
Zone 6 NY	\$/MMBtu	1.76	3.37	1.61
Chicago Citygate	\$/MMBtu	2.09	2.80	0.71
Michcon	\$/MMBtu	2.12	2.67	0.55
Columbia TCO Pool	\$/MMBtu	1.75	2.30	0.55
Ventura	\$/MMBtu	2.63	2.97	0.34
Rockies/Opal	\$/MMBtu	2.86	2.76	-0.10
El Paso Permian Basin	\$/MMBtu	0.98	2.62	1.64
Socal Citygate	\$/MMBtu	3.96	3.55	-0.41
Malin	\$/MMBtu	2.95	3.36	0.41
Houston Ship Channel	\$/MMBtu	2.35	2.91	0.56
Henry Hub Cash	\$/MMBtu	2.37	2.74	0.37
AECO Cash	C\$/GJ	2.03	2.28	0.25
Station2 Cash	C\$/GJ	1.86	4.25	2.39
Dawn Cash	C\$/GJ	2.10	2.74	0.64

Source: CME, Bloomberg

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jan21/Apr21	\$/MMBtu	-0.126	▲ 0.114	▲ 0.315	▲ 0.310
NatGas Mar21/Apr21	\$/MMBtu	-0.064	▲ 0.051	▼ -0.347	▼ -0.326
NatGas Oct21/Nov21	\$/MMBtu	0.091	▲ 0.021	▲ 0.029	▲ 0.022
NatGas Apr21/Oct21	\$/MMBtu	0.161	▲ 0.025	▼ -0.217	▼ -0.213
WTI Crude	\$/Bbl	41.54	▲ 0.420	▲ 0.900	▼ -17.040
Brent Crude	\$/Bbl	44.24	▲ 0.710	▲ 1.780	▼ -19.730
Fuel Oil, NY Harbour 1%	\$/Bbl	98.03	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	126.74	▲ 3.410	▲ 10.670	▼ -67.730
Propane, Mt. Bel	cents/Gallon	0.55	▼ -0.015	▲ 0.022	▲ 0.014
Ethane, Mt. Bel	cents/Gallon	0.22	▼ -0.003	▲ 0.002	▲ 0.020
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	▼ -4.500
Coal, ILB	\$/MMBtu	1.32			

### Winter Storage Forecast



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