

	Current	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$ 2.45	▲ \$ 0.04	▼ \$ (0.17)

	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 45.58	▼ \$ (0.18)	▼ \$ (0.1)

	Current	Δ from YD	Δ from 7D Avg
Brent Prompt	\$ 48.63	▼ \$ (0.16)	▼ \$ (0.1)

### Page Menu

[Short-term Weather Model Outlooks](#)

[Lower 48 Component Models](#)

[Regional S/D Models Storage Projection](#)

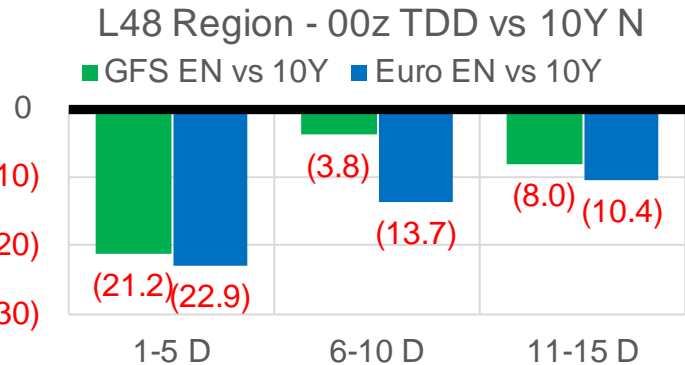
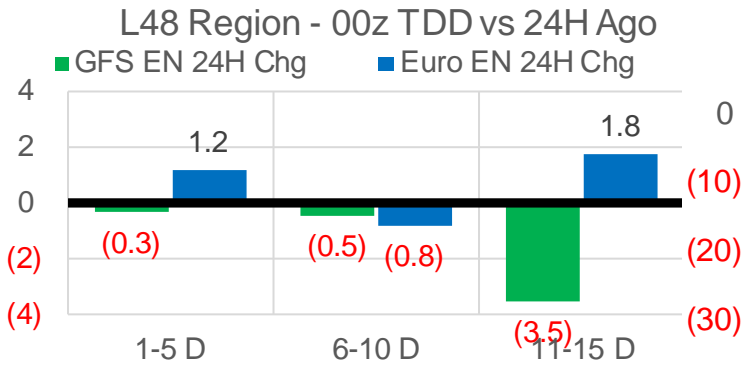
[Weather Model Storage Projection](#)

[Supply – Demand Trends](#)

[Nat Gas Options Volume and Open Interest](#)

[Nat Gas Futures Open Interest](#)

[Price Summary](#)



	Current	Δ from YD	Δ from 7D Avg
US Dry Production	90.5	▼ -0.17	▼ -0.46

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	29.9	▲ 0.13	▲ 1.75

	Current	Δ from YD	Δ from 7D Avg
US ResComm	39.2	▼ -1.36	▲ 0.61

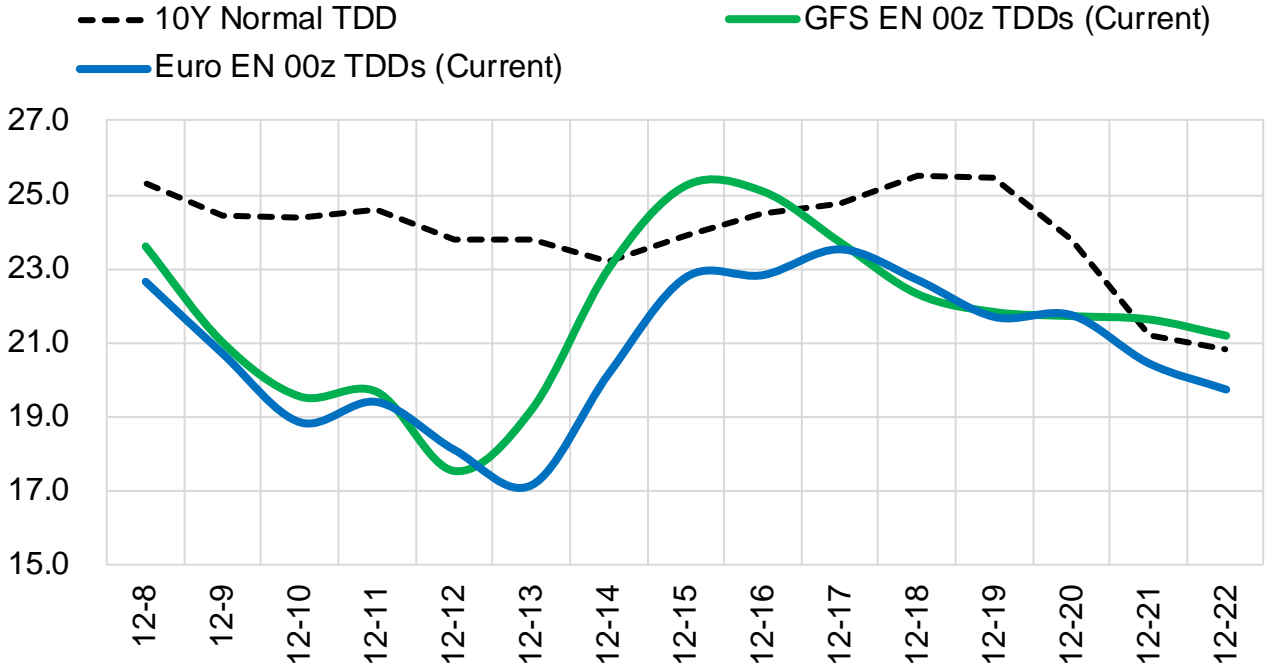
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	5.9	▼ -0.54	▼ -0.09

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	11.2	▲ 0.27	▲ 0.25

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.3	▲ 0.12	▼ -0.04

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

#### L48 Region



Source: WSI , Bloomberg

## Lower 48 Component Models

### Daily Balances

	2-Dec	3-Dec	4-Dec	5-Dec	6-Dec	7-Dec	8-Dec	DoD	vs. 7D
<b>Lower 48 Dry Production</b>	<b>92.0</b>	<b>91.1</b>	<b>90.6</b>	<b>90.7</b>	<b>90.7</b>	<b>90.7</b>	<b>90.5</b>	▼ -0.2	▼ -0.4
<b>Canadian Imports</b>	<b>5.9</b>	<b>6.3</b>	<b>5.7</b>	<b>5.9</b>	<b>6.2</b>	<b>6.5</b>	<b>5.9</b>	▼ -0.5	▼ -0.1
L48 Power	29.0	27.8	27.6	26.4	26.4	29.7	29.9	▲ 0.1	▲ 2.0
L48 Residential & Commercial	39.4	38.2	34.7	38.2	39.6	40.6	39.2	▼ -1.4	▲ 0.8
L48 Industrial	23.2	22.6	21.7	21.5	21.2	21.3	21.4	▲ 0.1	▼ -0.5
L48 Lease and Plant Fuel	5.1	5.0	5.0	5.0	5.0	5.0	5.0	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	3.1	3.0	2.8	3.0	3.0	3.2	3.2	▼ -0.1	▲ 0.1
<b>L48 Regional Gas Consumption</b>	<b>99.9</b>	<b>96.6</b>	<b>91.8</b>	<b>94.1</b>	<b>95.3</b>	<b>99.9</b>	<b>98.7</b>	▼ -1.2	▲ 2.4
<b>Net LNG Delivered</b>	<b>10.77</b>	<b>10.48</b>	<b>11.28</b>	<b>11.48</b>	<b>11.15</b>	<b>10.97</b>	<b>11.24</b>	▲ 0.3	▲ 0.2
<b>Total Mexican Exports</b>	<b>6.6</b>	<b>6.4</b>	<b>6.4</b>	<b>6.1</b>	<b>6.1</b>	<b>6.2</b>	<b>6.3</b>	▲ 0.1	▼ 0.0
<b>Implied Daily Storage Activity</b>	<b>-19.3</b>	<b>-16.1</b>	<b>-13.2</b>	<b>-15.2</b>	<b>-15.6</b>	<b>-19.9</b>	<b>-19.8</b>		
<b>EIA Reported Daily Storage Activity</b>									
<b>Daily Model Error</b>									

### EIA Storage Week Balances

	30-Oct	6-Nov	13-Nov	20-Nov	27-Nov	4-Dec	WoW	vs. 4W
<b>Lower 48 Dry Production</b>	<b>87.4</b>	<b>89.6</b>	<b>88.2</b>	<b>90.9</b>	<b>91.6</b>	<b>91.6</b>	▼ -0.1	▲ 1.5
<b>Canadian Imports</b>	<b>4.8</b>	<b>4.9</b>	<b>3.9</b>	<b>5.1</b>	<b>4.5</b>	<b>5.3</b>	▲ 0.8	▲ 0.7
L48 Power	28.0	24.7	24.4	24.7	24.8	26.5	▲ 1.7	▲ 1.8
L48 Residential & Commercial	22.7	23.1	16.8	27.2	26.7	34.4	▲ 7.7	▲ 10.9
L48 Industrial	24.1	23.0	24.0	23.3	22.1	22.9	▲ 0.8	▼ -0.2
L48 Lease and Plant Fuel	4.8	4.9	4.9	5.0	5.1	5.1	▲ 0.0	▲ 0.1
L48 Pipeline Distribution	2.5	2.3	1.9	2.4	2.4	2.8	▲ 0.4	▲ 0.6
<b>L48 Regional Gas Consumption</b>	<b>82.1</b>	<b>78.0</b>	<b>72.1</b>	<b>82.6</b>	<b>81.0</b>	<b>91.6</b>	▲ 10.6	▲ 13.2
<b>Net LNG Exports</b>	<b>9.2</b>	<b>10.2</b>	<b>10.4</b>	<b>10.2</b>	<b>9.7</b>	<b>10.4</b>	▲ 0.7	▲ 0.3
<b>Total Mexican Exports</b>	<b>6.2</b>	<b>6.0</b>	<b>6.3</b>	<b>6.1</b>	<b>6.3</b>	<b>6.4</b>	▲ 0.1	▲ 0.2
<b>Implied Daily Storage Activity</b>	<b>-5.3</b>	<b>0.3</b>	<b>3.3</b>	<b>-2.9</b>	<b>-0.9</b>	<b>-11.5</b>	<b>-10.6</b>	
<b>EIA Reported Daily Storage Activity</b>	<b>-5.1</b>	<b>1.1</b>	<b>4.4</b>	<b>-2.6</b>	<b>-0.1</b>			
<b>Daily Model Error</b>	<b>-0.1</b>	<b>-0.8</b>	<b>-1.1</b>	<b>-0.3</b>	<b>-0.8</b>			

### Monthly Balances

	2Yr Ago Dec-18	LY Dec-19	Aug-20	Sep-20	Oct-20	Nov-20	MTD Dec-20	MoM	vs. LY
<b>Lower 48 Dry Production</b>	<b>87.5</b>	<b>95.1</b>	<b>88.6</b>	<b>87.8</b>	<b>87.5</b>	<b>90.4</b>	<b>90.9</b>	▲ 0.5	▼ -4.2
<b>Canadian Imports</b>	<b>4.8</b>	<b>4.5</b>	<b>4.9</b>	<b>3.8</b>	<b>4.3</b>	<b>4.6</b>	<b>6.0</b>	▲ 1.4	▲ 1.5
L48 Power	24.4	28.9	41.0	34.1	29.4	24.6	28.3	▲ 3.7	▼ -0.5
L48 Residential & Commercial	39.3	39.1	7.7	8.8	16.2	24.2	38.7	▲ 14.5	▼ -0.4
L48 Industrial	22.4	24.4	20.3	19.2	22.3	23.0	22.1	▼ -0.9	▼ -2.3
L48 Lease and Plant Fuel	4.9	5.3	4.9	4.9	4.8	5.0	5.0	▲ 0.0	▼ -0.2
L48 Pipeline Distribution	2.8	3.1	2.4	2.2	2.2	2.3	3.1	▲ 0.8	▼ 0.0
<b>L48 Regional Gas Consumption</b>	<b>93.9</b>	<b>100.7</b>	<b>76.3</b>	<b>69.1</b>	<b>74.9</b>	<b>79.1</b>	<b>97.2</b>	▲ 18.1	▼ -3.5
<b>Net LNG Exports</b>	<b>4.5</b>	<b>7.8</b>	<b>4.0</b>	<b>5.9</b>	<b>8.0</b>	<b>10.1</b>	<b>11.0</b>	▲ 0.9	▲ 3.2
<b>Total Mexican Exports</b>	<b>4.5</b>	<b>5.0</b>	<b>6.3</b>	<b>6.4</b>	<b>6.2</b>	<b>6.2</b>	<b>6.3</b>	▲ 0.1	▲ 1.3
<b>Implied Daily Storage Activity</b>	<b>-10.7</b>	<b>-13.9</b>	<b>6.8</b>	<b>10.2</b>	<b>2.7</b>	<b>-0.5</b>	<b>-17.6</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 4-Dec

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-11.8	1.0	-10.8	-76
East	-3.9	2.0	-1.9	-13
Midwest	-4.5	0.0	-4.5	-31
Mountain	2.8	-3.5	-0.7	-5
South Central	-5.9	2.6	-3.3	-23
Pacific	-0.3	-0.2	-0.4	-3

\*Adjustment Factor is calculated based on historical regional deltas

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

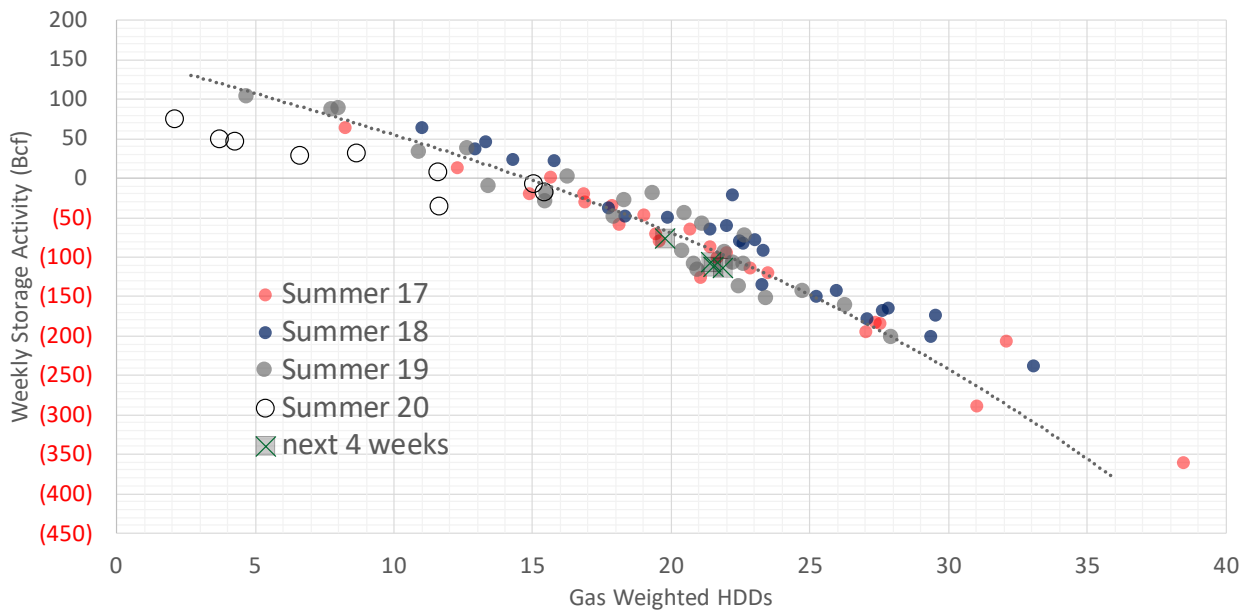


### Weather Model Storage Projection

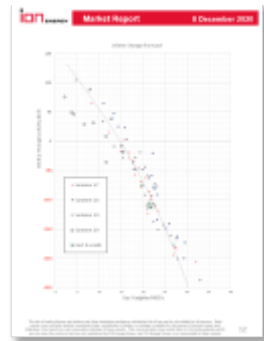
Next report  
and beyond

Week Ending	Temp	Week Storage Projection
04-Dec	19.8	-76
11-Dec	21.6	-112
18-Dec	21.5	-106
25-Dec	21.9	-113

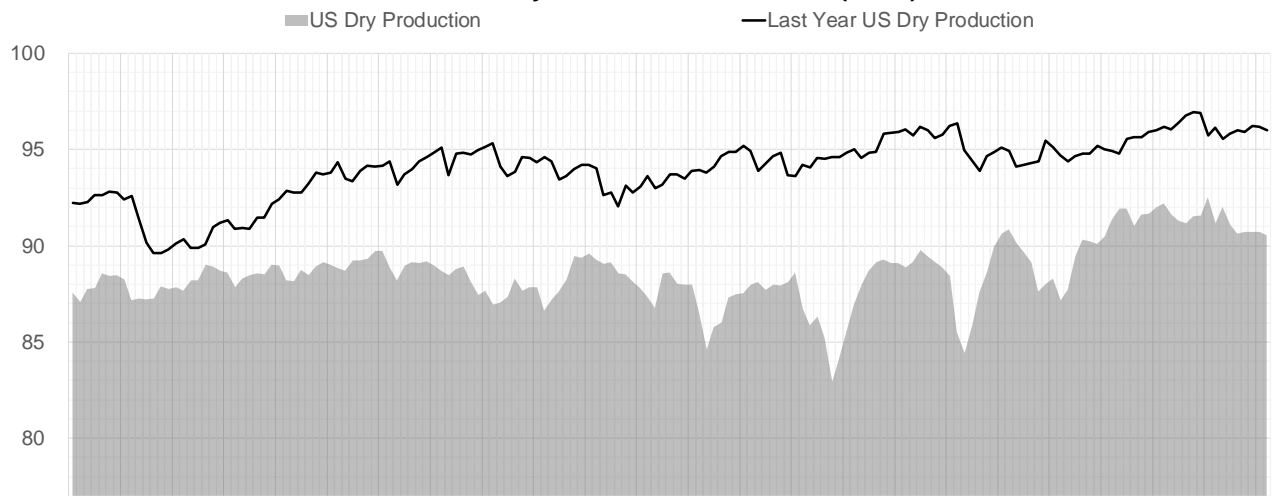
### Winter Storage Forecast



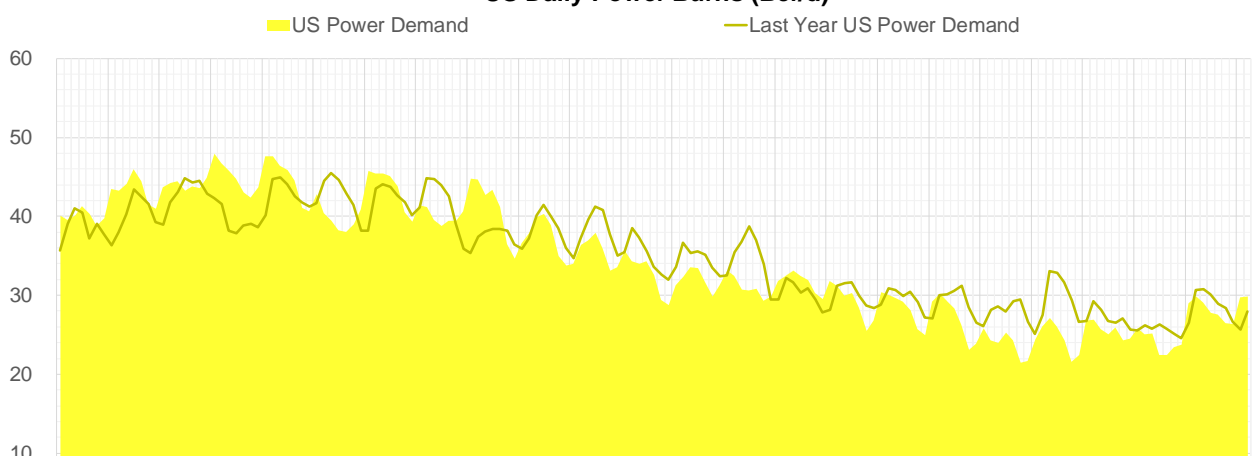
Go to larger image



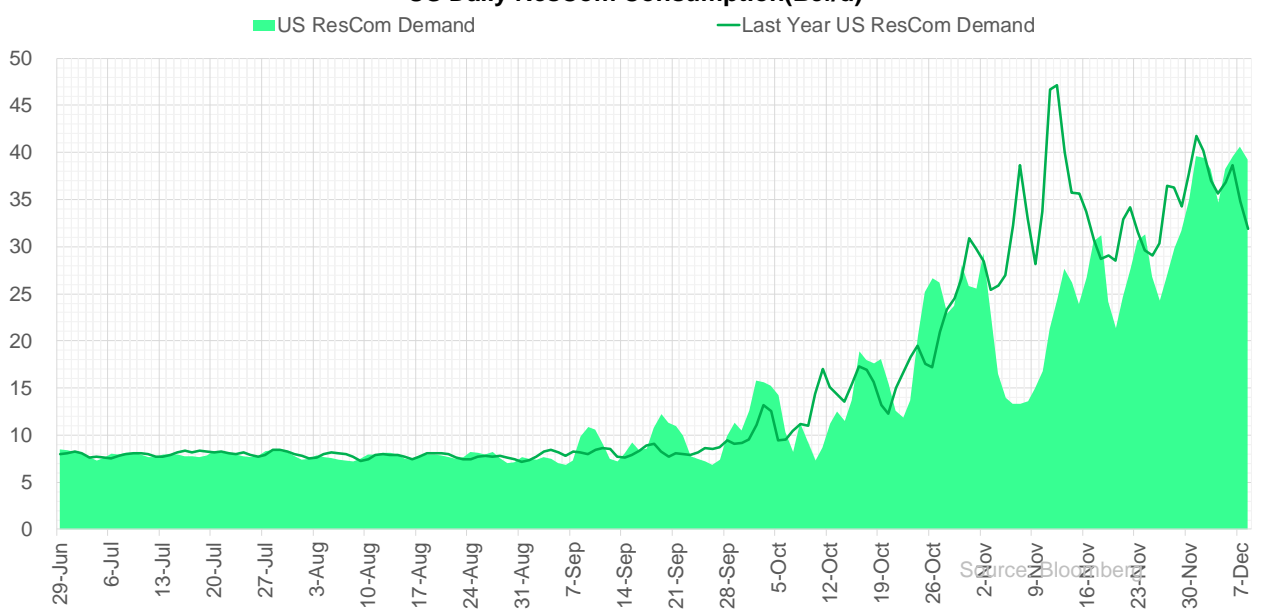
### Supply – Demand Trends US Dry Natural Gas Production (Bcf/d)



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

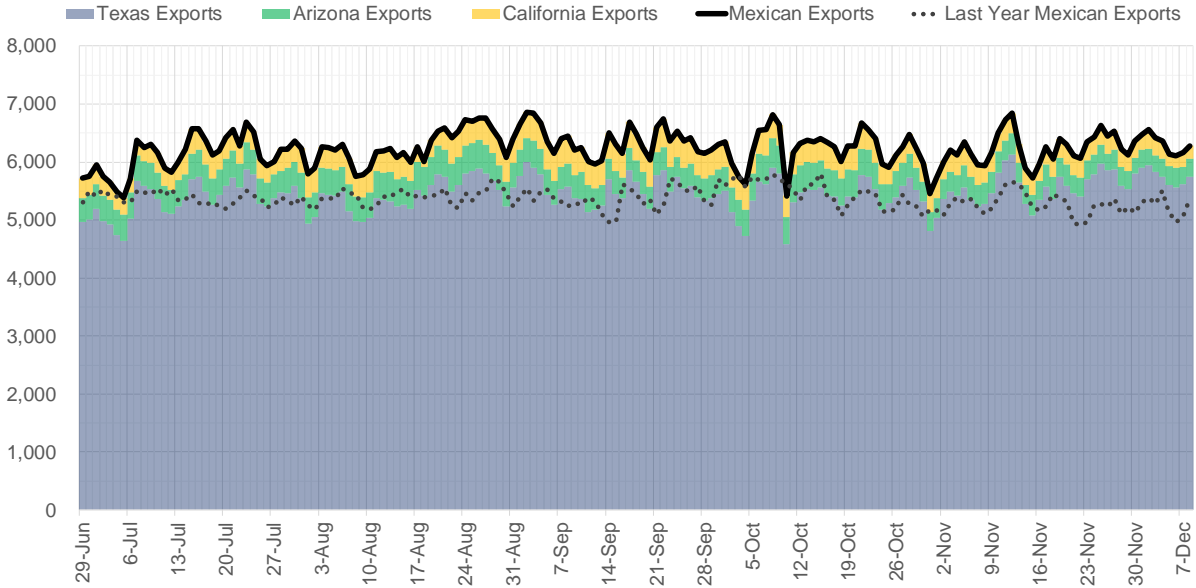


### US Daily ResCom Consumption (Bcf/d)

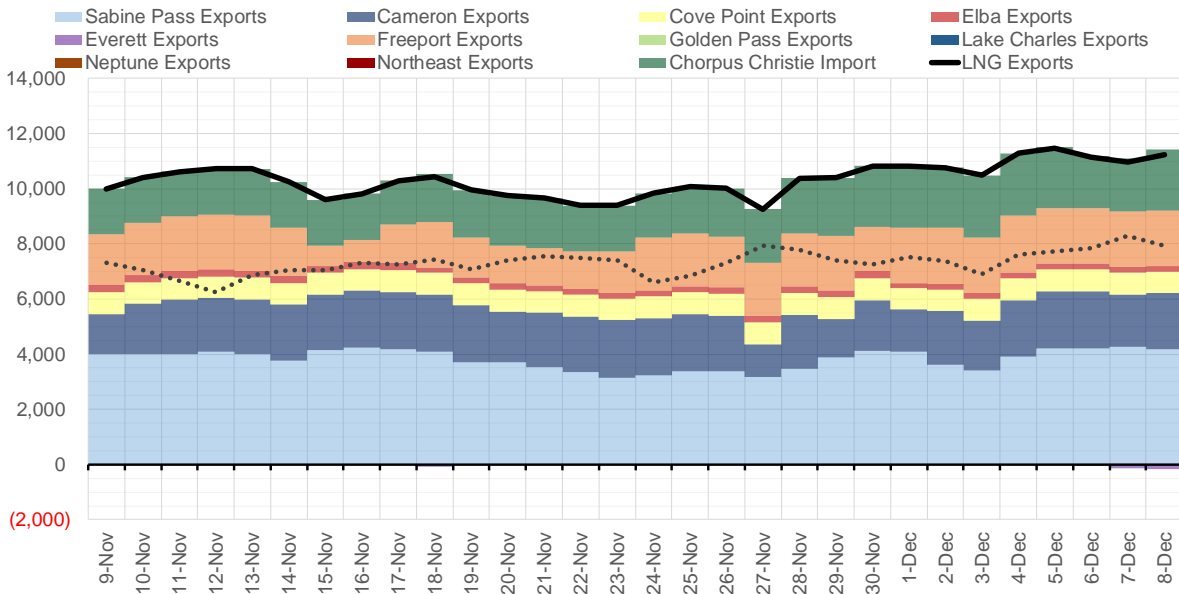


Source: Bloomberg

### Mexican Exports (MMcf/d)



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



Source: Bloomberg

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.

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

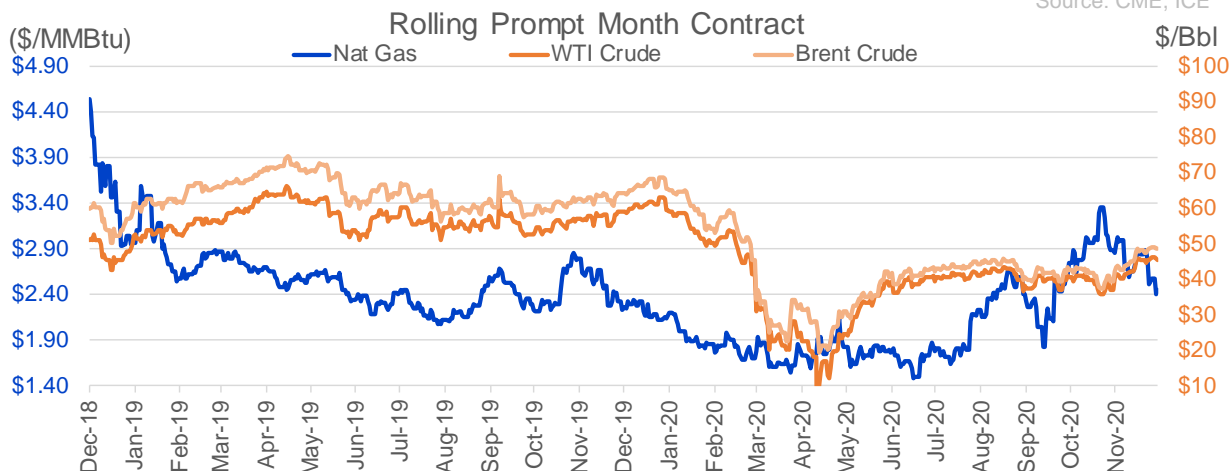
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
1	2021	C	3.00	7611	3	2021	P	2.00	42579
1	2021	P	2.00	6780	1	2021	C	3.50	38165
1	2021	P	2.25	5552	3	2021	C	5.00	34547
2	2021	P	1.80	5009	3	2021	C	4.00	33977
3	2021	C	3.00	4703	1	2021	P	2.50	31993
4	2021	C	2.90	4200	3	2021	C	6.00	31789
4	2021	C	2.50	4073	4	2021	C	3.50	30843
2	2021	P	2.00	3988	4	2021	C	4.00	29591
3	2021	C	5.00	3903	3	2021	C	3.25	27961
3	2021	C	6.00	3700	10	2021	C	4.00	27961
4	2021	C	3.00	3700	1	2021	C	4.50	27889
1	2021	C	3.50	3374	1	2021	C	3.00	27190
1	2021	C	2.65	3264	3	2021	C	3.00	26731
2	2021	P	2.20	2984	1	2021	C	4.00	25729
1	2021	C	2.75	2538	1	2021	C	5.00	25395
1	2021	P	2.50	2442	3	2021	C	4.50	25044
3	2021	C	2.50	2437	2	2021	P	2.25	24598
6	2021	C	3.25	1950	10	2021	C	3.25	24095
1	2021	C	2.50	1851	3	2021	C	7.00	22907
4	2021	C	3.50	1829	1	2021	C	3.75	22308
3	2021	C	3.50	1683	3	2021	P	2.50	21894
2	2021	P	2.25	1646	3	2021	C	3.50	21571
1	2021	P	2.20	1626	1	2021	C	6.00	21138
10	2021	C	4.00	1600	1	2021	P	2.25	20989
6	2021	C	2.50	1570	1	2021	P	2.00	20435
4	2021	C	4.00	1550	2	2021	C	3.50	20241
2	2021	C	4.25	1526	8	2021	C	4.00	19203
4	2021	P	2.25	1526	2	2021	C	4.00	19043
2	2021	C	2.60	1285	4	2021	C	5.00	18953
4	2021	P	2.00	1270	4	2021	C	2.75	18850
1	2021	P	2.10	1264	2	2021	P	2.50	18759
2	2021	C	3.50	1205	10	2021	C	5.00	18575
1	2021	C	3.25	1167	8	2021	P	2.25	18392
2	2021	C	2.90	1136	4	2021	C	3.25	17969
1	2021	C	4.00	1093	5	2021	C	3.00	17941
1	2021	C	3.40	1060	4	2021	C	3.00	17648
4	2021	C	2.75	1045	2	2021	C	5.00	17343
6	2021	C	3.00	1045	1	2021	C	3.25	16657
2	2021	C	4.00	1023	5	2021	C	3.50	15603
4	2021	C	5.00	1000	2	2021	C	3.00	15550
10	2021	C	3.50	1000	4	2021	P	2.00	15030
10	2021	C	5.00	1000	2	2021	P	2.00	15004
1	2021	C	2.70	983	6	2021	C	4.00	14671
5	2021	C	2.75	971	1	2021	P	3.00	14580
5	2021	C	3.25	960	1	2021	C	2.75	14503
1	2021	C	2.60	950	1	2021	P	2.75	14347
3	2021	P	2.00	929	10	2021	C	3.00	14094
5	2021	C	3.00	925	2	2021	C	4.50	13774
1	2021	C	2.90	848	1	2021	C	7.00	13527
					5	2021	C	3.25	13296

Source: CME, ICE



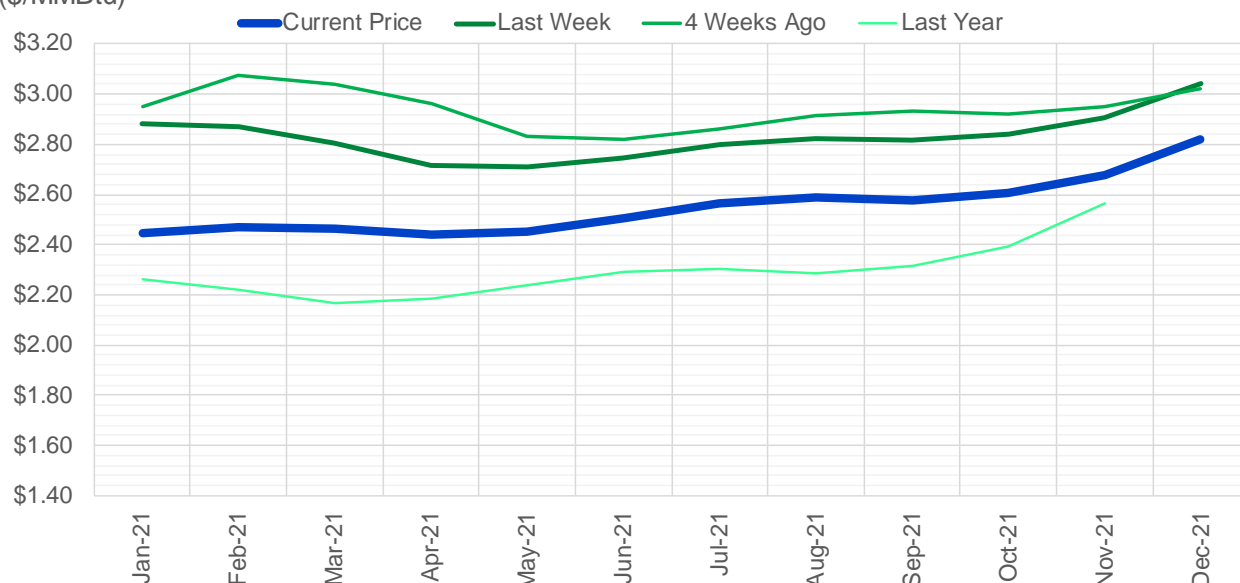
## Nat Gas Futures Open Interest CME, and ICE Combined

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	261021	291107	-30086	JAN 21	95551	98244	-2693
FEB 21	107072	97934	9138	FEB 21	71592	72084	-491.5
MAR 21	193007	189096	3911	MAR 21	95584	94659	925.25
APR 21	91904	88732	3172	APR 21	80367	80987	-620.25
MAY 21	58215	55984	2231	MAY 21	73444	72711	733.5
JUN 21	37879	36713	1166	JUN 21	61273	60832	440.75
JUL 21	30370	31386	-1016	JUL 21	62501	62171	330.75
AUG 21	27859	26905	954	AUG 21	65351	65099	252.75
SEP 21	40472	39617	855	SEP 21	59803	59483	319.5
OCT 21	91374	91042	332	OCT 21	74410	73575	835
NOV 21	42123	41802	321	NOV 21	50487	50077	410
DEC 21	37461	36878	583	DEC 21	50186	50000	185.5
JAN 22	38778	38206	572	JAN 22	48715	47486	1229
FEB 22	25319	24685	634	FEB 22	38321	38145	175.75
MAR 22	26958	26767	191	MAR 22	39435	39536	-101
APR 22	24427	24000	427	APR 22	38835	39223	-388.25
MAY 22	12680	13032	-352	MAY 22	32566	32442	124.25
JUN 22	6458	6790	-332	JUN 22	30893	30867	25.75
JUL 22	5912	5903	9	JUL 22	32755	32640	115
AUG 22	5091	5108	-17	AUG 22	31683	31498	185.25
SEP 22	4771	4771	0	SEP 22	31121	31112	9.5
OCT 22	8237	8232	5	OCT 22	36735	36588	147.25
NOV 22	6214	6217	-3	NOV 22	31583	31640	-57.25
DEC 22	6718	6730	-12	DEC 22	33944	34016	-72.25
JAN 23	4538	4593	-55	JAN 23	15786	15856	-69.5
FEB 23	1306	1294	12	FEB 23	14441	14527	-86
MAR 23	2576	2574	2	MAR 23	13988	14035	-47.25
APR 23	2283	2283	0	APR 23	13360	13340	20.75
MAY 23	652	652	0	MAY 23	12475	12454	21.25
JUN 23	679	679	0	JUN 23	12490	12475	15



(\$/MMBtu)

### Nat Gas Term Structure



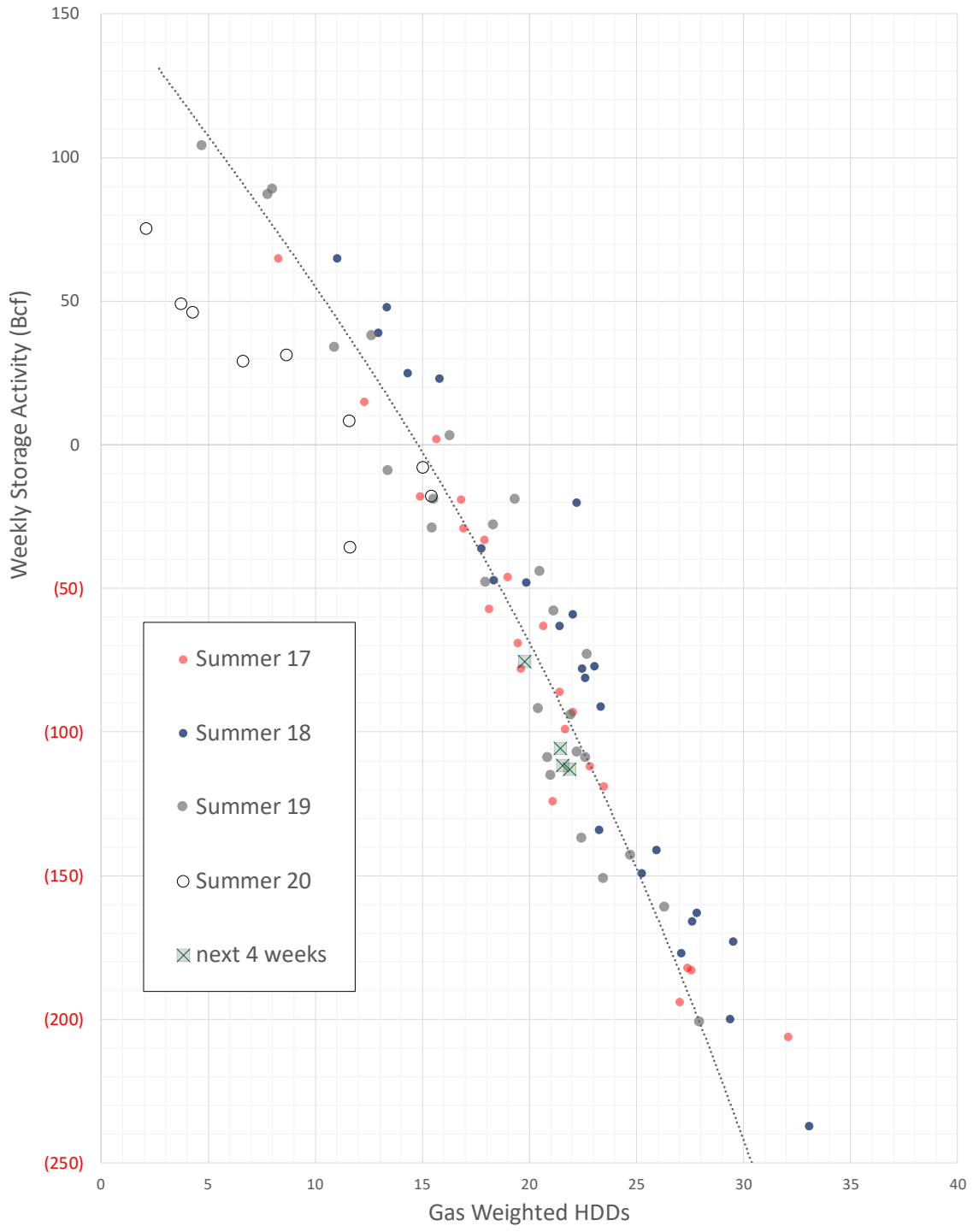
	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
<b>Current Price</b>	<b>\$2.447</b>	<b>\$2.471</b>	<b>\$2.466</b>	<b>\$2.442</b>	<b>\$2.452</b>	<b>\$2.506</b>	<b>\$2.566</b>	<b>\$2.588</b>	<b>\$2.574</b>	<b>\$2.606</b>	<b>\$2.680</b>	<b>\$2.817</b>
Last Week	\$2.880	\$2.868	\$2.806	\$2.717	\$2.712	\$2.748	\$2.801	\$2.822	\$2.815	\$2.841	\$2.904	\$3.041
vs. Last Week	-\$0.433	-\$0.397	-\$0.340	-\$0.275	-\$0.260	-\$0.242	-\$0.235	-\$0.234	-\$0.241	-\$0.235	-\$0.224	-\$0.224
4 Weeks Ago	\$2.949	\$3.073	\$3.041	\$2.959	\$2.833	\$2.820	\$2.864	\$2.917	\$2.931	\$2.919	\$2.953	\$3.019
vs. 4 Weeks Ago	-\$0.502	-\$0.602	-\$0.575	-\$0.517	-\$0.381	-\$0.314	-\$0.298	-\$0.329	-\$0.357	-\$0.313	-\$0.273	-\$0.202
Last Year	\$2.264	\$2.263	\$2.218	\$2.165	\$2.186	\$2.237	\$2.290	\$2.303	\$2.289	\$2.317	\$2.391	\$2.564
vs. Last Year	\$0.183	\$0.208	\$0.248	\$0.277	\$0.266	\$0.269	\$0.276	\$0.285	\$0.285	\$0.289	\$0.289	\$0.253

	Units	Cash Settled	Prompt Settle	Cash to Prompt
AGT Citygate	\$/MMBtu	2.91	5.66	2.75
TETCO M3	\$/MMBtu	2.02	3.89	1.87
FGT Zone 3	\$/MMBtu	2.37	2.86	0.49
Zone 6 NY	\$/MMBtu	2.37	4.61	2.24
Chicago Citygate	\$/MMBtu	2.19	2.79	0.60
Michcon	\$/MMBtu	2.16	2.57	0.41
Columbia TCO Pool	\$/MMBtu	1.95	2.34	0.39
Ventura	\$/MMBtu	2.15	3.08	0.93
Rockies/Opal	\$/MMBtu	3.00	2.66	-0.34
El Paso Permian Basin	\$/MMBtu	2.14	2.59	0.45
Socal Citygate	\$/MMBtu	4.37	3.45	-0.92
Malin	\$/MMBtu	2.97	3.20	0.23
Houston Ship Channel	\$/MMBtu	2.39	2.82	0.43
Henry Hub Cash	\$/MMBtu	2.38	2.64	0.26
AECO Cash	C\$/GJ	1.76	2.08	0.32
Station2 Cash	C\$/GJ	1.78	3.68	1.90
Dawn Cash	C\$/GJ	2.20	2.65	0.45

Source: CME, Bloomberg

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jan21/Apr21	\$/MMBtu	-0.005	▲ 0.158	▲ 0.235	▲ 0.372
NatGas Mar21/Apr21	\$/MMBtu	-0.024	▲ 0.065	▼ -0.150	▼ -0.266
NatGas Oct21/Nov21	\$/MMBtu	0.074	▲ 0.011	▲ 0.008	▲ 0.006
NatGas Apr21/Oct21	\$/MMBtu	0.164	▲ 0.125	▲ 0.044	▼ -0.125
WTI Crude	\$/Bbl	45.58	▲ 1.030	▲ 4.220	▼ -13.660
Brent Crude	\$/Bbl	48.63	▲ 1.210	▲ 5.020	▼ -15.710
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	139.95	▲ 5.220	▲ 14.700	▼ -56.600
Propane, Mt. Bel	cents/Gallon	0.60	▲ 0.030	▲ 0.043	▲ 0.079
Ethane, Mt. Bel	cents/Gallon	0.18	▼ -0.014	▼ -0.037	▲ 0.013
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



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.