

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.

0.06

Exports

6.2

-0.17

11.0

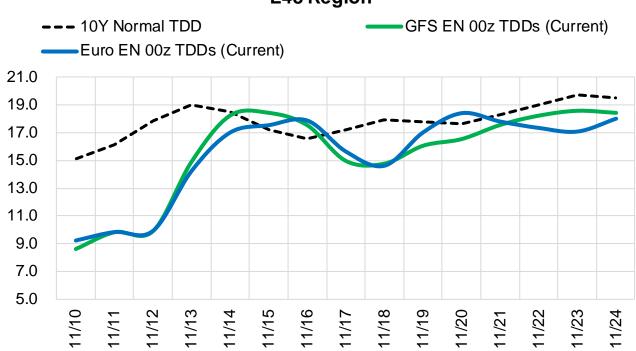
Exports

-0.31

-0.04



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



L48 Region

## Vs. 10Y Normal



Source: WSI, Bloomberg

# **Market Report**

## 10 November 2021

### **Daily Balances**

	4-Nov	5-Nov	6-Nov	7-Nov	8-Nov	9-Nov	10-Nov	DoD	vs.7D
Lower 48 Dry Production	95.5	95.2	96.8	95.7	96.3	94.9	95.3	<b>0.4</b>	<b>v</b> -0.5
Canadian Imports	5.5	5.3	5.5	5.5	5.6	5.1	4.3	<b>-0.8</b>	▼-1.1
L48 Power	32.5	29.1	26.5	25.8	27.0	27.4	27.6	<b>a</b> 0.2	▼ -0.4
L48 Residential & Commercial	30.6	29.4	26.9	24.0	21.1	20.2	20.0	▼ -0.2	▼ -5.4
L48 Industrial	23.1	23.0	22.5	22.0	21.9	21.6	21.7	<b>0</b> .0	▼ -0.7
L48 Lease and Plant Fuel	5.2	5.2	5.3	5.2	5.2	5.2	5.1	▼ 0.0	▼ -0.1
L48 Pipeline Distribution	3.4	3.1	2.8	2.7	2.6	2.5	2.5	▼ 0.0	<b>T</b> -0.3
L48 Regional Gas Consumption	94.8	89.7	84.0	79.7	77.8	77.0	76.9	<b>T-0.1</b>	<b>T</b> -6.9
Net LNG Delivered	10.68	10.14	11.38	11.62	11.39	11.31	11.00	<b>-0.3</b>	<b>T-0.1</b>
Total Mexican Exports	6.3	6.1	6.1	5.9	6.2	6.3	6.2	<b>-0.2</b>	▼ 0.0
Implied Daily Storage Activity EIA Reported Daily Storage Activity	-10.8	-5.4	0.8	4.0	6.4	5.4	5.5		

Lower 48 Component Models

Daily Model Error

### **EIA Storage Week Balances**

	1-Oct	8-Oct	15-Oct	22-Oct	29-Oct	5-Nov	WoW	vs. 4W
Lower 48 Dry Production	93.8	93.3	93.0	92.8	94.0	95.0	<b>0.9</b>	<b>1.7</b>
Canadian Imports	5.7	5.3	5.0	5.6	5.6	5.5	<b>T-0.1</b>	<b>0.1</b>
L48 Power	30.3	32.9	31.7	29.0	29.0	29.5	<b>0</b> .4	▼-1.2
L48 Residential & Commercial	8.4	8.1	9.5	13.9	17.7	24.1	<b>6</b> .4	<b>11.7</b>
L48 Industrial	20.6	22.3	19.9	18.8	18.9	21.6	<b>2.8</b>	<b>1</b> .7
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.2	▲ 0.0	<b>—</b> 0.1
L48 Pipeline Distribution	2.1	2.2	2.2	2.3	2.5	2.9	<b>0</b> .4	<b>a</b> 0.6
L48 Regional Gas Consumption	66.5	70.6	68.4	69.1	73.2	83.2	<b>10.0</b>	<b>12.9</b>
Net LNG Exports	10.3	9.9	10.7	10.8	10.8	10.9	<b>0.1</b>	<b>0.3</b>
Total Mexican Exports	6.7	6.6	6.6	6.6	6.9	6.1	▼ -0.8	<b>-0.6</b>
Implied Daily Storage Activity	16.0	11.6	12.2	12.0	8.7	0.3	-8.4	
EIA Reported Daily Storage Activity	16.9	11.6	13.1	12.4	9.0			
Daily Model Error	-0.8	0.0	-0.9	-0.5	-0.3			

#### **Monthly Balances**

	2Yr Ago	LY					MTD		
	Nov-19	Nov-20	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	МоМ	vs. LY
Lower 48 Dry Production	96.2	91.1	93.6	94.1	93.0	93.4	95.3	<b>1.9</b>	<b>4.2</b>
Canadian Imports	4.5	4.6	5.2	5.1	5.1	5.4	5.3	<b>▼ -0.1</b>	<b>0.7</b>
L48 Power	27.5	25.7	39.4	40.1	33.1	30.3	28.9	<b>T</b> -1.4	▲ 3.2
L48 Residential & Commercial	32.8	24.4	8.1	7.8	7.7	12.9	25.5	<b>12.6</b>	<b>A</b> 1.1
L48 Industrial	24.9	22.5	21.2	21.7	20.8	20.0	22.3	<b>2</b> .3	<b>T</b> -0.2
L48 Lease and Plant Fuel	5.2	5.0	5.1	5.1	5.1	5.1	5.2	<b>A</b> 0.1	<b>a</b> 0.2
L48 Pipeline Distribution	3.0	2.7	2.5	2.6	2.2	2.3	2.9	<b>0.6</b>	<b>a</b> 0.2
L48 Regional Gas Consumption	93.5	80.2	76.3	77.3	68.9	70.6	84.8	<b>14.2</b>	<b>4.6</b>
Net LNG Exports	7.2	10.1	10.8	10.5	10.3	10.6	11.0	<b>0.4</b>	<b>0.9</b>
Total Mexican Exports	5.2	6.1	7.1	6.9	6.7	6.6	6.0	▼ -0.6	▼ 0.0
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	-5.1	-0.7	4.6	4.5	12.1	11.0	-1.1		

Source: Bloomberg, analytix.ai

# **Daily** Average Generation Data

### Nuclear Generation Daily Average - GWh (NRC)

ENERGY

	2-Nov	3-Nov	4-Nov	5-Nov	6-Nov	7-Nov	8-Nov	DoD	vs. 7D
NRC Nuclear Daily Output	72.1	73.4	74.9	76.0	77.4	78.8	80.6	1.7	5.1
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0
NRC Nuclear Outage	32.8	31.5	29.9	28.9	27.5	26.1	24.3	-1.7	-5.1
NRC % Nuclear Cap Utilization	73.3	74.6	76.2	77.3	78.7	80.2	81.9	1.8	5.2

### Wind Generation Daily Average - MWh (EIA)

	2-Nov	3-Nov	4-Nov	5-Nov	6-Nov	7-Nov	8-Nov	DoD	vs.7D
CALI Wind	1586	362	2356	893	2071	3302	1231	-2071	-530
TEXAS Wind	7823	7268	4582	7879	9903	15300	16548	1249	7756
US Wind	24572	17608	27034	41258	46275	60522	54674	-5849	18462

#### Generation Daily Average - MWh (EIA)

	2-Nov	3-Nov	4-Nov	5-Nov	6-Nov	7-Nov	8-Nov	DoD	vs.7D
US Wind	24572	17608	27034	41258	46275	60522	54674	-5849	18462
US Solar	8400	8966	8478	9436	9901	9545	11172	1627	2051
US Petroleum	3943	4211	3793	3573	2434	1810	2499	690	-794
US Other	9473	9998	10656	10142	8545	7714	8074	360	-1347
US Coal	85342	89168	87398	83058	76875	71569	78366	6797	-3869
US Nuke	75975	77899	79304	80587	81804	83574	84844	1270	4987
US Hydro	27767	27328	26709	25857	22598	23092	26316	3225	758
US Gas	174909	183421	180948	168722	148142	124072	137672	13600	-25697

# See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

# Storage Week Average Generation Data

### Nuclear Generation Weekly Average - GWh (NRC)

	1-Oct	8-Oct	15-Oct	22-Oct	29-Oct	5-Nov	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	85.1	82.1	76.5	73.6	71.6	72.2	0.6	-0.1
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	19.8	22.7	28.3	31.2	33.3	32.7	-0.6	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

### Wind Generation Weekly Average - MWh (EIA)

	1-Oct	8-Oct	15-Oct	22-Oct	29-Oct	5-Nov	WoW	WoW Bcf/d Impact
CALI Wind	2467	1099	2400	1270	2314	1669	-645	0.1
TEXAS Wind	10364	4890	15396	10729	15462	8472	-6990	1.3
US Wind	43478	20468	49918	43721	49870	32103	-17767	3.2
					6149.0			
					14%			

### Generation Weekly Average - MWh (EIA)

								WoW
	1-Oct	8-Oct	15-Oct	22-Oct	29-Oct	5-Nov	WoW	Bcf/d
								Impact
US Wind	43478	20468	49918	43721	49870	32103	-17767	3.2
US Solar	12957	11294	10530	12209	10138	9781	-357	0.1
US Petroleum	2712	3901	3224	3092	2815	3517	702	<b>-0.1</b>
US Other	8709	10973	12221	12109	10196	9226	-970	0.2
US Coal	94792	100713	89841	74011	73355	77385	4029	-0.7
US Nuke	88402	83696	77046	73748	73713	75510	1797	-0.3
US Hydro	25370	24553	24699	23105	23540	25527	1987	-0.4
US Gas	153813	176848	162707	150057	152802	158677	5875	-1.1

# See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

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# Monthly Average Generation Data

### Nuclear Generation Monthly Average - GWh (NRC)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Aug-21	Sep-21	Oct-21	Nov-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
NRC Nuclear Daily Output	80.0	76.0	91.5	87.2	75.5	76.8	74.2	1.3	-1.8
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0
NRC Nuclear Outage	24.8	28.9	13.4	17.7	29.4	25.8	29.9	-3.5	1.1
NRC % Nuclear Cap Utilization	81.4	77.3	93.0	88.7	76.8	78.1	75.5	1.3	-1.8

#### Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Aug-21	Sep-21	Oct-21	Nov-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	930	1203	2442	2020	1765	1649	1725	-117	522
TEXAS Wind	9030	10553	9901	9400	11565	10885	12254	-681	1701
US Wind	35390	42838	35830	40223	40989	41397	44540	407	1702

#### Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Aug-21	Sep-21	Oct-21	Nov-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	35390	42838	35830	40223	40989	41397	44540	<b>A</b> 3142.9	<b>1702</b>
US Solar	6729	7729	13787	13380	11044	9769	10666	<b>A</b> 897.0	<b>2937</b>
US Petroleum	3111	2473	4484	2452	3238	3078	3072	<b>▼</b> -6	<b>4</b> 599
US Other	8328	8766	9928	9008	11099	8963	10271	<b>1</b> 308	<b>1505</b>
US Coal	89134	85787	137655	110037	82734	80899	77045	▼ -3854	▼ -8742
US Nuke	86512	79531	94062	90146	76700	80880	76386	<b>v</b> -4494	▼ -3146
US Hydro	24895	26695	28533	25665	23895	25973	24333	▼ -1640	▼ -2362
US Gas	148847	148370	210824	173538	158237	155626	153123	▼ -4646	<b>4753</b>
US Total	403417	402382	534937	464626	410683	406831	402374	▼-12435	▼ -8



## See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

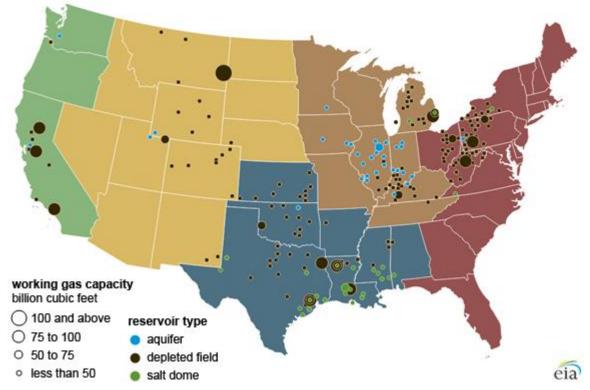


### Regional S/D Models Storage Projection

Week Ending	5-Nov			
			Daily	
			Average	Weekly
		Daily	Storage	Adjusted
	Daily Raw	Adjustment	Activity	Storage
	Storage	Factor	(Adjusted) *	Activity
L48	0.0	0.6	0.7	5
East	-0.5	-0.1	-0.6	-4
Midwest	-0.9	0.6	-0.3	-2
Mountain	3.1	-3.2	-0.1	-1
South Central	-2.0	3.7	1.6	11
Pacific	0.4	-0.3	0.1	1

\*Adjustment Factor is calcuated based on historical regional deltas

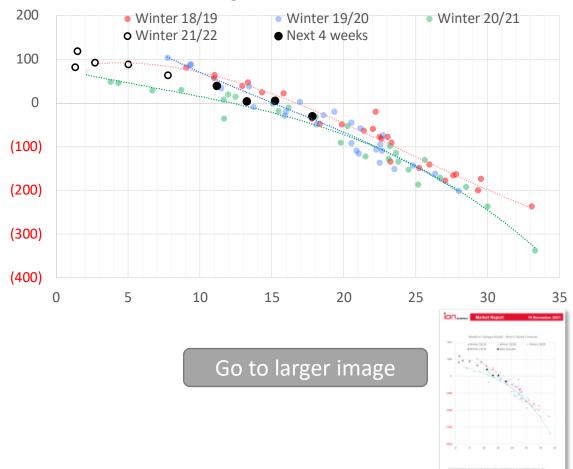
### U.S. underground natural gas storage facilities by type (July 2015)



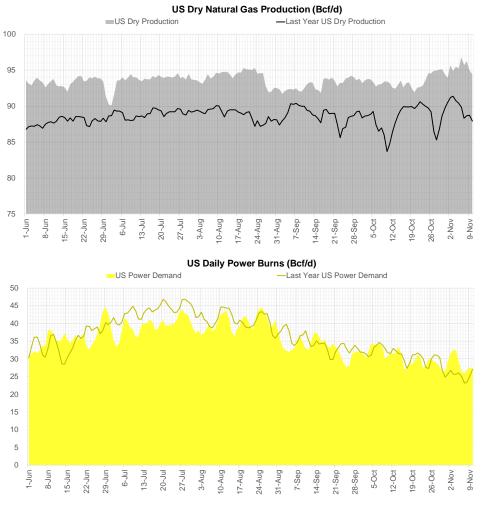
### Weather Model Storage Projection

Next report and beyond		
Week Ending	GWDDs	Week Storage Projection
05-Nov	13.2	5
12-Nov	11	40
19-Nov	15	6
26-Nov	18	-30

Weather Storage Model - Next 4 Week Forecast



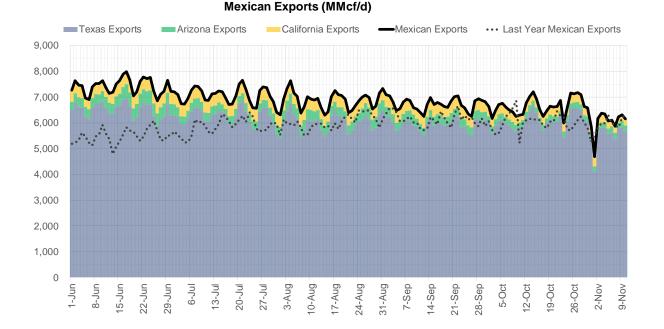


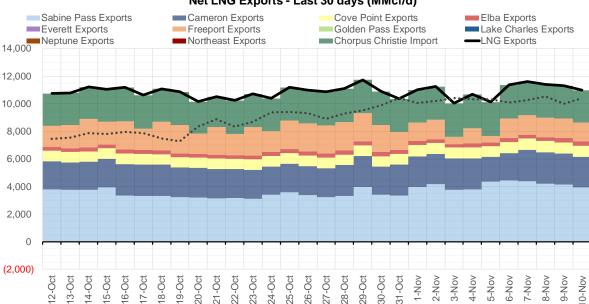


US Daily ResCom Consumption(Bcf/d) US ResCom Demand -Last Year US ResCom Demand 35 30 25 20 15 10 5 0 8-Jun 15-Jun 29-Jun 27-Jul I0-Aug I7-Aug 24-Aug 14-Sep 21-Sep 9-Nov 1-Jun 22-Jun 6-Jul 3-Aug 7-Sep 28-Sep 12-Oct 19-Oct 26-Oct 13-Jul 20-Jul 31-Aug 5-Oct 2-Nov

Source: Bloomberg







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

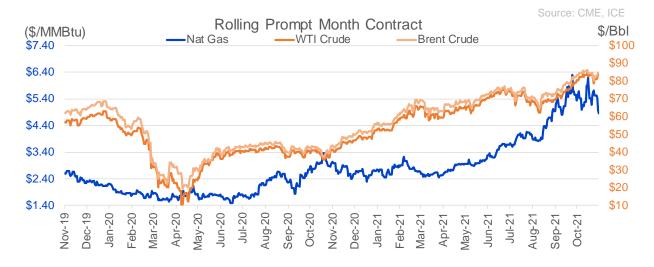


### Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	(	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
12	2021	С	6.50	6043		12	2021	Р	2.75	54603
12	2021	C	7.00	5410		12	2021	Р	4.00	46726
12	2021	P	4.00	4864		12	2021	Р	3.00	40253
12	2021	P	4.50	4692		12	2021	Р	2.50	39420
12	2021	P	4.25	4485		12	2021	Р	3.50	34906
12	2021	С	7.50	3502		3	2022	С	10.00	33168
12	2021	P	4.75	3163		12	2021	С	6.00	25142
12	2021	С	5.50	2992		3	2022	С	8.00	25003
12	2021	С	6.75	2610		1	2022	С	6.00	24781
1	2022	С	8.00	1983		12	2021	Р	4.25	24692
12	2021	C	6.00	1952		12	2021	Р	5.00	24062
1	2022	С	5.50	1928		12	2021	С	7.00	23994
10	2022	C	7.00	1800		1	2022	Р	3.00	23386
1	2022	C	5.75	1635		3	2022	С	5.00	23006
12	2021	P	5.00	1539		1	2022	Р	2.75	22827
1	2022	Р	4.00	1510		12	2021	С	4.00	22526
6	2022	С	5.00	1455		3	2022	Р	3.00	21067
1	2022	C	6.00	1439		12	2021	С	8.00	19788
3	2022	C	10.00	1414		4	2022	С	3.00	19710
12	2021	C	5.75	1354		1	2022	С	7.00	19313
1	2022	C	7.00	1330		3	2022	Р	2.50	18788
1	2022	P	4.50	1318		1	2022	Р	4.00	18491
6	2022	C	6.00	1300		3	2022	P	3.50	18476
12	2021	C	8.00	1289		1	2022	Р	3.50	18268
1	2022	P	3.50	1269		12	2021	Р	4.50	17869
12	2021	С	6.25	1255		1	2022	С	5.00	17736
12	2021	P	3.50	1237		3	2022	P	4.00	17480
1	2022	C	6.50	1110		2	2022	С	5.00	16863
5	2022	C	5.00	1105		12	2021	P	2.00	16834
5	2022	P	3.50	1100		12	2021	С	6.50	16200
2	2022	С	8.00	1045		2	2022	P	3.50	15705
4	2022	P	3.50	960		12	2022	С	5.00	15682
6	2022	P	3.50	950		3 4	2022 2022	C P	4.00 2.50	15631 15564
7	2022	P	3.50	950		4	2022	P C	2.50 5.00	
8	2022	P	3.50	950		4	2022	P	5.00 4.00	14950 14533
9	2022	P	3.50	950		2	2022	P C	4.00 4.00	14533
10	2022	Р	3.50	950		1	2022	c	4.00 8.00	14408
1	2022	C	7.50	943		3	2022	c	7.00	14199
1	2022	C	5.00	915		12	2022	c	7.50	14134
4	2022	P	3.00	901		5	2021	c	3.00	13733
5	2022	P	3.00	900		3	2022	c	6.00	13690
6	2022	P	3.00	900		1	2022	C	10.00	13605
7	2022	P	3.00	900		12	2022	c	15.00	13524
8	2022	P	3.00	900		3	2022	P	5.00	13463
9	2022	P	3.00	900		6	2022	C	3.00	13438
10	2022	P	3.00	900		1	2022	P	3.00	13281
12	2022	C	5.00	895		12	2022	C	4.50	13267
2	2022	c	5.00	880		12	2022	c	5.25	13263
12	2021	P	3.75	858		7	2022	č		
		•	0.10			,	LULL	Source	: CME, ICE	10200

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

Civil, and ICE Combined							
CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MI							alent (10,000 MM
	Current	Prior	Daily Change		Current	Prior	Daily Change
DEC 21	116585	117688	-1103	DEC 21	92850	91493	1357
JAN 22	232459	222785	9674	JAN 22	87665	86452	1213
FEB 22	78145	74887	3258	FEB 22	70367	69940	427
MAR 22	157778	163126	-5348	MAR 22	79599	79233	366
APR 22	116175	117798	-1623	APR 22	78099	77879	220
MAY 22	132958	130502	2456	MAY 22	71863	71725	137
JUN 22	43981	44394	-413	JUN 22	55347	55771	-425
JUL 22	40149	39374	775	JUL 22	57520	57844	-325
AUG 22	31030	31440	-410	AUG 22	56279	56494	-214
SEP 22	36260	36088	172	SEP 22	57105	57347	-242
OCT 22	86854	86657	197	OCT 22	62814	62805	9
NOV 22	35638	35467	171	NOV 22	49260	49272	-11
DEC 22	27538	27852	-314	DEC 22	51859	52038	-179
JAN 23	31698	31556	142	JAN 23	40509	40423	86
FEB 23	11351	11358	-7	FEB 23	33462	33457	4
MAR 23	20362	19847	515	MAR 23	36363	36312	51
APR 23	15984	15978	6	APR 23	37496	37084	412
MAY 23	9955	9939	16	MAY 23	35431	35576	-144
JUN 23	8022	8005	17	JUN 23	31599	31701	-102
JUL 23	5557	5570	-13	JUL 23	31644	31762	-117
AUG 23	4220	4215	5	AUG 23	32622	32732	-111
SEP 23	5566	5573	-7	SEP 23	30828	30900	-72
OCT 23	10353	10341	12	OCT 23	34401	34454	-54
NOV 23	4620	4553	67	NOV 23	34032	34037	-5
DEC 23	8049	8147	-98	DEC 23	31549	31554	-5
JAN 24	4768	4764	4	JAN 24	19574	19539	35
FEB 24	1443	1443	0	FEB 24	15036	15032	4
MAR 24	8606	8905	-299	MAR 24	19881	19848	33
APR 24	5312	5612	-300	APR 24	14265	14329	-65
MAY 24	1832	1832	0	MAY 24	14919	14973	-54



Last Year

vs. Last Year

\$2.859

\$2.568

\$2.999

\$2.506

## **Market Report**

\$2.904

\$2.125

\$2.974

\$2.393

\$2.785

\$1.296

\$2.776

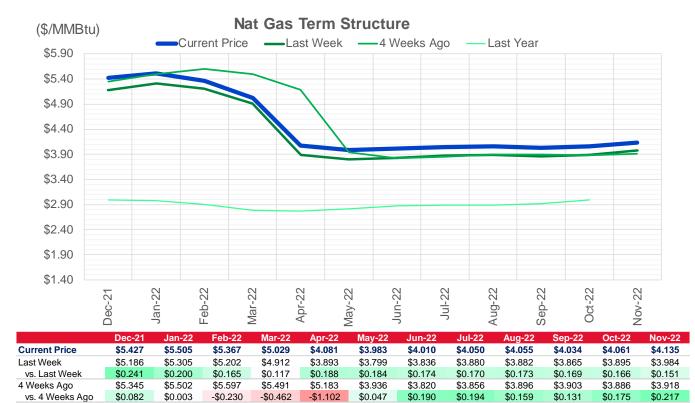
\$1.207

\$2.821

\$1.189

\$2.875

\$1.175



		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	4.60	13.93	9.33
TETCO M3	\$/MMBtu	4.18	4.18 7.17	
FGT Zone 3	\$/MMBtu	4.05	4.05 5.69	
Zone 6 NY	\$/MMBtu	4.05	7.51	3.46
Chicago Citygate	\$/MMBtu	4.66	5.85	1.19
Michcon	\$/MMBtu	4.84	5.28	0.44
Columbia TCO Pool	\$/MMBtu	4.29	5.07	0.78
Ventura	\$/MMBtu	4.57	6.10	1.53
Rockies/Opal	\$/MMBtu	5.15	5.62	0.46
El Paso Permian Basin	\$/MMBtu	4.65	4.65 5.65	
Socal Citygate	\$/MMBtu	6.79	7.26	0.47
Malin	\$/MMBtu	5.57	6.43	0.86
Houston Ship Channel	\$/MMBtu	4.60	5.71	1.11
Henry Hub Cash	\$/MMBtu	5.21	5.40	0.19
AECO Cash	C\$/GJ	4.05	4.77	0.72
Station2 Cash	C\$/GJ	3.91	6.99	3.08
Dawn Cash	C\$/GJ	4.90	5.47	0.57

Source: CME, Bloomberg

\$2.892

\$1.163

\$2.918

\$1.143

\$2.991

\$1.144

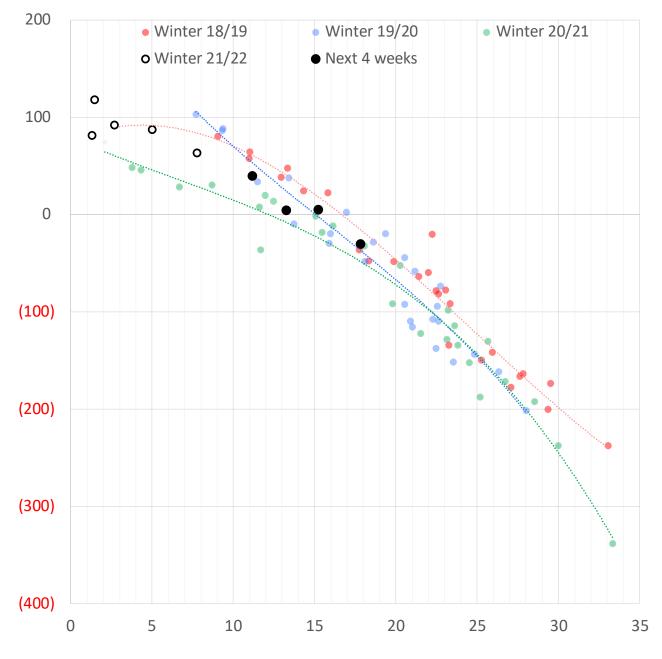
\$2.882

\$1.152



					VS	s. 4 Weeks		
	Units	<b>Current Price</b>	vs.	Last Week		Ago	vs	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224		0.000		0.000		2.188
NatGas Oct21/Nov21	\$/MMBtu	0.361		0.000		0.697		0.295
NatGas Oct21/Jan22	\$/MMBtu	-0.771		-0.570		-0.691	▼	-1.070
NatGas Apr22/Oct22	\$/MMBtu	0.012		0.036		0.041	▼	-0.022
WTI Crude	\$/Bbl	84.15		0.240		3.510		42.790
Brent Crude	\$/Bbl	84.78		0.060		1.360		41.170
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	250.81		-0.010	▼	-0.190		125.560
Propane, Mt. Bel	cents/Gallon	1.42		0.009		-0.040		0.868
Ethane, Mt. Bel	cents/Gallon	0.41		-0.012		-0.023		0.194
Coal, PRB	\$/MTon	12.30		0.000		0.000		0.000
Coal, PRB	\$/MMBtu	0.70						
Coal, ILB	\$/MTon	31.05		0.000		0.000		0.000
Coal, ILB	\$/MMBtu	1.32						

### Weather Storage Model - Next 4 Week Forecast



# **Market Report**

ENERGY

## 10 November 2021

