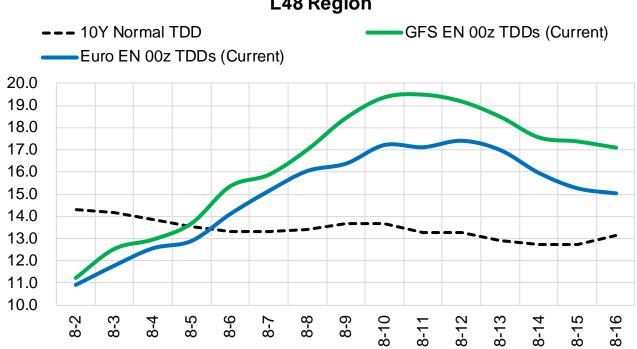


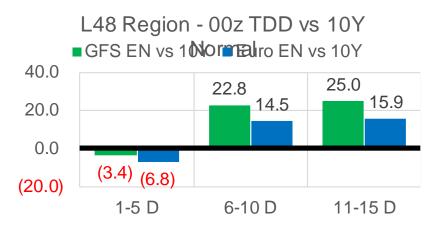


## Short-term Weather Model Outlooks (00z)



### L48 Region

## Vs. 10Y Normal



Source: WSI, Bloomberg

# **Market Report**

#### **Daily Balances**

	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	1-Aug	2-Aug	DoD	vs.7D
Lower 48 Dry Production	92.4	92.5	92.2	92.9	92.1	91.7	90.7	<b>-1.0</b>	▼ -1.5
Canadian Imports	5.7	5.8	5.7	5.3	5.2	5.0	4.9	▼ 0.0	<b>v</b> -0.5
L48 Power	44.3	43.1	42.9	40.9	38.8	37.6	38.2	<b>A</b> 0.7	▼ -3.0
L48 Residential & Commercial	8.5	8.7	8.6	8.1	7.8	7.8	7.9	<b>A</b> 0.2	<b>V</b> -0.3
L48 Industrial	20.3	20.5	20.7	20.5	20.4	20.2	20.3	<b>A</b> 0.1	<b>T</b> -0.1
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	5.0	▼ -0.1	<b>T</b> -0.1
L48 Pipeline Distribution	2.5	2.5	2.4	2.3	2.2	2.2	2.2	<b>0</b> .0	<b>T</b> -0.1
L48 Regional Gas Consumption	80.7	79.9	79.7	76.9	74.2	72.8	73.7	<b>A</b> 0.9	▼ -3.7
Net LNG Delivered	10.83	10.90	10.86	10.97	10.86	10.58	10.30	<b>-0.3</b>	<b>v</b> -0.5
Total Mexican Exports	7.5	7.4	7.2	7.1	6.6	6.3	6.8	<b>0.5</b>	<b>-0.2</b>
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	-0.9	0.2	0.1	3.2	5.5	7.0	4.9		

Lower 48 Component Models

Daily Model Error

#### **EIA Storage Week Balances**

	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	30-Jul	WoW	vs. 4W
Lower 48 Dry Production	93.2	92.2	91.7	92.3	92.4	92.5	<b>0.1</b>	<b>0.3</b>
Canadian Imports	4.6	5.1	5.1	5.2	4.9	5.5	<b>0.6</b>	<b>0.5</b>
L48 Power	34.4	39.8	37.2	38.7	39.7	42.2	<b>A</b> 2.5	<b>3</b> .3
L48 Residential & Commercial	8.8	8.6	8.2	8.4	8.4	8.3	▼ -0.1	<b>T</b> -0.1
L48 Industrial	19.5	21.1	19.3	19.5	19.7	20.1	<b>0.5</b>	<b>a</b> 0.3
L48 Lease and Plant Fuel	5.2	5.1	5.1	5.1	5.1	5.1	▲ 0.0	▲ 0.0
L48 Pipeline Distribution	2.1	2.4	2.1	2.2	2.3	2.4	<b>0.1</b>	<b>a</b> 0.1
L48 Regional Gas Consumption	70.0	76.9	71.9	73.9	75.2	78.2	<b>2.9</b>	<b>3.7</b>
Net LNG Exports	10.3	11.2	11.0	10.8	10.5	10.8	<b>0.3</b>	<b>T-0.1</b>
Total Mexican Exports	7.6	7.2	7.1	7.1	7.1	7.0	▼ -0.1	▼-0.1
Implied Daily Storage Activity	9.9	2.0	6.8	5.6	4.4	2.1	-2.4	
EIA Reported Daily Storage Activity	10.9	2.3	7.9	7.0	5.1			
Daily Model Error	-0.9	-0.3	-1.1	-1.4	-0.7			

#### **Monthly Balances**

	2Yr Ago	LY					MTD		
	Aug-19	Aug-20	Apr-21	May-21	Jun-21	Jul-21	Aug-21	МоМ	vs. LY
Lower 48 Dry Production	94.6	89.5	92.2	92.7	92.8	92.2	91.2	<b>-0.9</b>	<b>1.7</b>
Canadian Imports	4.4	4.9	4.6	4.5	4.8	5.2	4.9	<b>-0.2</b>	<b>0.1</b>
L48 Power	41.0	40.9	24.9	26.7	35.3	39.4	37.9	<b>-</b> 1.5	▼-3.0
L48 Residential & Commercial	7.8	7.7	19.5	13.2	8.8	8.3	7.8	▼ -0.5	<b>a</b> 0.2
L48 Industrial	23.5	21.8	21.2	20.3	20.7	19.7	20.2	<b>a</b> 0.5	<b>T</b> -1.6
L48 Lease and Plant Fuel	5.2	5.0	5.1	5.1	5.1	5.1	5.0	▼ -0.1	<b>A</b> 0.1
L48 Pipeline Distribution	2.4	2.4	2.3	2.1	2.2	2.3	2.2	▼ 0.0	<b>V</b> -0.1
L48 Regional Gas Consumption	79.8	77.6	73.0	67.2	72.1	74.8	73.2	▼ -1.6	▼ -4.4
Net LNG Exports	5.2	4.0	11.5	10.8	10.2	10.8	10.4	▼ -0.4	<b>6.4</b>
Total Mexican Exports	5.3	6.0	6.7	6.8	7.4	7.1	6.5	<b>-0.5</b>	<b>0.5</b>
Implied Daily Storage Activity EIA Reported Daily Storage Activity	8.8	6.7	5.7	12.4	8.0	4.6	5.9		
Daily Model Error									

Source: Bloomberg, analytix.ai



# **Daily** Average Generation Data

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

ENERGY

	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	1-Aug	DoD	vs. 7D
NRC Nuclear Daily Output	90.2	90.6	90.0	89.8	90.3	90.3	90.3	0.0	0.1
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	14.7	14.3	14.9	15.0	14.5	14.5	14.5	0.0	-0.1
NRC % Nuclear Cap Utilization	91.7	92.1	91.5	91.4	91.8	91.8	91.8	0.0	0.1

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

	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	1-Aug	DoD	vs.7D
CALI Wind	1522	879	1754	2254	1644	1891	1891	0	234
TEXAS Wind	6079	4279	5594	2991	4585	7192	7192	0	2072
US Wind	23692	22329	28958	27887	25303	27259	27259	0	1354

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

	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	1-Aug	DoD	vs. 7D
US Wind	23692	22329	28958	27887	25303	27259	27259	0	1354
US Solar	12092	14436	12827	14235	13108	13312	13312	0	-23
US Petroleum	5003	5264	5033	4873	4470	3642	3642	0	-1072
US Other	9375	9355	9165	8843	9142	7615	7615	0	-1301
US Coal	152143	151434	153259	153100	152833	113203	113203	0	-32792
US Nuke	92850	93252	92218	92482	92366	60710	60710	0	-26603
US Hydro	29902	29826	29968	29769	27722	25007	25007	0	-3692
US Gas	235677	241140	238115	238031	232925	1614 <mark>0</mark> 3	161403	0	-63145

# See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

# **Storage Week** Average Generation Data

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

	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	30-Jul	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	89.9	89.1	89.5	90.7	90.7	89.3	-1.4	0.2
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	15.0	15.7	15.4	14.2	14.2	15.6	1.4	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

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

	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	30-Jul	WoW	WoW Bcf/d Impact
CALI Wind	2568	2588	2604	3004	2064	1905	-159	0.0
TEXAS Wind	13415	8326	3739	10817	7162	7913	751	-0.1
US Wind	49248	27216	25698	36365	26445	29733	3289	-0.6

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

								WoW
	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	30-Jul	WoW	Bcf/d
								Impact
US Wind	49248	27216	25698	36365	26445	29733	3289	-0.6
US Solar	14070	14060	14162	14488	14034	13619	-416	0.1
US Petroleum	3331	5142	4035	4282	3892	4729	837	-0.1
US Other	8246	8886	9159	9554	9336	9117	-218	0.0
US Coal	118233	136480	131305	131524	137617	146414	8797	-1.5
US Nuke	93426	92257	92359	93735	93488	92226	-1261	0.2
US Hydro	32186	33024	30127	30420	30191	29203	-988	0.2
US Gas	180182	208732	194610	199730	210468	223900	13432	

# 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	May-21	Jun-21	Jul-21	Aug-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
NRC Nuclear Daily Output	94.5	91.2	81.8	88.7	90.0	90.3	90.1	0.3	-1.1
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	10.4	13.6	23.1	16.2	14.9	14.5	14.8	-0.3	1.1
NRC % Nuclear Cap Utilization	96.1	92.8	83.2	90.2	91.5	91.8	91.6	0.3	-1.1

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

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	May-21	Jun-21	Jul-21	Aug-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	2447	2601	3402	2913	2338	1891	2356	-447	-244
TEXAS Wind	7905	8787	12259	9675	7217	7192	7537	-25	-1251
US Wind	27627	29842	46081	37299	29124	27259	29602	-1865	-240

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

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	May-21	Jun-21	Jul-21	Aug-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	27627	29842	46081	37299	29124	27259	29602	<b>2342.5</b>	<b>~</b> -240
US Solar	9488	12345	14486	14563	14050	13312	14028	<b>A</b> 716.7	<b>1683</b>
US Petroleum	5248	4924	3012	4149	4226	3642	4239	<b>5</b> 98	<b>-685</b>
US Other	9000	9957	7439	8162	9241	7615	9171	<b>A</b> 1555	<b>-786</b>
US Coal	131334	121735	86422	121348	136659	113203	135743	<b>A</b> 22539	<b>4008</b>
US Nuke	101196	93465	85517	92175	91866	60710	89724	<b>A</b> 29014	▼ -3742
US Hydro	34501	32237	30677	32575	29821	25007	29367	<b>4360</b>	<b>V</b> -2869
US Gas	215443	229373	139477	188818	206502	161403	205550	<b>A</b> 61126	▼-23824
US Total	535288	533496	413562	499436	521734	411391	517604	<b>119909</b>	▼-15892



## See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

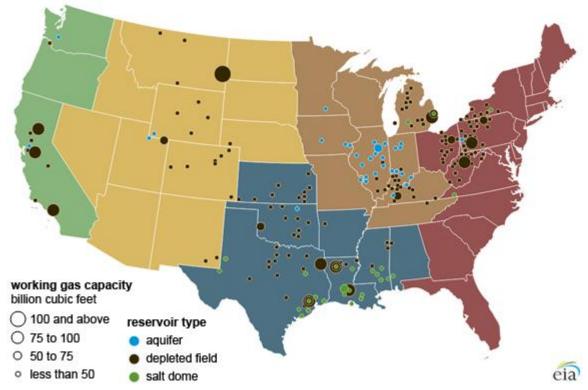


## Regional S/D Models Storage Projection

Week Ending	30-Jul			
			Daily	
			Average	Weekly
		Daily	Storage	Adjusted
	Daily Raw	Adjustment	Activity	Storage
	Storage	Factor	(Adjusted) *	Activity
L48	1.7	1.2	3.0	21
East	1.7	1.6	3.3	23
Midwest	2.6	-0.6	2.0	14
Mountain	4.5	-4.1	0.4	3
South Central	-6.8	4.4	-2.4	-17
Pacific	-0.3	-0.2	-0.4	-3

\*Adjustment Factor is calcuated based on historical regional deltas

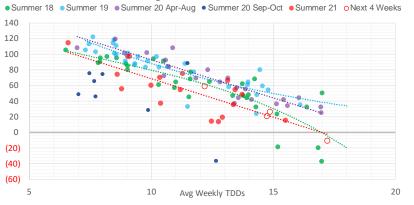
#### U.S. underground natural gas storage facilities by type (July 2015)



## Weather Model Storage Projection

Next report and beyond		
Week Ending	GWDDs	Week Storage Projection
30-Jul	14.7	21
06-Aug	12.2	59
13-Aug	17.2	-11
20-Aug	14.9	26

#### Weather Storage Model - Next 4 Week Forecast



# Go to larger image

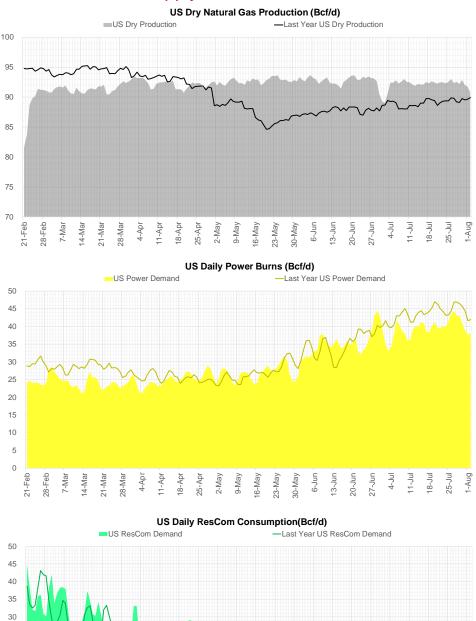


25 20 15 10 5 -28-Feb -28-Feb -28-Feb

14-Mar

21-Mar 28-Mar 4-Apr 11-Apr

7-Mar



### Supply – Demand Trends

Source: Bloomberg

25-Jul

1-Aug

4-Jul 11-Jul 18-Jul

13-Jun 20-Jun 27-Jun

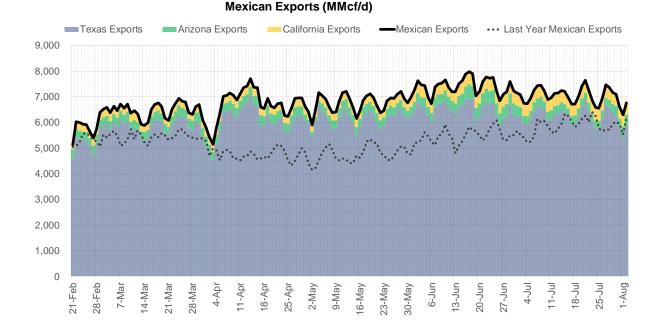
The risk of trading futures and options and other derivatives involves a substantial risk of loss and is not suitable for all persons. Each person must consider whether a particular trade, combination of trades, or strategy is suitable for that person's financial means and objectives. Past results are 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.

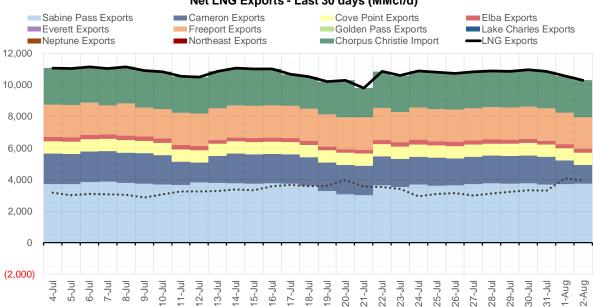
18-Apr

25-Apr

2-May 9-Mav 16-May 23-May 30-May 6-Jun







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

Source: Bloomberg

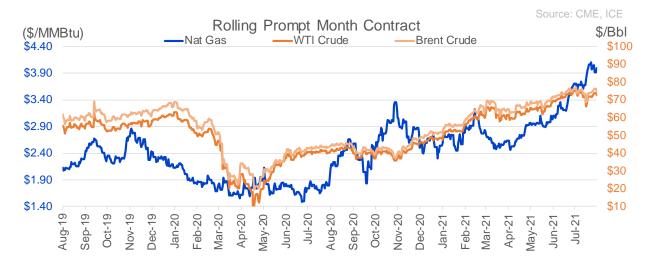


### Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
10	2021	С	4.50	11186	 10	2021	С	4.00	41850
10	2021	C	4.35	8062	10	2021	С	4.50	39596
9	2021	P	3.50	7563	10	2021	С	5.00	33933
9	2021	C	4.25	7048	10	2021	С	3.50	33004
9	2021	C	4.00	6207	10	2021	Р	2.50	30078
9	2021	C	4.50	5550	9	2021	С	4.00	29237
9	2021	C	4.75	4352	10	2021	С	3.25	28230
10	2021	C	5.00	4191	10	2021	Р	2.00	26497
9	2021	С	5.00	3995	10	2021	Р	2.75	26016
9	2021	P	3.75	3935	12	2021	Р	2.75	24350
9	2021	Р	3.25	3431	10	2021	Р	3.50	24341
10	2021	С	4.25	2848	10	2021	Р	3.00	24159
9	2021	P	3.40	2571	9	2021	Р	2.50	23376
9	2021	Р	3.45	2442	9	2021	С	3.50	22932
9	2021	Р	3.80	1938	11	2021	С	4.00	22029
9	2021	С	3.90	1895	12	2021	С	4.00	21856
10	2021	P	3.60	1695	12	2021	Р	2.50	21308
9	2021	Р	4.00	1663	9	2021	Р	2.00	20427
10	2021	С	6.00	1635	9	2021	Р	3.00	20195
9	2021	P	3.70	1559	10	2021	Р	2.25	19800
9	2021	Р	3.00	1512	4	2022	С	3.00	19610
9	2021	С	5.25	1504	9	2021	С	5.00	19416
9	2021	C	4.35	1255	9	2021	С	3.25	18995
1	2022	C	5.00	1182	9	2021	Р	3.50	18654
2	2022	C	5.00	1173	10	2021	С	3.00	18501
9	2021	P	3.60	1134	11	2021	Р	3.00	18139
3	2022	С	5.00	1123	9	2021	С	4.25	17676
2	2022	C	10.00	1039	9	2021	С	4.50	17282
10	2021	P	3.25	1019	10	2021	С	6.00	17280
10	2021	C	4.30	1004	10	2021	С	3.75	16790
2	2022	C	5.50	938	9	2021	P	3.25	16645
10	2021	P	3.50	926	3	2022	C P	5.00	16339
12	2022	C	3.50	850	12 9	2021 2021	P P	3.00	16021 15804
12	2022	P	2.50	850	9 11	2021	P C	2.75 3.75	
9	2021	P	3.65	794	11	2021	c	3.75 5.00	15339 15112
9	2021	C	4.40	724	1	2021	c	5.00 4.00	14698
3	2022	C	10.00	719	1	2022	c	4.00 5.00	14566
1	2022	P	3.00	705	3	2022	C	3.00	14448
1	2022	C	4.50	651	12	2022	P	2.00	13889
1	2022	C	10.00	651	9	2021	P	2.60	13814
11	2021	C	10.00	650	9	2021	P	1.90	13773
12	2021	C	10.00	650	11	2021	P	2.50	13666
1	2025	c	3.00	650	2	2021	C	5.00	13595
1	2025	c	4.00	650	2	2022	c	4.00	13562
1	2025	P	2.25	650	5	2022	c	3.00	13050
2	2025	c	3.00	650	9	2022	P	2.25	12762
2	2025	c	4.00	650	9 6	2021	C	3.00	12755
2	2025	P	2.25	650	3	2022	c	4.00	12709
3	2025	c	3.00	650	9	2022			
č		2	2.00	200	5		Source	: CME, ICE	.2000.0

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

Civic, and ICE Combined								
CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MI								
	Current	Prior	Daily Change		Current	Prior	Daily Change	
SEP 21	327205	338076	-10871	SEP 21	94580	94865	-285	
OCT 21	155851	161116	-5265	OCT 21	107892	107255	637	
NOV 21	124217	124651	-434	NOV 21	72562	72134	428	
DEC 21	73404	74750	-1346	DEC 21	73957	73543	414	
JAN 22	124932	121633	3299	JAN 22	78333	77875	458	
FEB 22	51851	51410	441	FEB 22	69402	69008	394	
MAR 22	102018	102256	-238	MAR 22	68943	68834	110	
APR 22	105277	104927	350	APR 22	67471	67121	350	
MAY 22	86337	87671	-1334	MAY 22	66945	67139	-195	
JUN 22	28840	29124	-284	JUN 22	56172	56162	10	
JUL 22	23748	23850	-102	JUL 22	55572	55472	100	
AUG 22	24742	24653	89	AUG 22	56870	56934	-64	
SEP 22	24326	24414	-88	SEP 22	56626	56528	98	
OCT 22	59832	60034	-202	OCT 22	61462	61041	421	
NOV 22	26150	25380	770	NOV 22	48711	48651	60	
DEC 22	22190	22131	59	DEC 22	50829	50794	34	
JAN 23	16537	16516	21	JAN 23	30902	30881	21	
FEB 23	5590	5656	-66	FEB 23	26577	26533	44	
MAR 23	7700	7617	83	MAR 23	28284	28276	8	
APR 23	9899	9804	95	APR 23	23024	22967	57	
MAY 23	5506	5492	14	MAY 23	23950	23938	12	
JUN 23	2275	2308	-33	JUN 23	22222	22210	12	
JUL 23	2598	2587	11	JUL 23	22493	22500	-7	
AUG 23	1822	1822	0	AUG 23	22485	22480	6	
SEP 23	2036	2036	0	SEP 23	21872	21886	-14	
OCT 23	2678	2679	-1	OCT 23	23484	23479	6	
NOV 23	1213	1213	0	NOV 23	22411	22403	8	
DEC 23	1748	1752	-4	DEC 23	21872	21862	10	
JAN 24	993	993	0	JAN 24	12883	12882	2	
FEB 24	838	838	0	FEB 24	11000	10978	22	



vs. 4 Weeks Ago

vs. Last Year

Last Year

\$0.214

\$1.799

\$2.115

\$0.252

\$1.957

\$1.963

# **Market Report**

\$0.380

\$2.793

\$1.292

\$0.357

\$2.915

\$1.234

\$0.215

\$2.884

\$1.185

\$0.323

\$2.418

\$1.564

\$0.330

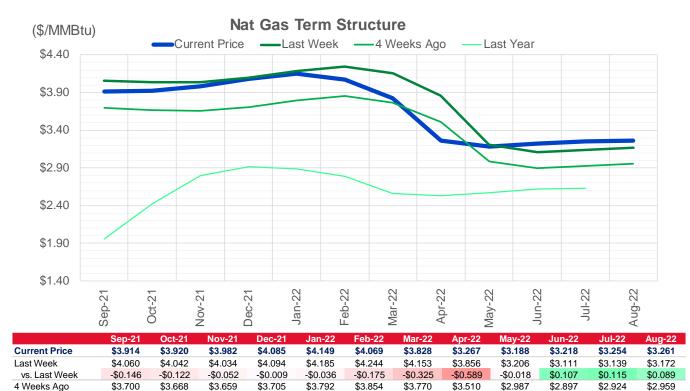
\$2.622

\$0.632

\$0.302

\$2.634

\$0.627



\$0.058

\$2.788

\$1.040

\$0.201

\$2.529

\$0.659

\$0.321

\$2.572

\$0.646

-\$0.243

\$2.556

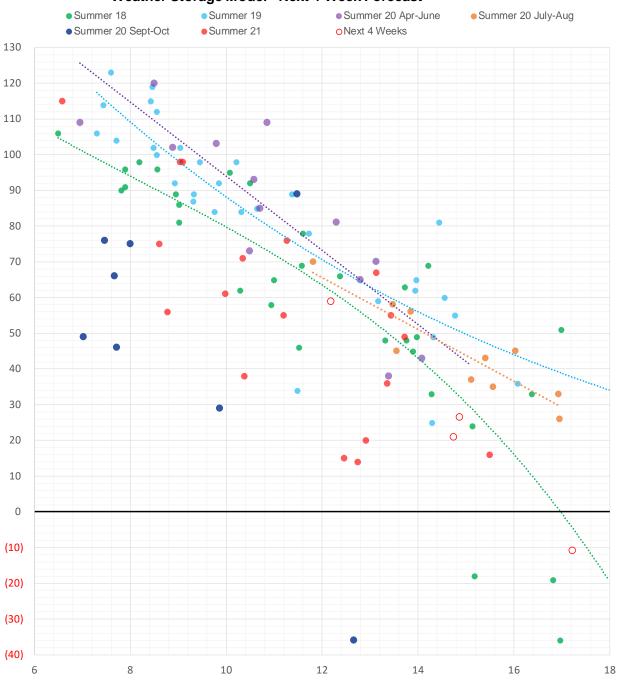
\$0.711

		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	2.88	3.66	0.78
TETCO M3	\$/MMBtu	2.93	3.44	0.51
FGT Zone 3	\$/MMBtu	2.90	4.13	1.23
Zone 6 NY	\$/MMBtu	2.90	3.45	0.55
Chicago Citygate	\$/MMBtu	3.68	3.88	0.20
Michcon	\$/MMBtu	3.63	3.83	0.20
Columbia TCO Pool	\$/MMBtu	3.10	3.34	0.24
Ventura	\$/MMBtu	3.62	3.81	0.19
Rockies/Opal	\$/MMBtu	3.89	3.77	-0.12
El Paso Permian Basin	\$/MMBtu	3.72	3.82	0.10
Socal Citygate	\$/MMBtu	7.61	5.68	-1.93
Malin	\$/MMBtu	4.08	4.23	0.15
Houston Ship Channel	\$/MMBtu	3.84	4.03	0.19
Henry Hub Cash	\$/MMBtu	3.91	3.77	-0.14
AECO Cash	C\$/GJ	3.14	3.04	-0.10
Station2 Cash	C\$/GJ	3.13	4.07	0.94
Dawn Cash	C\$/GJ	3.64	3.86	0.22

Source: CME, Bloomberg



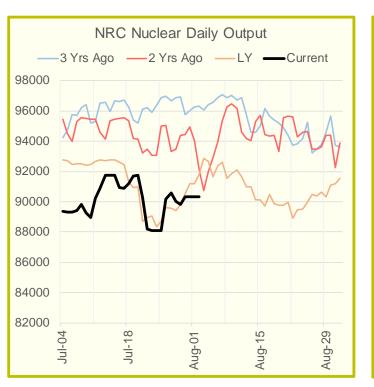
		vs. 4 Weeks						
	Units	<b>Current Price</b>	vs.	Last Week		Ago	vs	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	0.303		-0.114		0.261		0.288
NatGas Oct21/Nov21	\$/MMBtu	0.062		0.002		0.016		0.012
NatGas Oct21/Jan22	\$/MMBtu	0.229		0.019		0.034		-0.054
NatGas Apr22/Oct22	\$/MMBtu	0.001		0.031		0.010	▼	-0.066
WTI Crude	\$/Bbl	73.95		1.880		-1.210		33.680
Brent Crude	\$/Bbl	76.33		2.230		0.160		33.030
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	219.94		6.550		2.030		98.230
Propane, Mt. Bel	cents/Gallon	1.09		0.001		-0.016		0.602
Ethane, Mt. Bel	cents/Gallon	0.31		0.000		0.009		0.097
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**

## 2 August 2021



ENERGY

