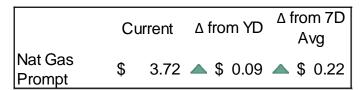


### 30 June 2021



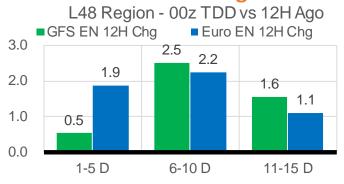
	Cı	ırrent	Δ fro	om YD	Δ from 7D Avg	
WTI Prompt	\$	73.75	<b>\$</b>	0.77	<b>\$</b>	0.3

	_	urrent	Λ fro	m VD	∆ fro	m 7D
	urreni	ΔΙΙ	טו וווע	Α	vg	
Brent Prompt	\$	75.36	<b>\$</b>	0.60	<b>-</b> \$	(0.2)
Prompt	Ψ	70.00	— 4	0.00	Ψ	(0.2)

#### 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

### Vs. 12H Ago



## Vs. 24H Ago

L48 Region - 00z TDD vs 24H Ago

GFS EN 24H Chg

Euro EN 24H Chg

2.5

0.0

(1.9)

(1.9)

1-5 D

6-10 D

11-15 D

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	91.1	<b>▼</b> -0.91	<b>▼</b> -1.51

	Current	Δ from YD	Δ from 7D Avg
US ResComm	8.8	<b>-</b> 0.18	<b>0.60</b>

	Current	Δ from YD	Δ from 7D Avg		
Net LNG Exports	11.2	<b>0.38</b>	<b>a</b> 0.13		

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	42.3	<b>▼</b> -1.88	<b>4.63</b>

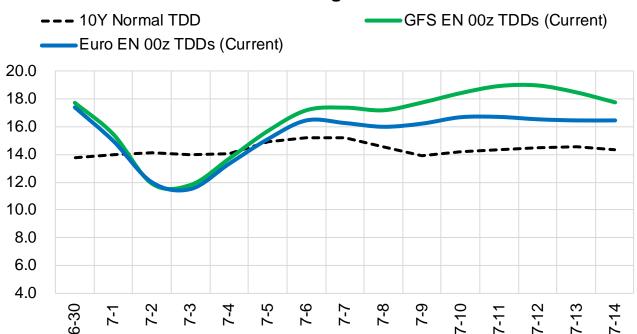
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	5.6	-0.05	<b>a</b> 0.81

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	7.2	<b>-</b> 0.36	<b>▼</b> -0.18

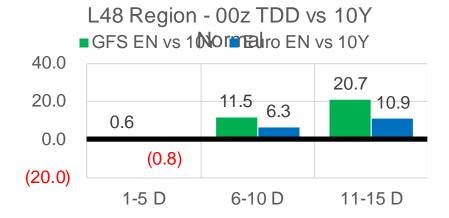


### Short-term Weather Model Outlooks (00z)

### L48 Region



### Vs. 10Y Normal



Source: WSI, Bloomberg



## Lower 48 Component Models

#### **Daily Balances**

	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	DoD	vs.7D
Lower 48 Dry Production	92.9	92.8	93.0	92.5	92.5	92.0	91.1	▼-0.9	▼ -1.5
Canadian Imports	4.2	4.4	4.7	4.9	5.3	5.6	5.6	▼ 0.0	<b>▲ 0.7</b>
L48 Power	33.6	34.6	36.9	39.0	43.0	44.1	42.3	<b>▼</b> -1.9	<b>3.7</b>
L48 Residential & Commercial	8.0	7.8	7.6	7.9	8.8	9.0	8.8	▼-0.2	<b>a</b> 0.6
L48 Industrial	20.0	20.3	20.4	20.5	20.5	20.5	20.0	<b>-</b> 0.4	▼ -0.3
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	5.0	▼ -0.1	▼ -0.1
L48 Pipeline Distribution	2.0	2.1	2.2	2.3	2.6	2.6	2.5	▼ -0.1	<b>0.2</b>
L48 Regional Gas Consumption	68.8	69.9	72.3	74.8	79.9	81.3	78.7	<b>▼</b> -2.6	<b>4.2</b>
Net LNG Delivered	11.13	11.27	11.28	11.28	11.30	10.81	11.19	<b>0.4</b>	▲ 0.0
Total Mexican Exports	7.9	7.3	6.8	7.0	7.2	7.5	7.2	▼-0.4	▼ -0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	9.3	8.8	7.3	4.3	-0.6	-2.0	-0.3		

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

	21-May	28-May	4-Jun	11-Jun	18-Jun	25-Jun	WoW	vs. 4W
Lower 48 Dry Production	91.7	92.3	92.1	92.5	91.8	92.8	<b>0.9</b>	<b>0.6</b>
Canadian Imports	4.6	4.5	3.9	4.8	5.1	4.7	▼ -0.5	<b>0.1</b>
L48 Power	26.5	29.5	27.8	34.4	34.8	34.6	▼-0.3	<b>2.9</b>
L48 Residential & Commercial	10.5	9.4	11.8	8.4	8.2	8.3	<b>0.1</b>	<b>▼</b> -1.1
L48 Industrial	19.9	20.0	17.9	21.4	22.8	20.2	<b>▼</b> -2.6	▼-0.3
L48 Lease and Plant Fuel	5.0	5.1	5.1	5.1	5.1	5.1	<b>0.1</b>	<b>0.0</b>
L48 Pipeline Distribution	1.9	2.0	2.0	2.1	2.1	2.1	▼ 0.0	<b>0.1</b>
L48 Regional Gas Consumption	63.9	65.9	64.6	71.4	72.9	70.3	▼ -2.6	<b>1.6</b>
Net LNG Exports	10.4	10.5	11.0	9.4	9.6	10.3	<b>0.7</b>	▲ 0.1
Total Mexican Exports	6.8	6.7	7.2	7.3	7.5	7.6	<b>▲ 0.1</b>	<b>0.4</b>
Implied Daily Storage Activity	15.2	13.6	13.2	9.1	6.9	9.2	2.3	
EIA Reported Daily Storage Activity	16.4	14.0	14.0	2.3	7.9			
Daily Model Error	-1.2	-0.4	-0.8	6.8	-0.9			

Monthly Balances									
	2Yr Ago	LY					MTD		
	Jun-19	Jun-20	Feb-21	Mar-21	Apr-21	May-21	Jun-21	MoM	vs. LY
Lower 48 Dry Production	91.4	87.7	85.2	91.8	91.8	91.8	92.3	<b>0.5</b>	<b>4.6</b>
Canadian Imports	4.7	4.0	6.3	4.8	4.7	4.5	4.8	<b>0.3</b>	8.0 🛋
L48 Power	33.1	35.0	27.8	24.2	25.0	27.0	35.3	<b>8.3</b>	<b>0.3</b>
L48 Residential & Commercial	9.0	8.8	47.1	29.3	20.0	13.1	8.3	▼ -4.8	<b>▼</b> -0.5
L48 Industrial	22.5	19.8	21.2	19.7	20.6	19.2	20.9	<b>1.7</b>	<b>1.1</b>
L48 Lease and Plant Fuel	5.0	4.8	4.7	5.0	5.0	5.0	5.1	<b>0.1</b>	<b>a</b> 0.3
L48 Pipeline Distribution	2.1	2.2	3.3	2.5	2.2	2.1	2.1	<b>0.1</b>	▼ 0.0
L48 Regional Gas Consumption	71.7	70.7	104.1	80.9	72.8	66.4	71.8	<b>5.4</b>	<b>1.1</b>
Net LNG Exports	5.5	4.0	8.6	11.1	11.5	10.8	10.2	▼ -0.7	<b>▲</b> 6.1
Total Mexican Exports	5.2	5.5	5.8	6.5	6.7	6.8	7.4	<b>0.7</b>	<b>1.9</b>
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	13.8	11.5	-27.0	-2.0	5.4	12.4	7.8		



## **Daily** Average Generation Data

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

	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	DoD	vs. 7D
NRC Nuclear Daily Output	89.4	89.4	88.6	88.3	89.5	89.5	89.5	0.0	0.4
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	15.4	15.4	16.3	16.6	15.4	15.4	15.4	0.0	-0.4
NRC % Nuclear Cap Utilization	91.0	90.9	90.1	89.8	91.0	91.0	91.0	0.0	0.4

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

	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	DoD	vs. 7D
CAISO Wind	3721	5085	4583	4583	4583	4583	4583	0	60
ERCOT	18763	23451	16048	6453	6832	6682	2954	-3728	-10084
Genscape US Wind	62814	49628	43189	22389	15462	15462	15462	0	-19362

#### **Generation Daily Average - MWh (Genscape)**

	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	29-Jun	30-Jun	DoD	vs. 7D
Genscape US Wind	62814	49628	43189	22389	15462	15462	15462	0	-19362
Genscape US Solar	13873	20328	23019	22784	24053	24053	24053	0	2701
Genscape US Other	4512	4996	4449	4463	4850	4850	4850	0	164
Genscape US Coal	117294	122665	120372	127857	136460	136460	136460	0	9609
Genscape US Nuke	93556	93542	92726	92393	93576	93576	93576	0	348
Genscape US Hydro	27093	24454	24359	23913	24310	24310	24310	0	-430
Genscape US Gas	189742	202114	211694	229406	247415	247415	247415	0	26118

See National Wind and Nuclear daily charts



## **Storage Week** Average Generation Data

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

	21-May	28-May	4-Jun	11-Jun	18-Jun	25-Jun	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	81.7	86.7	89.2	88.6	86.7	89.9	3.2	-0.5
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	23.2	18.1	15.7	16.3	18.1	15.0	-3.2	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

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

	21-May	28-May	4-Jun	11-Jun	18-Jun	25-Jun	WoW	WoW Bcf/d Impact
CAISO Wind	4429	4045	4012	4607	3723	3254	-470	0.1
ERCOT	15638	18210	9217	17072	10749	16549	5800	-1.0
Genscape US Wind	44217	54606	29242	43337	32707	50972	18265	-3.1

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

	21-May	28-May	4-Jun	11-Jun	18-Jun	25-Jun	WoW	WoW Bcf/d Impact
Genscape US Wind	44217	54606	29242	43337	32707	50972	18265	-3.1
Genscape US Solar	12784	13553	15426	15643	7817	12070	4253	-0.7
Genscape US Other	5356	5615	5443	5942	5201	4746	-455	0.1
Genscape US Coal	87761	101192	91844	118938	120230	118888	-1342	0.2
Genscape US Nuke	85515	90607	93111	92667	90822	93987	3164	-0.5
Genscape US Hydro	28694	27300	28202	32469	29459	30022	562	-0.1
Genscape US Gas	155670	176363	167948	212241	210769	202074	-8695	1.5

See National Wind and Nuclear daily charts



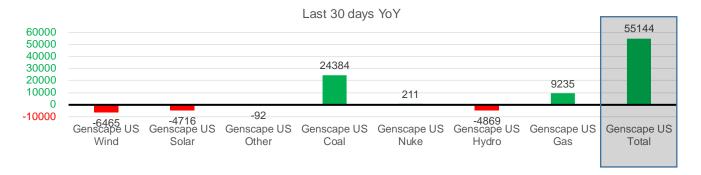
## **Monthly** Average Generation Data

Nuclear Generation Monthly	Average -	GWh (NI	RC)						
	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Mar-21	Apr-21	May-21	Jun-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
NRC Nuclear Daily Output	92.5	90.2	81.7	75.8	81.8	88.7	88.7	6.9	-1.5
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	12.4	14.7	23.2	29.0	23.1	16.2	16.2	-6.9	1.5
NRC % Nuclear Cap Utilization	94.0	91.7	83.1	77.1	83.2	90.2	90.2	7.0	-1.5

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

	2Yr Ago	LY				MID			
	Same 30 days	Same 30 days	Mar-21	Apr-21	May-21	Jun-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CAISO Wind	3363	3323	2727	3973	3984	3994	3994	10	671
ERCOT	10087	13577	15759	14043	15379	12893	12893	-2486	-683
Genscape US Wind	31242	43370	51455	50826	46211	36905	36905	-9306	-6465

Generation Monthly Average -	MWh (Go 2Yr Ago	enscape LY	<b>(</b> )			MTD			
	•	Same 30 days	Mar-21	Apr-21	May-21	Jun-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
Genscape US Wind	31242	43370	51455	50826	46211	36905	36905	<b>a</b> 0.0	▼ -6465
Genscape US Solar	20437	18818	7925	11423	15499	14103	14103	<b>a</b> 0	<b>▼ -4716</b>
Genscape US Other	5251	5265	4163	4515	5256	5174	5174	<b>a</b> 0	▼ -92
Genscape US Coal	107693	95160	80386	73809	87336	119543	119543	<b>a</b> 0	<b>24384</b>
Genscape US Nuke	95189	92592	85633	79828	85659	92803	92803	<b>a</b> 0	<b>211</b>
Genscape US Hydro	35100	34201	27693	27391	27514	29332	29332	<b>a</b> 0	<b>▼</b> -4869
Genscape US Gas	190764	201577	144642	153342	160888	210812	210812	<b>a</b> 0	<b>9235</b>
Genscape US Total	485676	490983	401897	401133	428362	508671	546127	<b>a</b> 0	<b>▲</b> 55144



See National Wind and Nuclear daily charts



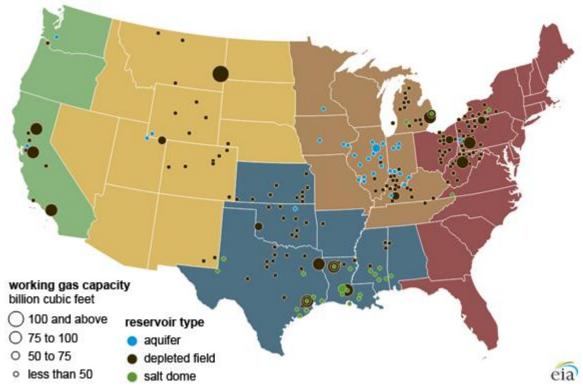
### Regional S/D Models Storage Projection

Week Ending 25-Jun

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
<u>L</u> 48	8.9	1.1	10.0	70
East	2.8	0.7	3.5	25
Midwest	4.3	-0.4	4.0	28
Mountain	4.8	-3.8	1.0	7
South Central	-3.7	4.7	1.0	7
Pacific	0.7	-0.2	0.5	4

<sup>\*</sup>Adjustment Factor is calcuated based on historical regional deltas

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



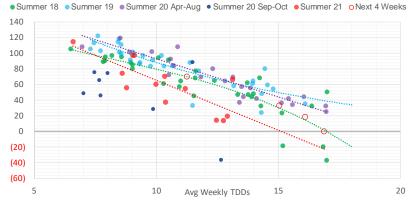


## Weather Model Storage Projection

Next report
and beyond

Week Ending	GWDDs	Week Storage Projection
25-Jun	11.3	70
02-Jul	16.1	18
09-Jul	15.0	33
16-Jul	16.9	0

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



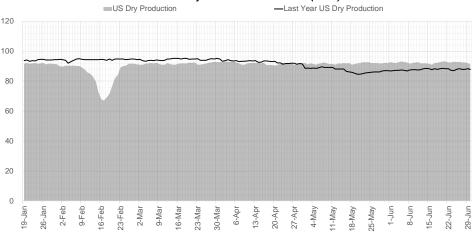
Go to larger image



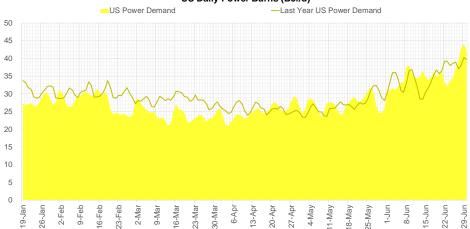


### Supply - Demand Trends

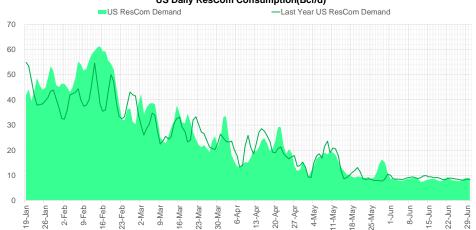
#### US Dry Natural Gas Production (Bcf/d)



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



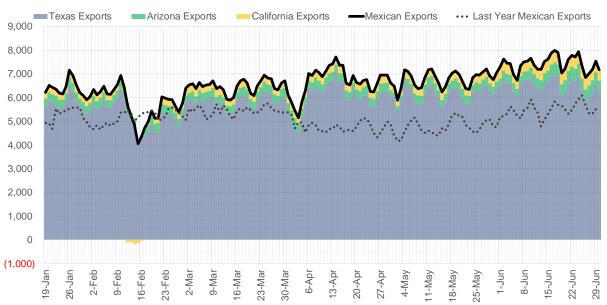
#### US Daily ResCom Consumption(Bcf/d)



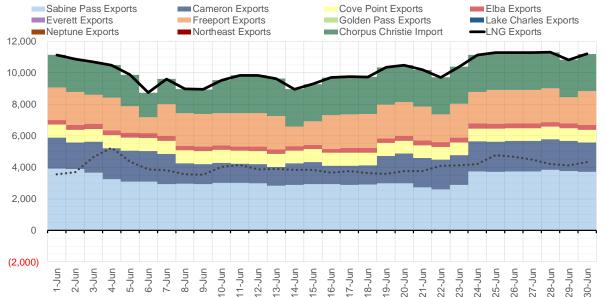
Source: Bloomberg



#### Mexican Exports (MMcf/d)



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



Source: Bloomberg



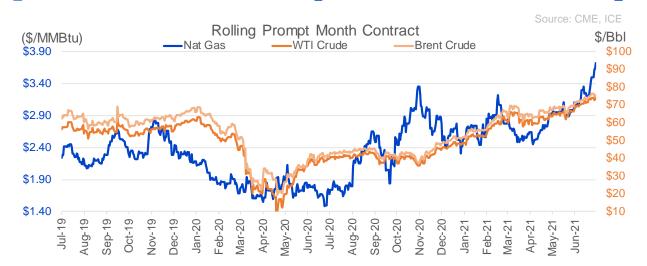
# Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

								<u> </u>	
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL		CONTRACT MONTH		DIT/CALL	DIT/CALL STDIZE
10	2021	Р	3.00	14224		10	10 2021	10 2021 C	10 2021 C 4.00
8	2021	С	4.00	13822		8			
8	2021	P	3.50	11335		8	8 2021	8 2021 C	8 2021 C 3.50
8	2021	P	3.25	10833		9	9 2021	9 2021 C	9 2021 C 4.00
10	2021	P	3.50	9409		10	10 2021	10 2021 C	10 2021 C 3.50
8	2021	P	3.40	9251		10	10 2021	10 2021 C	10 2021 C 5.00
8	2021	Ċ	3.75	8475		8			
8	2021	P	3.73	8078		10			
9	2021	C	4.00	7456		8			
8	2021	C		7436		8			
			4.25			10			
8	2021	С	4.50	7050		10			
8	2021	Р	3.35	6597		10			
9	2021	Р	3.00	6329					
9	2021	С	4.25	6163	9		2021		
10	2021	С	3.75	5732	8		2021		
8	2021	Р	3.00	4428	9		2021		
10	2021	Р	3.25	4385	12		2021		
10	2021	Р	2.75	3929	8		2021		
10	2021	C	4.00	3888	11		2021		
8	2021	P	3.60	3407	9		2021		
9	2021	P	3.50	3172	8	2	2021	2021 P	2021 P 2.00
		C			4	2022	2	2 C	C 3.00
11	2021		4.00	3138	8	2021		Р	P 2.25
8	2021	P	3.10	2944	10	2021		Р	P 2.25
9	2021	P	3.25	2867	9	2021		C	
8	2021	С	5.00	2784	10	2021		P	
9	2021	С	5.00	2748	10	2021		C	
10	2021	Р	2.50	2722	8	2021		P	
8	2021	С	3.50	2435	8	2021		P	
12	2021	С	4.00	2432	10	2021		C	
9	2021	С	3.50	2420	10	2021		C	
8	2021	Р	3.30	2352	8	2021		C	
11	2021	P	2.50	2200					
8	2021	C	3.85	2057	3	2022		С	
9	2021	Ċ	6.00	2004	11	2021		С	
11	2021	Č	4.50	1979	8	2021		С	
8	2021	P	3.15	1938	10	2021		С	
		C			9	2021		P	
11	2021		3.75	1783	1	2022		С	
9	2021	P	2.75	1738	3	2022		С	
10	2021	P	3.70	1715	3	2022		С	
9	2021	P	3.55	1691	11	2021		Р	P 2.50
8	2021	С	3.70	1644	12	2021		Р	P 2.00
10	2021	С	5.00	1640	9	2021		Р	P 1.90
9	2021	С	3.75	1552	2	2022		С	C 4.00
12	2021	Р	3.50	1525	9	2021		P	
10	2021	С	4.50	1447	12	2021		C	
9	2021	C	4.50	1377	5	2022		Č	
8	2021	Č	3.95	1364	6	2022		Č	
8	2021	Ċ	4.20	1362	8	2021		Č	
8	2021	P	3.65	1331	10	2022			
O	2021	F	3.00	1331	10	2022		Source	Source: CME, ICE

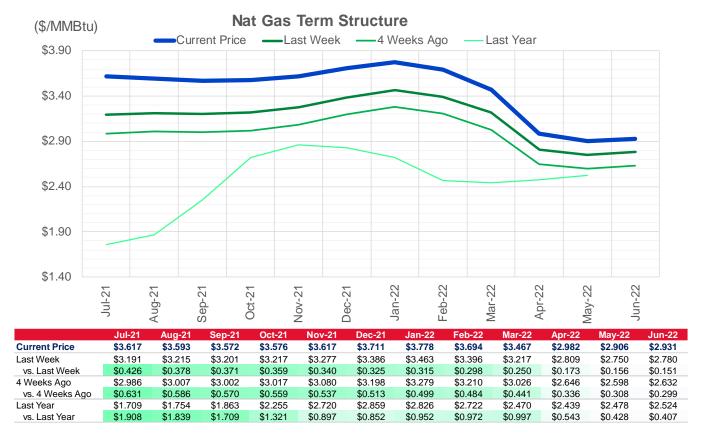
### Nat Gas Futures Open Interest

CME, and ICE Combined

CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MM							
	Current	Prior	Daily Change		Current	Prior	Daily Change
AUG 21	214624	310	214314	AUG 21	98461	83189	15272
SEP 21	216465	222230	-5765	SEP 21	86200	98428	-12228
OCT 21	163944	211098	-47154	OCT 21	100713	86259	14454
NOV 21	97580	158257	-60677	NOV 21	72151	99070	-26919
DEC 21	67722	97081	-29359	DEC 21	68932	72309	-3377
JAN 22	105712	66526	39186	JAN 22	80683	68744	11940
FEB 22	41306	100759	-59453	FEB 22	65244	82881	-17637
MAR 22	87713	40831	46882	MAR 22	67085	66055	1030
APR 22	82816	87559	-4743	APR 22	62232	65740	-3508
MAY 22	66764	80384	-13620	MAY 22	60957	61175	-218
JUN 22	27348	60126	-32778	JUN 22	53220	60186	-6967
JUL 22	20733	25993	-5260	JUL 22	52048	52812	-764
AUG 22	20023	19989	34	AUG 22	52867	51375	1492
SEP 22	18791	18628	163	SEP 22	52613	51984	629
OCT 22	53284	17887	35397	OCT 22	57308	52029	5279
NOV 22	23174	51182	-28008	NOV 22	45853	56547	-10693
DEC 22	17294	22604	-5310	DEC 22	48727	45233	3494
JAN 23	11520	16332	-4812	JAN 23	27776	48029	-20254
FEB 23	3968	11342	-7374	FEB 23	24784	27591	-2807
MAR 23	7747	3603	4144	MAR 23	27456	24779	2677
APR 23	8481	7534	947	APR 23	21972	27387	-5415
MAY 23	4811	8726	-3915	MAY 23	22310	21834	476
JUN 23	1569	4760	-3191	JUN 23	20837	22266	-1430
JUL 23	2247	1251	996	JUL 23	20732	20802	-71
AUG 23	1302	1939	-637	AUG 23	20701	20666	35
SEP 23	1741	966	775	SEP 23	20340	20628	-288
OCT 23	2281	1490	791	OCT 23	21665	20270	1395
NOV 23	1076	2260	-1184	NOV 23	19817	21615	-1798
DEC 23	1137	916	221	DEC 23	20191	19786	405
JAN 24	791	1137	-346	JAN 24	12563	20168	-7605







		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	5.06	2.96	-2.10
TETCO M3	\$/MMBtu	3.88	2.85	-1.03
FGT Zone 3	\$/MMBtu	3.97	3.34	-0.63
Zone 6 NY	\$/MMBtu	3.97	2.80	-1.18
Chicago Citygate	\$/MMBtu	3.72	3.18	-0.54
Michcon	\$/MMBtu	3.60	3.11	-0.49
Columbia TCO Pool	\$/MMBtu	3.18	2.76	-0.42
Ventura	\$/MMBtu	3.68	3.09	-0.59
Rockies/Opal	\$/MMBtu	3.82	3.12	-0.69
El Paso Permian Basin	\$/MMBtu	3.70	3.21	-0.49
Socal Citygate	\$/MMBtu	7.02	4.72	-2.30
Malin	\$/MMBtu	3.80	3.59	-0.21
Houston Ship Channel	\$/MMBtu	3.79	3.31	-0.48
Henry Hub Cash	\$/MMBtu	3.75	3.13	-0.62
AECO Cash	C\$/GJ	3.38	2.68	-0.70
Station2 Cash	C\$/GJ	3.27	3.49	0.22
Dawn Cash	C\$/GJ	3.63	3.11	-0.52

Source: CME, Bloomberg

					VS	s. 4 Weeks		
	Units	<b>Current Price</b>	vs.	Last Week		Ago	vs	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	-0.011	_	-0.029	•	-0.037	_	-0.032
NatGas Oct21/Nov21	\$/MMBtu	0.041		-0.015	•	-0.012	•	-0.007
NatGas Oct21/Jan22	\$/MMBtu	0.195		-0.041	•	-0.050	_	-0.085
NatGas Apr22/Oct22	\$/MMBtu	-0.001		-0.027	•	-0.022	•	-0.050
WTI Crude	\$/Bbl	72.98		-0.080		5.260		33.710
Brent Crude	\$/Bbl	74.76		-0.050		4.510		33.610
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	212.19		-2.910		5.040		94.380
Propane, Mt. Bel	cents/Gallon	0.97		0.011		0.053		0.471
Ethane, Mt. Bel	cents/Gallon	0.28		0.003		0.009		0.059
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

