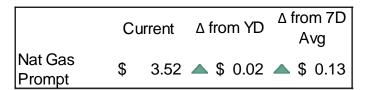


### 28 June 2021



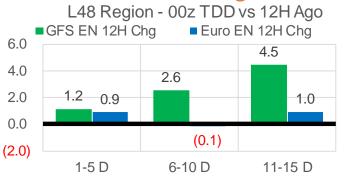
	С	urrent	Δ from YD	Δ fron Αν	
WTI Prompt	\$	73.98	<b>\$</b> (0.07)	<b>\$</b>	0.4

	Curror	nt Δ from YD	Δ from 7D
	Currer		Avg
Brent Prompt	\$ 76.	02 🔻 \$ (0.16	) 📤 💲 0.4

#### 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

2.8

2.0

0.2

0.3

0.8

(0.2)

1-5 D

(1.5)
6-10 D

11-15 D

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	91.9	<b>-</b> 0.65	<b>▼</b> -0.84

	Current	Δ from YD	Δ from 7D Avg		
US Power Burns	38.4	<b>▼</b> -0.38	<b>3.35</b>		

	Current	Δ from YD	Δ from 7D Avg		
US ResComm	8.4	<b>a</b> 0.25	<b>0.07</b>		

	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.9	<b>a</b> 0.16	<b>a</b> 0.30

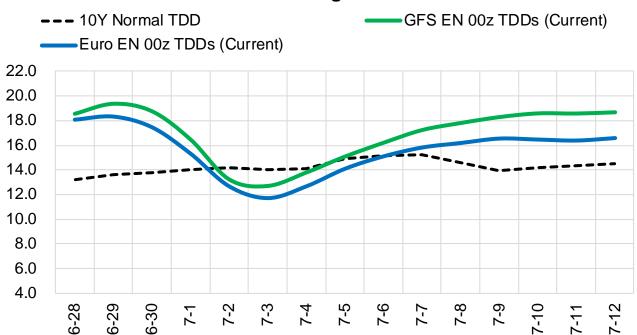
	Current	Δ from YD	Δ from 7D Avg		
Net LNG Exports	11.0	▼ -0.26	<b>a</b> 0.27		

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	7.0	<b>a</b> 0.01	<b>▼</b> -0.43

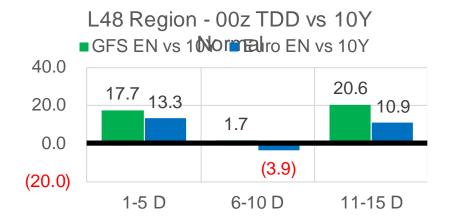


### Short-term Weather Model Outlooks (00z)

## L48 Region



## Vs. 10Y Normal



Source: WSI, Bloomberg



## Lower 48 Component Models

### **Daily Balances**

	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	DoD	vs. 7D
Lower 48 Dry Production	92.4	92.5	92.9	92.6	92.8	92.5	91.9	▼-0.7	▼-0.8
Canadian Imports	4.7	4.4	4.2	4.4	4.7	4.7	4.9	<b>0.2</b>	<b>0.4</b>
L48 Power	33.1	32.2	33.5	34.5	36.8	38.8	38.4	▼-0.4	<b>3.6</b>
L48 Residential & Commercial	9.4	8.4	8.0	7.7	7.8	8.1	8.4	<b>0.2</b>	<b>0.1</b>
L48 Industrial	19.4	19.6	20.1	20.6	21.0	21.3	21.0	▼ -0.3	<b>0.7</b>
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	5.1	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.1	2.0	2.0	2.1	2.2	2.3	2.3	▼ 0.0	<b>0.2</b>
L48 Regional Gas Consumption	69.1	67.3	68.8	70.1	72.9	75.6	75.2	▼-0.4	<b>4.6</b>
Net LNG Delivered	9.71	10.37	11.13	11.27	11.28	11.28	11.02	▼-0.3	<b>0.2</b>
Total Mexican Exports	7.8	7.7	7.9	7.3	6.8	7.0	7.0	<b>0.0</b>	▼ -0.4
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	10.5	11.5	9.2	8.3	6.5	3.3	3.5		

### **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	92.4	92.2	92.6	91.9	92.8	<b>0.9</b>	<b>0.5</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	20.0	20.1	18.0	21.5	22.9	20.0	<b>▼</b> -2.9	▼ -0.6
L48 Lease and Plant Fuel	5.0	5.1	5.1	5.1	5.1	5.1	<b>0.0</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	66.0	64.7	71.5	73.0	70.1	▼ -3.0	<b>1.3</b>
Net LNG Exports	10.4	10.5	11.0	9.4	9.6	10.3	<b>0.7</b>	<b>0.1</b>
Total Mexican Exports	6.8	6.7	7.2	7.3	7.5	7.6	▲ 0.0	<b>0.4</b>
Implied Daily Storage Activity	15.2	13.6	13.3	9.1	6.9	9.5	2.7	
EIA Reported Daily Storage Activity	16.4	14.0	14.0	2.3	7.9			
Daily Model Error	-1.2	-0.4	-0.7	6.8	-1.0			

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	91.5	87.7	85.2	91.8	91.7	91.9	92.4	<b>0.5</b>	<b>4.7</b>
Canadian Imports	4.7	4.0	6.3	4.8	4.7	4.5	4.8	<b>0.2</b>	8.0 🛋
L48 Power	33.1	35.0	27.8	24.2	25.1	27.0	34.6	<b>7.5</b>	▼-0.4
L48 Residential & Commercial	9.0	8.8	47.1	29.3	20.0	13.1	8.3	<b>▼</b> -4.8	▼-0.6
L48 Industrial	22.5	19.9	21.3	19.7	20.5	19.2	21.0	<b>1.8</b>	<b>1.2</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	71.1	<b>4.6</b>	<b>0.4</b>
Net LNG Exports	5.5	4.0	8.6	11.1	11.5	10.8	10.1	▼ -0.7	<b>▲</b> 6.1
Total Mexican Exports	5.2	5.5	5.8	6.5	6.7	6.8	7.4	<b>0.6</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	8.6		



## **Daily** Average Generation Data

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

	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	DoD	vs. 7D
NRC Nuclear Daily Output	90.9	89.7	89.4	89.4	89.4	89.4	89.4	0.0	-0.3
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	14.0	15.2	15.4	15.4	15.4	15.4	15.4	0.0	0.3
NRC % Nuclear Cap Utilization	92.4	91.2	91.0	90.9	90.9	90.9	90.9	0.0	-0.3

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

	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	DoD	vs. 7D
CAISO Wind	2711	2573	3721	5085	4583	4583	4583	0	707
ERCOT	14560	19543	18763	23451	16048	6453	1756	-4697	-14714
Genscape US Wind	36052	65646	62814	49628	49628	49628	49628	0	-2605

### Generation Daily Average - MWh (Genscape)

	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun	27-Jun	28-Jun	DoD	vs. 7D
Genscape US Wind	36052	65646	62814	49628	49628	49628	49628	0	-2605
Genscape US Solar	13011	8433	13873	20328	20328	20328	20328	0	4278
Genscape US Other	4456	4392	4512	4996	4996	4996	4996	0	271
Genscape US Coal	117475	111873	117294	122665	122665	122665	122665	0	3559
Genscape US Nuke	95029	93813	93556	93542	93542	93542	93542	0	-295
Genscape US Hydro	29814	30871	27093	24454	24454	24454	24454	0	-2403
Genscape US Gas	192801	181916	189494	201645	201645	201645	201645	0	6787

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 <b>-</b> 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	202038	-8731	1.5

See National Wind and Nuclear daily charts



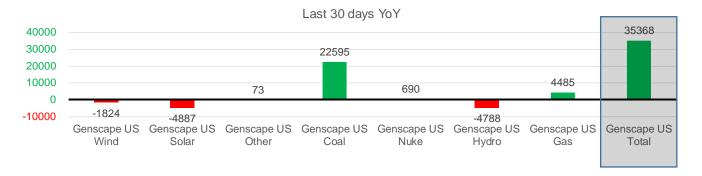
## **Monthly** Average Generation Data

Nuclear Generation Monthly	Average -	GWh (N	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	92.1	89.6	81.7	75.8	81.8	88.7	88.8	6.9	-0.9
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	12.8	15.3	23.2	29.0	23.1	16.2	16.1	-6.9	0.9
NRC % Nuclear Cap Utilization	93.7	91.1	83.1	77.1	83.2	90.2	90.2	7.0	-0.9

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

	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
CAISO Wind	3302	3349	2727	3973	3984	3952	3912	-32	563
ERCOT	9824	12775	15759	14043	15379	13289	13221	-2091	445
Genscape US Wind	30858	41940	51455	50826	46211	40859	40116	-5351	-1824

Generation Monthly Average -	2Yr Ago	enscape 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
Genscape US Wind	30858	41940	51455	50826	46211	40859	40116	<b>▼</b> -743.8	▼ -1824
Genscape US Solar	20202	18535	7925	11423	15499	13075	13648	<b>573</b>	<b>▼</b> -4887
Genscape US Other	5342	5193	4163	4515	5256	5241	5266	<b>26</b>	<b>~</b> 73
Genscape US Coal	106100	92828	80386	73809	87336	117739	115423	<b>▼</b> -2316	<b>22595</b>
Genscape US Nuke	94903	92136	85633	79828	85659	92816	92826	<b>1</b> 0	<b>690</b>
Genscape US Hydro	35703	34323	27693	27391	27514	29719	29535	<b>▼</b> -183	<b>▼</b> -4788
Genscape US Gas	187934	196935	144642	153342	160888	205187	201420	<b>▼</b> -2988	<b>4485</b>
Genscape US Total	481042	481891	401897	401133	428362	504635	517258	<b>▼</b> -5232	<b>35368</b>



See National Wind and Nuclear daily charts



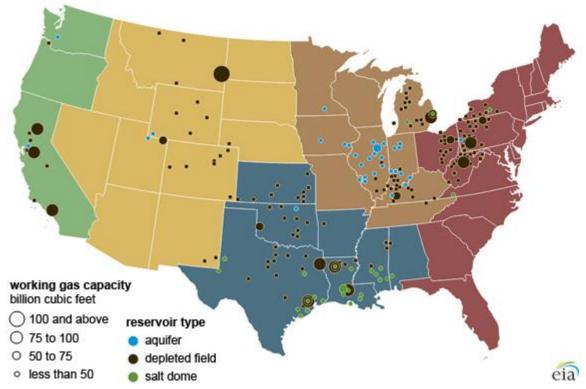
## Regional S/D Models Storage Projection

Week Ending 25-Jun

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	9.2	1.1	10.3	72
East	2.8	0.7	3.5	25
Midwest	4.4	-0.4	4.0	28
Mountain	4.8	-3.8	1.0	7
South Central	-3.5	4.7	1.2	9
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)



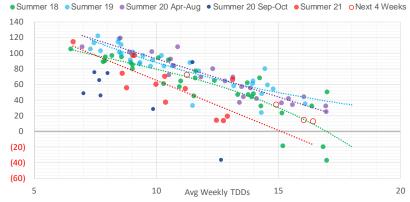


## Weather Model Storage Projection

Next report
and beyond

Week Ending	GWDDs	Week Storage Projection
25-Jun	11.3	72
02-Jul	16.4	13
09-Jul	14.9	34
16-Jul	16.1	14

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



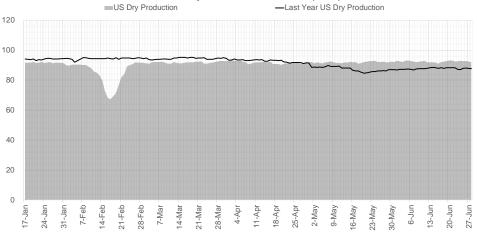
Go to larger image



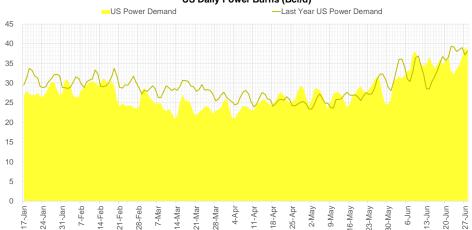


### Supply - Demand Trends

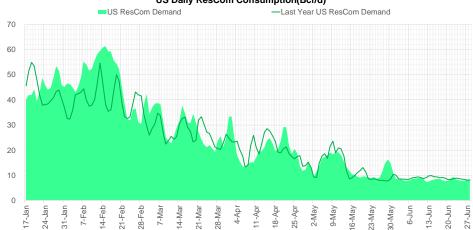
#### US Dry Natural Gas Production (Bcf/d)



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



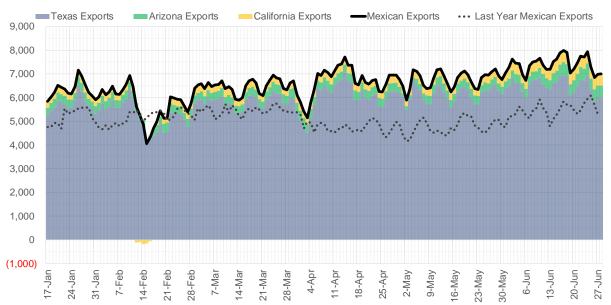
#### US Daily ResCom Consumption(Bcf/d)



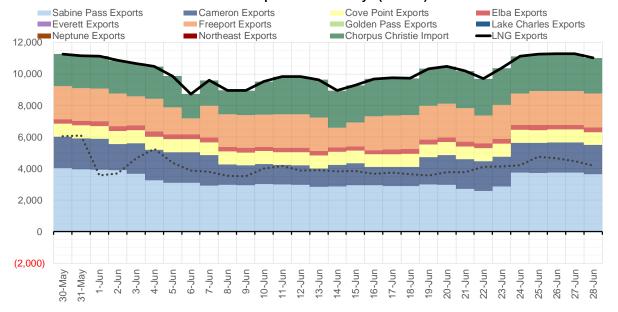
Source: Bloomberg



#### 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

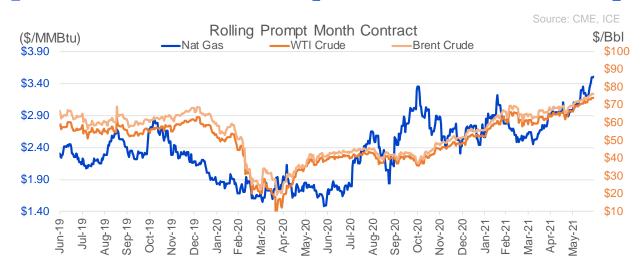
	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE	CONTRACT	CONTRACT	PUT/CALL	STRIKE	CUMULATIV
MONTH	YEAR			VOL	MONTH	YEAR	. 0.707.22	0111112	33.1132.111
8	2021	С	3.75	9552	10	2021	С	4.00	46857
8	2021	С	3.50	7304	8	2021	С	4.00	43450
8	2021	С	4.00	6939	8	2021	С	3.50	42152
8	2021	Р	3.25	6420	9	2021	С	4.00	40248
8	2021	Р	3.00	5379	10	2021	С	3.50	34183
1	2022	C	7.00	5156	10	2021	Р	2.50	32108
7	2021	Ċ	3.50	4675	7	2021	С	3.50	31726
8	2021	P	2.90	4379	8	2021	С	3.75	31155
10	2021	C	5.00	3393	8	2021	Р	3.00	29548
9	2021	P	3.00	3377	7	2021	Р	2.90	29482
8	2021	C	4.25	3279	8	2021	P	2.50	29332
		P			10	2021	C	3.25	28870
8	2021		3.30	3219	7	2021	P	2.50	28794
8	2021	С	4.50	2784	, 7	2021	C	4.00	28471
8	2021	P	3.50	2734	, 7	2021	Ċ	3.25	28054
9	2021	С	3.50	2675	10	2021	Č	5.00	27791
8	2021	Р	2.75	2573	7	2021	P	2.75	26179
8	2021	Р	3.40	2525	9	2021	Ċ	3.50	25882
7	2021	Р	3.40	2059	10	2021	P	2.75	25868
10	2021	Р	2.75	2031	8	2021	C	3.25	24547
7	2021	С	3.55	1983	10	2021	P	2.00	23689
10	2021	С	4.00	1919			P		
3	2022	С	10.00	1852	7	2021	P P	2.85	23679
7	2021	Р	3.45	1827	7	2021		2.80	23457
10	2021	Р	3.50	1789	9	2021	P	2.50	23428
9	2021	С	4.50	1668	7	2021	P	3.00	23213
8	2021	С	4.20	1618	12	2021	С	4.00	22609
9	2021	P	3.25	1611	7	2021	C	3.75	21846
3	2022	C	8.00	1602	8	2021	P	2.90	21640
8	2021	Č	3.60	1567	7	2021	С	3.00	21324
10	2021	P	2.50	1519	9	2021	Р	2.00	20423
11	2021	C	3.75	1301	9	2021	С	3.25	20316
9	2021	C	3.75	1289	8	2021	Р	2.75	20125
3	2021	P			11	2021	С	4.00	19716
ა 11		P	3.00	1280	10	2021	Р	2.25	19698
	2021		2.75	1275	8	2021	Р	2.00	19664
11	2021	P	3.25	1275	4	2022	С	3.00	19598
9	2021	С	4.00	1199	8	2021	Р	2.25	19478
10	2021	Р	3.00	1179	10	2021	С	4.50	18743
8	2021	Р	3.35	1176	10	2021	С	3.00	18011
10	2021	С	3.75	1151	10	2021	С	6.00	16236
8	2021	Р	3.20	1146	7	2021	Р	2.00	16035
11	2021	С	3.25	1126	8	2021	С	3.00	15846
10	2021	С	3.50	1120	8	2021	C	3.30	15817
1	2022	Р	3.25	1050	3	2022	С	4.00	15606
9	2021	Р	3.50	1045	11	2021	P	2.50	15472
11	2021	С	4.25	1000	7	2021	P	2.70	15366
3	2022	P	2.25	1000	10	2021	C	3.75	14966
9	2021	C	3.00	967	1	2022	Č	4.00	14623
9	2021	Ċ	3.25	951	3	2022	Č	3.00	14448
7	2021	P	3.35	920	3	2022		: CME, ICE	



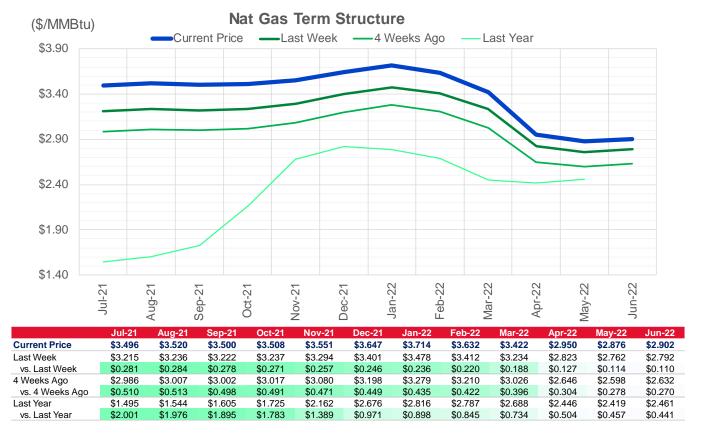
## Nat Gas Futures Open Interest

CME, and ICE Combined

CME Henry	Hub Futures (10	0,000 MMBt	u)	ICE Henry I	Hub Futures Cont	ract Equiva	alent (10,000 MM
	Current	Prior	Daily Change		Current	Prior	Daily Change
JUL 21	4236	15780	-11544	JUL 21	83028	85332	-2304
AUG 21	215992	217708	-1716	AUG 21	90143	87167	2977
SEP 21	207003	204532	2471	SEP 21	84833	83996	837
OCT 21	152016	148116	3900	OCT 21	99232	97473	1759
NOV 21	94631	92884	1747	NOV 21	72199	71876	323
DEC 21	65997	65321	676	DEC 21	68493	68607	-114
JAN 22	99785	100067	-282	JAN 22	83296	83435	-139
FEB 22	40244	39759	485	FEB 22	65537	65366	170
MAR 22	84833	84249	584	MAR 22	65472	65065	407
APR 22	77641	76087	1554	APR 22	60470	59826	644
MAY 22	58746	55934	2812	MAY 22	59417	57277	2140
JUN 22	25666	24701	965	JUN 22	52218	51666	552
JUL 22	18888	18234	654	JUL 22	50835	50465	370
AUG 22	18464	18370	94	AUG 22	51329	50871	458
SEP 22	16760	16087	673	SEP 22	51399	50974	426
OCT 22	50152	49050	1102	OCT 22	55667	55859	-192
NOV 22	21025	20113	912	NOV 22	44710	44511	200
DEC 22	15502	14918	584	DEC 22	47401	47195	206
JAN 23	10683	10039	644	JAN 23	27075	27016	59
FEB 23	3539	3443	96	FEB 23	24652	24455	197
MAR 23	7637	7649	-12	MAR 23	27768	27621	147
APR 23	8676	8758	-82	APR 23	22045	21923	122
MAY 23	4654	4682	-28	MAY 23	22231	22182	49
JUN 23	1172	1173	-1	JUN 23	20769	20722	47
JUL 23	1884	1885	-1	JUL 23	20630	20581	49
AUG 23	969	969	0	AUG 23	20585	20544	41
SEP 23	1364	1364	0	SEP 23	20236	20189	47
OCT 23	2309	2307	2	OCT 23	21268	21157	111
NOV 23	916	816	100	NOV 23	19732	19762	-31
DEC 23	1133	1133	0	DEC 23	20108	20138	-30







		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	3.95	2.86	-1.09
TETCO M3	\$/MMBtu	3.03	2.76	-0.28
FGT Zone 3	\$/MMBtu	3.14	3.31	0.17
Zone 6 NY	\$/MMBtu	3.14	2.69	-0.45
Chicago Citygate	\$/MMBtu	3.32	3.15	-0.17
Michcon	\$/MMBtu	3.30	3.08	-0.22
Columbia TCO Pool	\$/MMBtu	2.94	2.71	-0.23
Ventura	\$/MMBtu	2.66	3.07	0.41
Rockies/Opal	\$/MMBtu	3.38	3.07	-0.31
El Paso Permian Basin	\$/MMBtu	3.11	3.23	0.12
Socal Citygate	\$/MMBtu	5.48	4.55	-0.93
Malin	\$/MMBtu	3.46	3.52	0.06
Houston Ship Channel	\$/MMBtu	3.44	3.31	-0.13
Henry Hub Cash	\$/MMBtu	3.40	3.11	-0.29
AECO Cash	C\$/GJ	2.85	2.60	-0.26
Station2 Cash	C\$/GJ	2.79	3.39	0.60
Dawn Cash	C\$/GJ	3.30	3.08	-0.22

Source: CME, Bloomberg



					VS	s. 4 Weeks		
	Units	<b>Current Price</b>	vs.	Last Week		Ago	VS	s. Last Year
NatGas Jul21/Oct21	\$/MMBtu	0.012	_	-0.010	_	-0.019	_	-0.007
NatGas Oct21/Nov21	\$/MMBtu	0.043	•	-0.014	•	-0.020		-0.006
NatGas Oct21/Jan22	\$/MMBtu	0.206		-0.035		-0.056		-0.076
NatGas Apr22/Oct22	\$/MMBtu	0.009		-0.021		-0.026		-0.041
WTI Crude	\$/Bbl	74.05		2.410		7.730		35.560
Brent Crude	\$/Bbl	76.18		2.670		6.550		35.160
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	214.93		5.610		10.480		101.300
Propane, Mt. Bel	cents/Gallon	0.97		0.017		0.144		0.471
Ethane, Mt. Bel	cents/Gallon	0.28		0.000		0.016		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

