

Market Report

3 August 2021



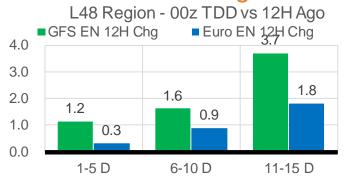
	Currer	nt Δ from YD	m 7D va
WTI Prompt	\$ 71.	33 📤 \$ 0.07	J

	C	urront	۸ fro	m VD	∆ fro	m 7D	
	C	Current	Δ 110	טו ווו	A	Avg	
Brent Prompt	\$	73.05	\$	0.16	~ \$	(2.3)	

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

1.6

2.2

0.0

(0.6)

(0.4)

(1.6)

1.5 D

6-10 D

11-15 D

Current		Δ from YD	Δ from 7D Avg		
US Dry Production	89.7	▼ -1.90	▼ -2.52		

	Current	Δ from YD	Δ from 7D Avg
US ResComm	8.1	a 0.12	▼ -0.05

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	10.4	0.10	▼ -0.38

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	37.6	- 0.78	▼ -3.23

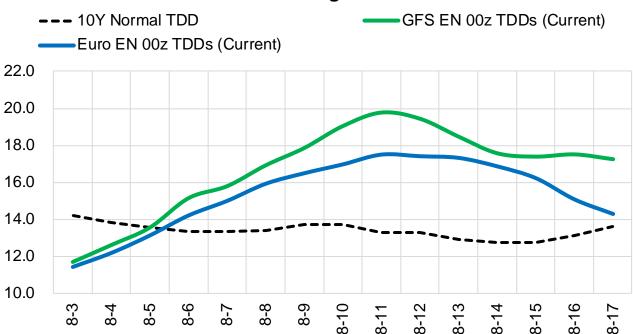
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.9	▼ -0.22	▼ -0.46

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	7.0	0.15	0.00

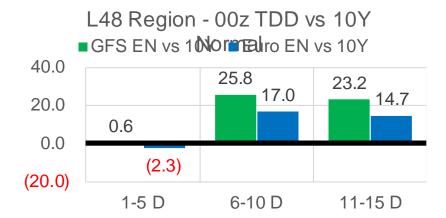


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Market Report

Lower 48 Component Models

Daily Balances

	28-Jul	29-Jul	30-Jul	31-Jul	1-Aug	2-Aug	3-Aug	DoD	vs. 7D
Lower 48 Dry Production	92.5	92.2	93.0	92.1	91.7	91.6	89.7	▼-1.9	▼ -2.5
Canadian Imports	5.8	5.7	5.3	5.2	5.0	5.2	4.9	▼ -0.2	▼ -0.4
L48 Power	43.1	42.8	41.0	38.7	37.6	38.4	37.6	▼-0.8	▼ -2.7
L48 Residential & Commercial	8.7	8.6	8.2	7.6	7.6	8.0	8.1	0.1	▼ 0.0
L48 Industrial	20.5	20.6	20.4	20.3	20.2	20.2	20.2	▼ 0.0	▼ -0.2
L48 Lease and Plant Fuel	5.1	5.1	5.2	5.1	5.1	5.1	5.0	▼ -0.1	▼ -0.1
L48 Pipeline Distribution	2.5	2.4	2.3	2.2	2.2	2.3	2.2	▼ 0.0	▼ -0.1
L48 Regional Gas Consumption	79.9	79.6	77.1	73.9	72.7	73.9	73.1	▼-0.8	▼ -3.0
Net LNG Delivered	10.90	10.86	10.97	10.86	10.58	10.28	10.38	0.1	▼ -0.4
Total Mexican Exports	7.4	7.2	7.1	6.6	6.3	6.8	7.0	0.1	▲ 0.1
Implied Daily Storage Activity	0.2	0.2	3.0	5.9	7.2	5.7	4.1		
EIA Reported Daily Storage Activity 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	▲ 0.1	0.3
Canadian Imports	4.6	5.1	5.1	5.2	4.9	5.5	0.6	0.5
L48 Power	34.4	39.8	37.2	38.7	39.7	42.2	2.4	3.3
L48 Residential & Commercial	8.8	8.6	8.2	8.4	8.4	8.3	▼-0.1	▼ -0.1
L48 Industrial	19.5	21.1	19.3	19.5	19.6	20.1	0.5	0.2
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	0.1	0.1
L48 Regional Gas Consumption	70.0	76.9	71.9	73.9	75.2	78.1	2.9	3.6
Net LNG Exports	10.3	11.2	11.0	10.8	10.5	10.8	0.3	▼-0.1
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	-2.3	
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	MoM	vs. LY
Lower 48 Dry Production	94.6	89.5	92.2	92.7	92.8	92.2	91.0	▼-1.2	1.5
Canadian Imports	4.4	4.9	4.6	4.5	4.8	5.2	5.0	▼ -0.1	0.2
L48 Power	41.0	40.9	24.9	26.7	35.3	39.4	37.9	▼ -1.6	▼-3.0
L48 Residential & Commercial	7.8	7.7	19.5	13.2	8.8	8.3	7.9	▼ -0.4	0.3
L48 Industrial	23.5	21.8	21.2	20.3	20.7	19.7	20.2	0.5	▼ -1.6
L48 Lease and Plant Fuel	5.2	5.0	5.1	5.1	5.1	5.1	5.0	▼ -0.1	0.1
L48 Pipeline Distribution	2.4	2.4	2.3	2.1	2.2	2.3	2.2	▼ 0.0	▼ -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	6.4
Total Mexican Exports	5.3	6.0	6.7	6.8	7.4	7.1	6.7	▼-0.4	0.7
Implied Daily Storage Activity	8.8	6.7	5.7	12.4	8.0	4.6	5.7		
EIA Reported Daily Storage Activity Daily Model Error									



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	1-Aug	2-Aug	DoD	vs. 7D
NRC Nuclear Daily Output	90.6	90.0	89.8	90.3	90.3	90.3	90.8	0.5	0.5
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	14.3	14.9	15.0	14.5	14.5	14.5	14.1	-0.5	-0.5
NRC % Nuclear Cap Utilization	92.1	91.5	91.4	91.8	91.8	91.8	92.3	0.5	0.6

Wind Generation Daily Average - MWh (EIA)

	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	1-Aug	2-Aug	DoD	vs. 7D
CALI Wind	879	1754	2254	1644	1891	2316	2316	0	526
TEXAS Wind	4279	5594	2991	4585	7192	8517	8517	0	2991
US Wind	22329	28958	27887	25303	27259	27375	27375	0	856

Generation Daily Average - MWh (EIA)

	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul	1-Aug	2-Aug	DoD	vs. 7D
US Wind	22329	28958	27887	25303	27259	27375	27375	0	856
US Solar	14436	12827	14235	13108	13312	12220	12220	0	-1137
US Petroleum	5264	5033	4873	4470	3642	3419	3419	0	-1031
US Other	9355	9165	8843	9142	7615	7783	7783	0	-867
US Coal	151434	153259	153100	152833	113203	109045	109045	0	-29767
US Nuke	93252	92218	92482	92366	60710	60638	60638	0	-21306
US Hydro	29826	29968	29769	27722	25007	23843	23843	0	-3846
US Gas	241140	238115	238031	232925	161403	150515	150515	0	-59840

See National Wind and Nuclear daily charts



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)

	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	30-Jul	WoW	WoW Bcf/d Impact
US Wind	49248	27216	25698	36365	26445	29733	3289	-0.6
US Solar	14070	14060	14162	14488	14034	13697	-337	0.1
US Petroleum	3331	5142	4035	4282	3892	4729	837	-0.1
US Other	8246	8886	9159	9554	9336	9149	-187	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	223989	13522	

See National Wind and Nuclear daily charts



Monthly Average Generation Data

Nuclear Generation Monthly	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	94.4	91.2	81.8	88.7	90.0	90.6	90.2	0.6	-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	10.5	13.6	23.1	16.2	14.9	14.2	14.7	-0.6	1.1			
NRC % Nuclear Cap Utilization	95.9	92.8	83.2	90.2	91.5	92.2	91.7	0.6	-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	2417	2648	3402	2913	2338	2316	2368	-23	-280
TEXAS Wind	7631	8738	12259	9675	7217	8517	7750	1300	-988
US Wind	27018	30040	46081	37299	29124	27375	29375	-1749	-664

Generation Monthly Average - MWh (EIA)

Concration monthly Avorage	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	27018	30040	46081	37299	29124	27375	29375	2 000.1	▼ -664
US Solar	9457	12299	14486	14563	14068	12220	13871	1651.5	1573
US Petroleum	5262	4911	3012	4149	4226	3419	4229	811	▼ -682
US Other	8993	9968	7439	8162	9248	7783	9161	1378	▼ -807
US Coal	131123	121737	86422	121348	136659	109045	135196	26150	13459
US Nuke	101061	93457	85517	92175	91866	60638	88661	28024	▼ -4795
US Hydro	34347	32021	30677	32575	29821	23843	29155	5312	▼ -2866
US Gas	215962	229927	139477	188818	206522	150515	204499	65326	▼-25427
US Total	534672	534020	413562	499436	521779	395508	514434	▲128652	▼-19586



See National Wind and Nuclear daily charts



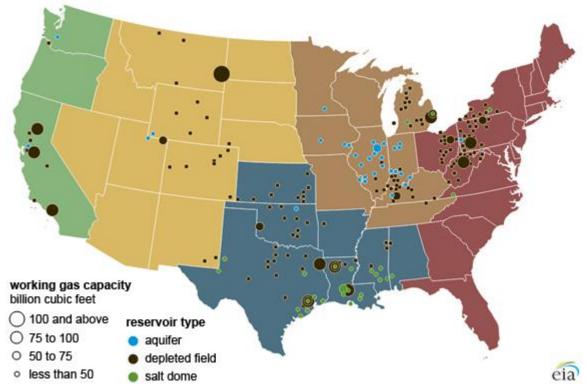
Regional S/D Models Storage Projection

Week Ending 30-Jul

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	1.8	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	-6.7	4.4	-2.4	-16
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)



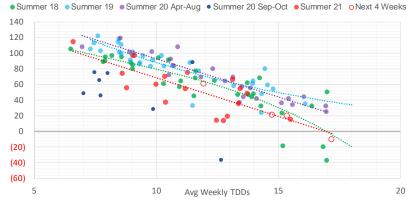


Weather Model Storage Projection

Next report and beyond

Week Ending	GWDDs	Week Storage Projection
30-Jul	14.7	21
06-Aug	12.0	61
13-Aug	17.2	-10
20-Aug	15.4	20

Weather Storage Model - Next 4 Week Forecast



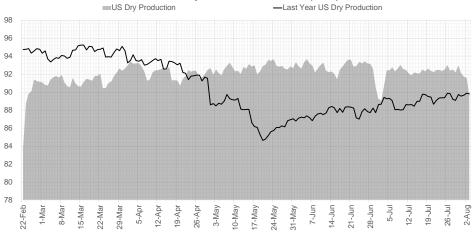
Go to larger image



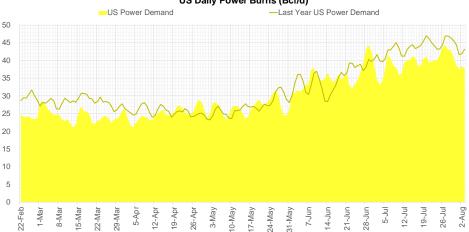


Supply - Demand Trends

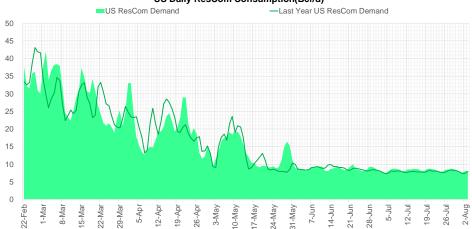
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



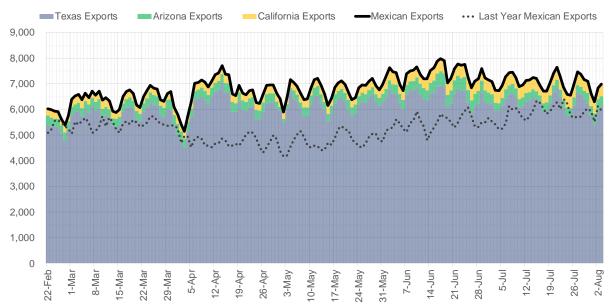
US Daily ResCom Consumption(Bcf/d)



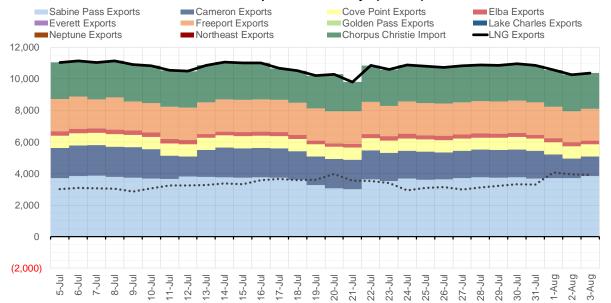
Source: Bloomberg



Mexican Exports (MMcf/d)







Source: Bloomberg





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

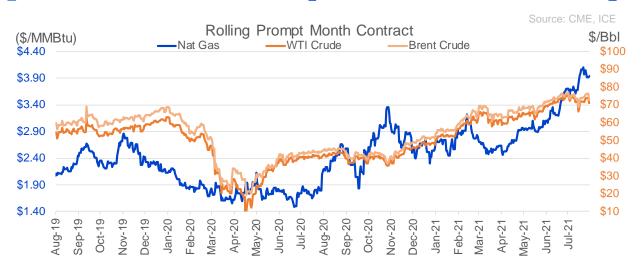
	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE	CONTRACT	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE
MONTH	YEAR	1 0 1/O/LEE	OTTAIL	VOL	MONTH	YEAR	1 01/OALL	OTTAIL	COMOLATIVE
9	2021	С	4.75	12457	10	2021	С	4.00	41612
9	2021	С	5.00	7397	10	2021	С	4.50	40293
9	2021	C	4.50	4902	10	2021	С	5.00	33964
9	2021	P	3.75	4508	10	2021	С	3.50	33004
9	2021	C	4.25	4369	10	2021	P	2.50	30039
10	2021	Ċ	5.00	3747	9	2021	С	4.00	29775
4	2022	P	2.50	2600	10	2021	Ċ	3.25	28230
3	2022	P	2.50	2500	10	2021	P	2.00	26497
9	2022	P	3.80	2055	10	2021	P	2.75	25913
9 10	2021	P			10	2021	P	3.50	24441
			3.75	2001	12	2021	Р	2.75	24392
10	2021	С	4.50	1987	10	2021	P	3.00	24211
12	2021	С	7.00	1806	9	2021	Р	2.50	23376
9	2021	P	4.00	1595	9	2021	Ċ	3.50	22932
9	2021	Р	3.50	1560	11	2021	Č	4.00	22029
9	2021	Р	3.40	1529	12	2021	C	4.00	21989
10	2021	С	4.00	1459	9	2021	P	3.00	21527
11	2021	С	3.75	1200	12	2021	P	2.50	20808
9	2021	Р	3.90	1170	9	2021	P	2.00	20427
10	2021	С	6.00	1154	10		P P		
2	2022	С	5.50	1049		2021	C	2.25	19800
1	2022	С	5.00	956	4	2022		3.00	19610
9	2021	С	4.00	955	9	2021	P	3.50	18997
9	2021	Р	3.55	875	9	2021	С	3.25	18994
9	2021	Р	3.60	864	9	2021	С	5.00	18738
10	2021	Р	3.50	862	10	2021	С	3.00	18501
9	2021	Р	3.25	842	11	2021	P	3.00	18138
12	2021	C	5.00	827	10	2021	С	6.00	17950
10	2021	Ċ	4.75	804	9	2021	P	3.25	17837
3	2022	Č	5.00	778	9	2021	С	4.25	17803
9	2022	P	3.00	770 701	9	2021	С	4.50	17154
12	2021	r P	3.50	678	10	2021	С	3.75	16850
		P			3	2022	С	5.00	16466
9	2021		3.45	667	12	2021	Р	3.00	16150
9	2021	С	4.20	614	9	2021	Р	2.75	15804
10	2021	P	3.60	607	11	2021	С	5.00	15315
3	2022	С	5.50	562	1	2022	С	5.00	15267
10	2021	Р	4.00	552	11	2021	С	3.75	15089
10	2021	Р	3.15	534	1	2022	С	4.00	14707
3	2022	С	4.00	514	2	2022	С	5.00	14632
10	2021	С	6.70	500	3	2022	С	3.00	14448
11	2021	Р	3.15	493	9	2021	С	4.75	13976
2	2022	Р	3.50	450	12	2021	Р	2.00	13889
9	2021	Р	3.30	447	9	2021	P	2.60	13814
2	2022	С	5.55	445	9	2021	P	1.90	13773
10	2021	С	3.25	438	11	2021	P	2.50	13647
11	2021	С	4.50	425	2	2022	C	4.00	13524
11	2021	P	3.60	419	3	2022	Č	4.00	13309
9	2021	Р	3.65	401	3	2022	P	2.50	13259
11	2021	C	4.60	341	5	2022	Ċ	3.00	13050
	2021	P	3.95	331	9	2022	P	2.25	12762



Nat Gas Futures Open Interest

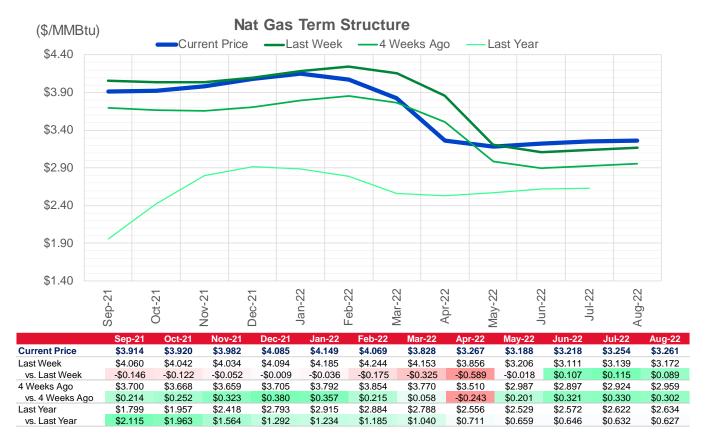
CME, and ICE Combined

CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MM											
CME Henry I				ICE Henry I			· · · · · · · · · · · · · · · · · · ·				
	Current	Prior	Daily Change		Current	Prior	Daily Change				
SEP 21	322762	326983	-4221	SEP 21	94718	94580	138				
OCT 21	157707	155806	1901	OCT 21	107344	107892	-548				
NOV 21	126270	124217	2053	NOV 21	72603	72562	41				
DEC 21	72169	73563	-1394	DEC 21	73924	73957	-33				
JAN 22	125672	124932	740	JAN 22	78033	78333	-300				
FEB 22	52249	51851	398	FEB 22	69133	69402	-269				
MAR 22	102649	102018	631	MAR 22	69314	68943	371				
APR 22	105520	105277	243	APR 22	67537	67471	66				
MAY 22	87502	86337	1165	MAY 22	66919	66945	-26				
JUN 22	30321	28840	1481	JUN 22	56224	56172	53				
JUL 22	23978	23748	230	JUL 22	55611	55572	39				
AUG 22	24323	24742	-419	AUG 22	56940	56870	70				
SEP 22	24333	24326	7	SEP 22	56693	56626	68				
OCT 22	59615	59829	-214	OCT 22	61461	61462	0				
NOV 22	25677	26150	-473	NOV 22	48769	48711	58				
DEC 22	22592	22190	402	DEC 22	50985	50829	156				
JAN 23	16473	16537	-64	JAN 23	30977	30902	75				
FEB 23	5483	5590	-107	FEB 23	26629	26577	51				
MAR 23	7743	7700	43	MAR 23	28328	28284	44				
APR 23	9601	9899	-298	APR 23	23190	23024	166				
MAY 23	5518	5506	12	MAY 23	24174	23950	224				
JUN 23	2329	2275	54	JUN 23	22399	22222	178				
JUL 23	2657	2598	59	JUL 23	22619	22493	125				
AUG 23	1831	1822	9	AUG 23	22577	22485	92				
SEP 23	2010	2036	-26	SEP 23	21998	21872	127				
OCT 23	2735	2678	57	OCT 23	24584	23484	1100				
NOV 23	1260	1213	47	NOV 23	23336	22411	925				
DEC 23	1750	1748	2	DEC 23	21868	21872	-4				
JAN 24	993	993	0	JAN 24	12891	12883	8				
FEB 24	870	838	32	FEB 24	11138	11000	138				





Market Report



		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	2.88	3.58	0.70
TETCO M3	\$/MMBtu	3.19	3.37	0.18
FGT Zone 3	\$/MMBtu	3.24	4.18	0.94
Zone 6 NY	\$/MMBtu	3.24	3.41	0.17
Chicago Citygate	\$/MMBtu	3.83	3.94	0.11
Michcon	\$/MMBtu	3.76	3.89	0.13
Columbia TCO Pool	\$/MMBtu	3.38	3.29	-0.09
Ventura	\$/MMBtu	3.79	3.87	0.08
Rockies/Opal	\$/MMBtu	3.70	3.82	0.11
El Paso Permian Basin	\$/MMBtu	3.71	3.87	0.16
Socal Citygate	\$/MMBtu	8.06	5.65	-2.41
Malin	\$/MMBtu	4.08	4.31	0.23
Houston Ship Channel	\$/MMBtu	3.96	4.09	0.13
Henry Hub Cash	\$/MMBtu	3.97	3.82	-0.15
AECO Cash	C\$/GJ	2.93	3.09	0.16
Station2 Cash	C\$/GJ	3.13	4.10	0.97
Dawn Cash	C\$/GJ	3.74	3.91	0.17

Source: CME, Bloomberg



			vs. 4 Weeks					
	Units	Current Price	VS	Last Week	vs	Ago	VS	s. Last Year
NatGas Jul21/Oct21	\$/MMBtu	0.321	V	-0.138		0.279		0.308
NatGas Oct21/Nov21	\$/MMBtu	0.060	_	-0.001		0.014		0.014
NatGas Oct21/Jan22	\$/MMBtu	0.232		0.015		0.037	_	-0.040
NatGas Apr22/Oct22	\$/MMBtu	0.001		0.027		0.010		-0.062
WTI Crude	\$/Bbl	71.26	•	-0.650	•	-3.900		30.250
Brent Crude	\$/BbI	72.89	•	-1.610	•	-4.270		28.740
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	213.58		-1.520	▼	-4.330		89.490
Propane, Mt. Bel	cents/Gallon	1.10		0.004	•	-0.015		0.594
Ethane, Mt. Bel	cents/Gallon	0.33		0.014		0.023		0.108
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

