

11 August 2021



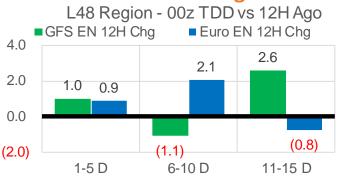
	С	urrent	Δ from YD		m 7D vg
WTI Prompt	\$	67.46	\$ (0.83)	~ \$	(0.7)

	_	urront	Δ from YD	∆ fro	m 7D
	C	Current	םו וווטוו ב	A	vg
Brent Prompt	\$	69.86	\$ (0.77)	- \$	(0.6)
Prompt	Ψ	00.00	Ψ (0.11)	Ψ	(0.0)

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Price Summary

Vs. 12H Ago



Vs. 24H Ago

L48 Region - 00z TDD vs 24H Ago GFS EN 24H Chg ■ Euro EN 24H Chg 5.0 2.2 0.2 0.0 (1.3)(1.9)(5.0)(4.1)(7.4)(10.0)1-5 D 6-10 D 11-15 D

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	91.6	- 0.65	▼ -0.39

	Current	Δ from YD	Δ from 7D Avg		
US ResComm	8.2	0.23	0.58		

	Current	Δ from YD	Δ from 7D Avg		
Net LNG Exports	10.3	1.03	a 0.29		

	Current	Δ from YD	Δ from 7D Avg		
US Power Burns	42.6	▼ -0.14	3.01		

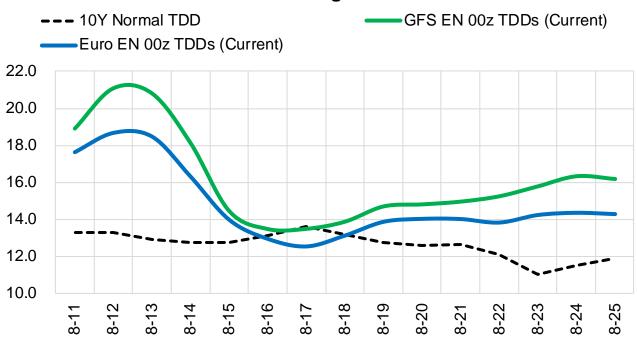
	Current	Δ from \	Δ from 7D Avg
Canadian Imports	5.3	a 0.04	4 • 0.33

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	7.1	- 0.09	0.10

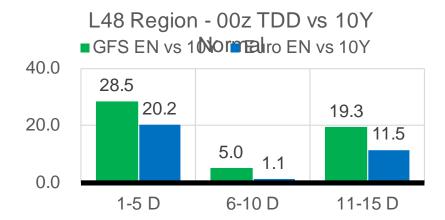


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	10-Aug	11-Aug	DoD	vs. 7D
Lower 48 Dry Production	91.8	92.5	91.8	92.1	92.5	92.3	91.6	▼-0.7	▼ -0.5
Canadian Imports	4.6	4.8	4.9	4.9	5.1	5.2	5.3	▲ 0.0	0.3
L48 Power	39.0	40.0	38.4	38.6	40.9	42.8	42.6	▼-0.1	2.7
L48 Residential & Commercial	7.8	7.6	7.2	7.2	7.8	8.0	8.2	0.2	a 0.6
L48 Industrial	21.0	21.3	21.4	21.5	21.6	21.4	21.2	▼-0.2	▼ -0.1
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	2.3	2.3	2.2	2.2	2.4	2.5	2.5	0.0	0.2
L48 Regional Gas Consumption	75.2	76.3	74.2	74.6	77.8	79.7	79.6	▼ -0.1	3.3
Net LNG Delivered	10.37	10.44	10.40	10.08	9.33	9.29	10.32	1.0	0.3
Total Mexican Exports	7.3	7.3	6.4	6.5	6.9	7.2	7.1	▼-0.1	▲ 0.2
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	3.6	3.2	5.7	5.8	3.6	1.3	-0.1		

EIA Storage Week Balances

	2-Jul	9-Jul	16-Jul	23-Jul	30-Jul	6-Aug	WoW	vs. 4W
Lower 48 Dry Production	92.2	91.8	92.4	92.4	92.5	91.9	▼-0.6	▼-0.4
Canadian Imports	5.1	5.1	5.2	4.9	5.5	5.1	▼ -0.5	▼-0.1
L48 Power	39.8	37.2	38.7	39.7	42.2	38.5	▼-3.7	▼ -1.0
L48 Residential & Commercial	8.6	8.2	8.4	8.4	8.3	7.9	▼ -0.5	▼ -0.5
L48 Industrial	21.1	19.4	19.5	19.5	20.7	20.5	▼ -0.3	0.7
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.4	2.1	2.2	2.3	2.4	2.2	▼ -0.2	▼ 0.0
L48 Regional Gas Consumption	76.9	71.9	74.0	75.1	78.7	74.1	▼ -4.6	▼-0.8
Net LNG Exports	11.2	11.0	10.8	10.5	10.8	10.6	▼ -0.3	▼-0.2
Total Mexican Exports	7.2	7.1	7.1	7.1	7.0	6.9	▼ 0.0	▼-0.1
Implied Daily Storage Activity	2.0	6.8	5.6	4.6	1.5	5.4	3.9	
EIA Reported Daily Storage Activity	2.3	7.9	7.0	5.1	1.9			
Daily Model Error	-0.2	-1.1	-1.4	-0.5	-0.4			

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	94.7	89.6	92.3	92.7	92.8	92.2	91.9	▼ -0.3	2.3
Canadian Imports	4.4	4.9	4.6	4.5	4.8	5.2	5.0	▼ -0.2	0.2
L48 Power	41.0	40.9	24.9	26.7	35.3	39.4	39.3	▼ -0.1	▼ -1.5
L48 Residential & Commercial	7.8	7.7	19.5	13.2	8.8	8.3	7.7	▼ -0.6	0.1
L48 Industrial	23.5	21.9	21.2	20.3	20.8	19.8	21.0	1.1	- 0.9
L48 Lease and Plant Fuel	5.2	5.0	5.1	5.1	5.1	5.1	5.1	▼ 0.0	0.1
L48 Pipeline Distribution	2.4	2.4	2.3	2.1	2.2	2.3	2.3	0.0	▼-0.1
L48 Regional Gas Consumption	79.9	77.7	73.0	67.2	72.1	75.0	75.4	0.5	▼-2.3
Net LNG Exports	5.2	4.0	11.5	10.8	10.2	10.8	10.2	▼ -0.6	▲ 6.1
Total Mexican Exports	5.3	6.0	6.7	6.8	7.4	7.0	7.0	▼ -0.1	1.0
Implied Daily Storage Activity	8.8	6.7	5.7	12.4	8.0	4.5	4.4		
EIA Reported Daily Storage Activity Daily Model Error									



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	DoD	vs. 7D
NRC Nuclear Daily Output	91.6	90.8	90.9	89.9	90.2	91.3	91.9	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	13.3	14.1	14.0	15.0	14.7	13.6	13.0	-0.6	-1.1
NRC % Nuclear Cap Utilization	93.1	92.3	92.4	91.4	91.7	92.8	93.4	0.6	1.1

Wind Generation Daily Average - MWh (EIA)

	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	DoD	vs. 7D
CALI Wind	2143	2569	3209	3051	2013	2483	1912	-572	-666
TEXAS Wind	2238	2665	5568	9348	17855	18246	18829	584	9510
US Wind	15175	21441	23390	40825	54359	47462	49061	1599	15286

Generation Daily Average - MWh (EIA)

	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	DoD	vs. 7D
US Wind	15175	21441	23390	40825	54359	47462	49061	1599	15286
US Solar	13502	14012	14607	14722	13245	14428	14461	33	375
US Petroleum	4162	3954	4277	4654	3835	4151	4187	36	15
US Other	8831	9027	8942	9047	9170	9274	10128	855	1080
US Coal	131981	130721	131872	129291	127777	131518	142603	11085	12076
US Nuke	93691	93547	93711	92859	93241	94174	94652	478	1115
US Hydro	28372	28164	27913	27143	24700	23813	25293	1479	-1392
US Gas	203061	201804	208466	205927	181054	183339	205346	22007	8071

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear Generation Weekly Average - GWh (NRC)

	2-Jul	9-Jul	16-Jul	23-Jul	30-Jul	6-Aug	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	89.1	89.5	90.7	90.7	89.3	90.7	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	15.7	15.4	14.2	14.2	15.6	14.2	-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)

	2-Jul	9-Jul	16-Jul	23-Jul	30-Jul	6-Aug	WoW	WoW Bcf/d Impact
CALI Wind	2588	2604	3004	2064	1905	2237	331	-0.1
TEXAS Wind	8326	3739	10817	7162	7913	5180	-2733	0.5
US Wind	27215	25696	36364	26446	29735	22378	-7356	1.2

Generation Weekly Average - MWh (EIA)

	2-Jul	9-Jul	16-Jul	23-Jul	30-Jul	6-Aug	WoW	WoW Bcf/d
					33 00.	· · · · · · · · · ·		Impact
US Wind	27215	25696	36364	26446	29735	22378	-7356	1.2
US Solar	14055	14165	14486	14023	13977	14080	103	0.0
US Petroleum	5142	4035	4282	3892	4729	4074	-654	0.1
US Other	8886	9159	9555	9336	9281	9022	-259	0.0
US Coal	136486	131306	131524	137617	146400	134732	-11669	2.0
US Nuke	92257	92359	93735	93488	92226	93225	999	-0.2
US Hydro	33030	30129	30421	30191	29205	27732	-1473	0.2
US Gas	208730	194610	199730	210468	224376	204452	-19924	

See National Wind and Nuclear daily charts

-0.5



NRC % Nuclear Cap Utilization

Market Report

92.6

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	94.3	91.1	81.8	88.7	90.0	91.1	90.6	1.1	-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	10.6	13.8	23.1	16.2	14.9	13.8	14.3	-1.1	0.5			

90.2

91.5

83.2

Wind Generation Monthly Average - MWh (Genscape)

95.8

	2Yr Ago	LY							
	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	2317	2661	3402	2913	2338	2309	2161	-29	-499
TEXAS Wind	8583	9610	12259	9675	7217	11493	9515	4276	-95
US Wind	27508	32109	46081	37299	29105	35865	32152	6760	43

Generation Monthly Average - MWh (EIA)

Concretion monthly / trolage	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	27508	32109	46081	37299	29105	35865	32152	▼-3712.7	43
US Solar	9349	12107	14488	14564	14195	14168	14172	4.2	2065
US Petroleum	5476	4593	3012	4149	4233	4126	4291	165	▼ -302
US Other	9243	9963	7439	8162	9324	9351	9380	2 9	▼ -583
US Coal	130212	121043	86422	121351	137225	134168	138464	4296	17421
US Nuke	100744	93271	85517	92175	92897	93796	93365	▼ -431	94
US Hydro	33889	30678	30677	32578	29936	26311	28579	2268	▼ -2099
US Gas	218554	225419	139477	188815	207790	198783	209351	2618	▼- 16068
US Total	536241	528918	413562	499435	524889	517007	530001	8948	1083



See National Wind and Nuclear daily charts



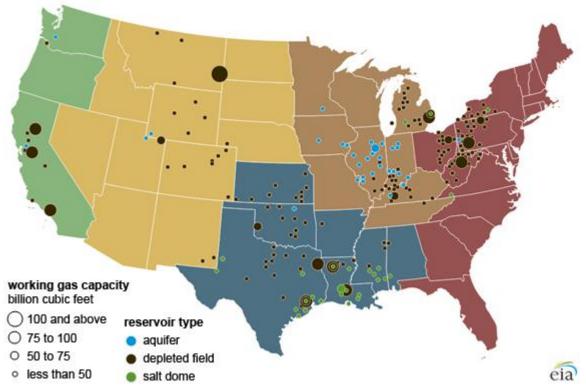
Regional S/D Models Storage Projection

Week Ending 6-Aug

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	5.1	1.0	6.0	42
East	2.3	1.5	3.7	26
Midwest	3.2	-0.3	2.9	20
Mountain	4.3	-4.3	0.0	0
South Central	-4.6	4.2	-0.4	-3
Pacific	-0.1	-0.1	-0.2	-2

^{*}Adjustment Factor is calcuated based on historical regional deltas

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



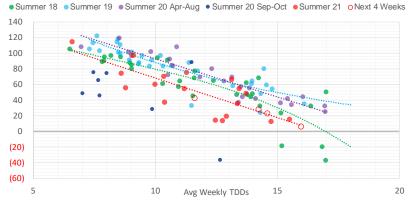


Weather Model Storage Projection

Next report	
and beyond	

Week Ending	GWDDs	Week Storage Projection
06-Aug	11.6	42
13-Aug	16.0	6
20-Aug	14.6	23
27-Aug	14.2	28

Weather Storage Model - Next 4 Week Forecast



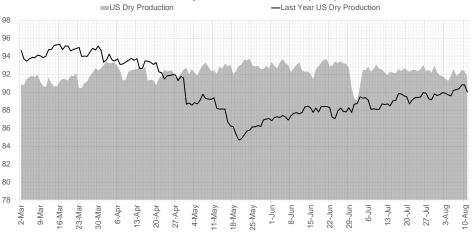
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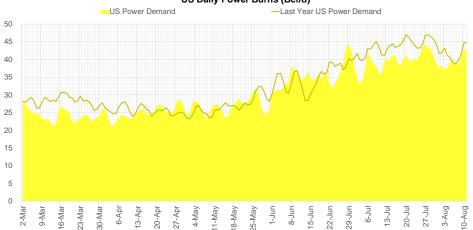


Supply - Demand Trends

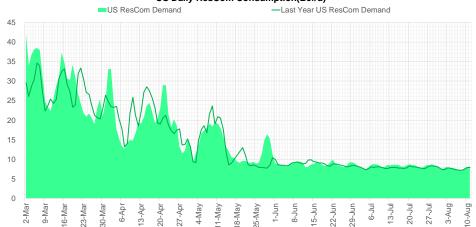
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



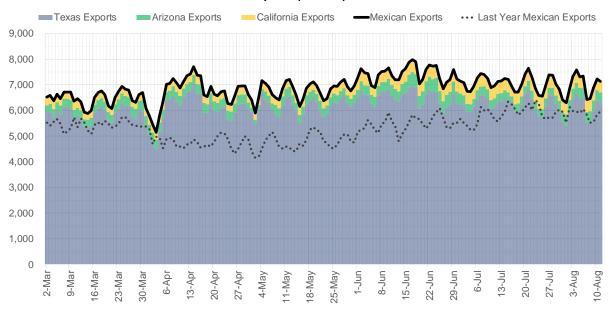
US Daily ResCom Consumption(Bcf/d)

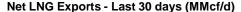


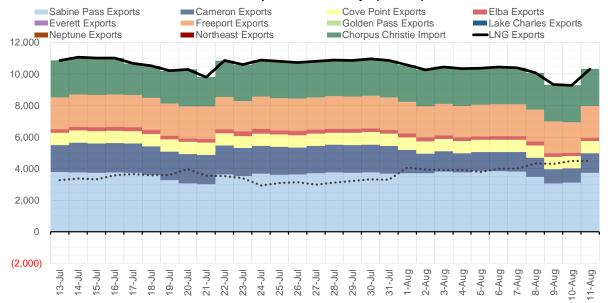
Source: Bloomberg



Mexican Exports (MMcf/d)







Source: Bloomberg



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

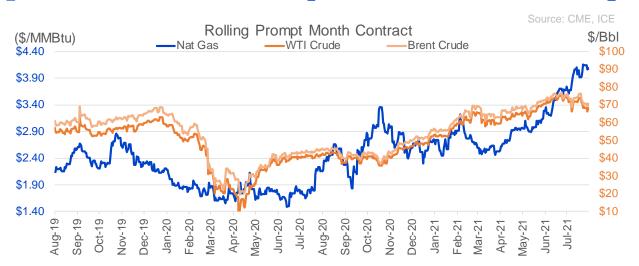
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
9	2021	С	4.50	7931	10	2021	С	4.50	43729
9	2021	P	4.00	3827	12	2021	P	2.75	41395
10	2021	С	4.50	3796	10	2021	С	4.00	40469
9	2021	P	3.90	3610	10	2021	С	5.00	35903
10	2021	C	5.00	2742	10	2021	С	3.50	33006
9	2021	P	3.80	2669	10 10	2021 2021	P P	3.50 2.50	30300 30039
9	2021	С	4.75	2565	10	2021	P P	2.50 2.50	29530
10	2021	С	4.75	2540	12	2021 2021	C	2.50 3.25	28230
9	2021	С	4.25	2381	10	2021	P	2.00	26845
11	2021	P	3.50	2258	9	2021	C	4.00	26583
11	2021	Р	3.25	2000	9	2021	C	5.00	26223
9	2021	Р	3.70	1803	10	2021	P	2.75	25765
9	2021	Р	3.75	1657	10	2021	P	3.00	25004
9	2021	Р	3.60	1656	9	2021	C	4.25	24769
10	2021	P	4.00	1614	12	2021	P	3.00	24680
9	2021	С	4.35	1601	9	2021	P	2.50	23385
10	2021	Р	3.50	1561	10	2021	C	6.00	22897
11	2021	С	4.75	1550	9	2021	C	3.50	22613
3	2022	С	5.00	1549	9	2021	P	3.00	22432
9	2021	Р	3.85	1441	11	2021	P	3.00	22398
10	2021	С	4.25	1391	11	2021	C	4.00	22136
11	2021	С	5.00	1253	12	2021	C	4.00	22091
4	2022	Р	3.00	1225	9	2021	C	4.75	21169
3	2022	С	5.50	1200	9	2021	P	2.00	20427
9	2021	С	5.00	1169	10	2021	Ċ	4.25	20324
11	2021	С	5.50	1169	10	2021	P	2.25	19900
10	2021	Р	3.75	1070	9	2021	P	3.25	19792
11	2021	С	5.25	1000	4	2022	Ċ	3.00	19610
4	2022	С	5.00	1000	9	2021	P	3.50	19527
9	2021	Р	3.50	943	9	2021	Ċ	3.25	18994
3	2022	Р	3.50	875	10	2021	Č	3.00	18502
5	2022	С	5.00	850	9	2021	Č	4.50	18417
6	2022	С	5.00	850	11	2021	Č	5.00	17943
7	2022	С	5.00	850	10	2021	Č	3.75	16815
8	2022	С	5.00	850	3	2022	Č	5.00	16768
9	2022	С	5.00	850	1	2022	Č	5.00	16090
10	2022	С	5.00	850	9	2021	P	2.75	15816
10	2021	С	6.00	770	2	2022	C	5.00	15076
4	2022	С	4.00	700	11	2021	Č	3.75	15001
3	2022	Р	3.25	675	1	2022	Ċ	4.00	14782
1	2022	Р	4.00	650	3	2022	Č	3.00	14448
11	2021	Р	4.00	600	9	2021	P	4.00	14298
12	2021	Р	4.00	600	3	2022	P	2.50	13969
5	2022	С	4.00	551	12	2021	P	2.00	13889
6	2022	C	4.00	550	9	2021	P	2.60	13814
7	2022	C	4.00	550	9	2021	Р	1.90	13773
8	2022	Č	4.00	550	10	2021	Р	3.25	13761
9	2022	Ċ	4.00	550	11	2021	Р	2.50	13697
10	2022	Ċ	4.00	550	3	2022	С	4	13585
-	-	-					Source	: CME, ICE	



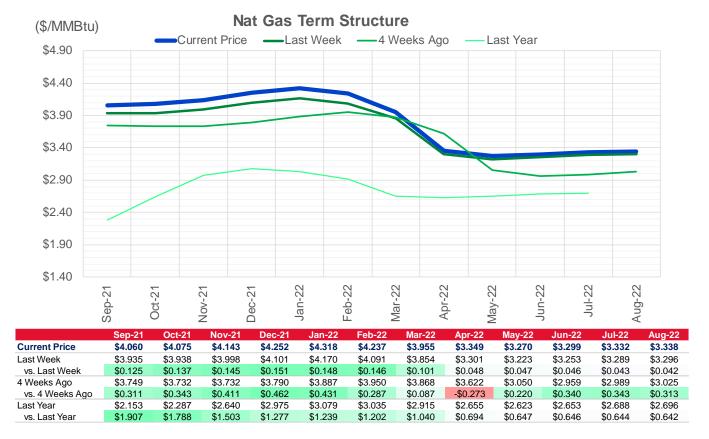
Nat Gas Futures Open Interest

CME, and ICE Combined

CIVIE, AND TOE 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		
SEP 21	198279	237886	-39607	SEP 21	91869	92222	-354		
OCT 21	185468	174864	10604	OCT 21	107206	107274	-68		
NOV 21	158265	146988	11277	NOV 21	69669	70025	-357		
DEC 21	74684	73601	1083	DEC 21	75490	75573	-83		
JAN 22	133172	133156	16	JAN 22	78185	78359	-174		
FEB 22	55085	56134	-1049	FEB 22	71379	71120	259		
MAR 22	106273	106752	-479	MAR 22	72809	72274	535		
APR 22	108281	108144	137	APR 22	68846	69031	-185		
MAY 22	92785	90675	2110	MAY 22	67325	67485	-160		
JUN 22	30393	30484	-91	JUN 22	55023	55227	-204		
JUL 22	26195	26418	-223	JUL 22	54663	55232	-570		
AUG 22	25157	25585	-428	AUG 22	55766	56029	-264		
SEP 22	25274	25102	172	SEP 22	55617	55787	-171		
OCT 22	65148	64015	1133	OCT 22	62368	62640	-273		
NOV 22	25935	25945	-10	NOV 22	49690	49525	165		
DEC 22	23523	23594	-71	DEC 22	52279	52047	232		
JAN 23	17265	16886	379	JAN 23	33101	32962	139		
FEB 23	6192	6124	68	FEB 23	27798	27614	184		
MAR 23	8363	8196	167	MAR 23	29695	29580	116		
APR 23	10683	9915	768	APR 23	24301	23985	315		
MAY 23	6228	5651	577	MAY 23	25209	25008	201		
JUN 23	4741	4035	706	JUN 23	23428	23331	98		
JUL 23	3775	3117	658	JUL 23	23539	23438	101		
AUG 23	3227	2574	653	AUG 23	23372	23256	116		
SEP 23	3682	3030	652	SEP 23	22871	22784	87		
OCT 23	4820	4169	651	OCT 23	24525	24425	101		
NOV 23	1323	1321	2	NOV 23	24457	24432	26		
DEC 23	1843	1839	4	DEC 23	22212	22186	27		
JAN 24	990	992	-2	JAN 24	13045	12967	78		
FEB 24	874	875	-1	FEB 24	11369	11355	14		







		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	4.57	3.38	-1.19
TETCO M3	\$/MMBtu	3.99	3.07	-0.92
FGT Zone 3	\$/MMBtu	4.09	4.14	0.05
Zone 6 NY	\$/MMBtu	4.09	3.15	-0.94
Chicago Citygate	\$/MMBtu	3.97	3.88	-0.09
Michcon	\$/MMBtu	3.96	3.83	-0.13
Columbia TCO Pool	\$/MMBtu	3.85	3.31	-0.54
Ventura	\$/MMBtu	3.96	3.82	-0.14
Rockies/Opal	\$/MMBtu	3.86	3.76	-0.10
El Paso Permian Basin	\$/MMBtu	3.90	3.84	-0.06
Socal Citygate	\$/MMBtu	6.96	5.34	-1.62
Malin	\$/MMBtu	4.12	4.21	0.09
Houston Ship Channel	\$/MMBtu	4.02	4.05	0.03
Henry Hub Cash	\$/MMBtu	4.12	3.82	-0.30
AECO Cash	C\$/GJ	1.44	3.17	1.73
Station2 Cash	C\$/GJ	1.52	4.06	2.54
Dawn Cash	C\$/GJ	3.98	3.84	-0.14

Source: CME, Bloomberg



					VS	. 4 Weeks		
	Units	Current Price	vs. L	ast Week		Ago	vs	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	0.486	(0.071		0.419		0.473
NatGas Oct21/Nov21	\$/MMBtu	0.069	(0.012		0.005		0.022
NatGas Oct21/Jan22	\$/MMBtu	0.239	(0.015		0.004	▼	-0.036
NatGas Apr22/Oct22	\$/MMBtu	-0.003	(800.0		0.004	▼	-0.052
WTI Crude	\$/Bbl	68.29	-2	2.270		-6.960		26.680
Brent Crude	\$/Bbl	70.63	-	1.780		-5.860		26.130
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	(0.000		0.000		0.000
Heating Oil	cents/Gallon	208.02	-4	4.620		-10.420		84.180
Propane, Mt. Bel	cents/Gallon	1.10	<u></u>	800.0		0.001		0.597
Ethane, Mt. Bel	cents/Gallon	0.34	<u></u>	0.010		0.037		0.113
Coal, PRB	\$/MTon	12.30	<u> </u>	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

