

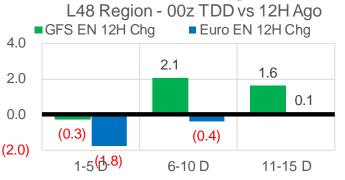
	С	urrent	Δ fro	m YD	Δ fron Αν	n 7D ⁄g
WTI Prompt	\$	70.86	\$	0.56	\$	0.7

	<u> </u>	urrent	۸ fro	m VD	∆ fro	m 7D
	C		Δ 110	טו ווו	P	√vg
Brent Prompt	\$	72.79	\$	0.56	\$	0.7

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
3.5 Euro EN 24H Chg

0.8

1.1

0.0

(0.2)

(1.7)

1-5 D 6-10 D (3.2)
11-15 D

Current		Δ from YD	Δ from 7D Avg		
US Dry Production	91.2	▲ 0.04	▼ -0.85		

	Current	Δ from YD	Δ from 7D Avg
US ResComm	8.3	- 0.16	0.04

Current		Δ from YD	Δ from 7D Avg		
Net LNG Exports	10.9	▲ 0.99	a 0.34		

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	39.0	- 0.50	▼ -0.94

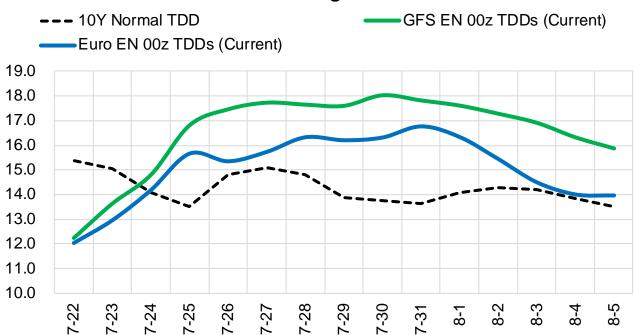
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.5	- 0.65	- 0.51

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	7.4	a 0.53	a 0.39

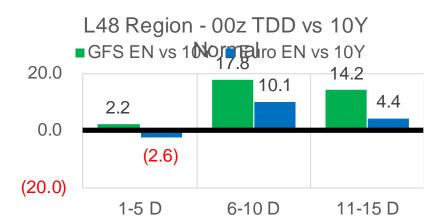


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	DoD	vs.7D
Lower 48 Dry Production	92.0	92.5	92.2	92.4	92.2	91.2	91.2	▲ 0.0	▼ -0.9
Canadian Imports	4.9	4.7	4.8	5.0	5.3	5.2	4.5	▼ -0.7	▼ -0.5
L48 Power	40.7	38.5	38.4	40.3	41.0	39.5	39.0	▼-0.5	▼-0.7
L48 Residential & Commercial	8.4	7.9	8.0	8.3	8.5	8.5	8.3	▼-0.2	0.1
L48 Industrial	20.2	20.2	20.4	20.5	20.3	20.1	19.8	▼-0.3	▼ -0.5
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.0	5.1	0.0	▼ 0.0
L48 Pipeline Distribution	2.3	2.2	2.2	2.3	2.3	2.3	2.2	▼ 0.0	▼ 0.0
L48 Regional Gas Consumption	76.7	73.9	74.1	76.4	77.2	75.4	74.4	▼-1.0	▼-1.2
Net LNG Delivered	11.03	10.67	10.52	10.21	10.30	9.87	10.86	1.0	0.4
Total Mexican Exports	7.1	6.8	6.6	7.0	7.5	6.9	7.4	0.5	0.4
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	2.1	5.8	5.8	3.8	2.5	4.3	3.1		

EIA Storage Week Balances

	11-Jun	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	WoW	vs. 4W
Lower 48 Dry Production	92.9	92.3	93.2	92.2	91.8	92.3	0.5	▼-0.1
Canadian Imports	4.8	5.1	4.7	5.2	5.1	5.2	△ 0.1	▲ 0.2
L48 Power	34.6	34.8	34.4	39.7	37.1	38.7	1.5	2.2
L48 Residential & Commercial	8.5	8.3	8.4	8.3	8.0	8.2	0.3	0.0
L48 Industrial	21.4	22.4	20.0	21.5	20.0	20.1	0.1	▼ -0.9
L48 Lease and Plant Fuel	5.1	5.1	5.2	5.1	5.1	5.1	0.0	0.0
L48 Pipeline Distribution	2.1	2.1	2.1	2.4	2.1	2.2	0.1	0.0
L48 Regional Gas Consumption	71.8	72.7	70.1	77.0	72.3	74.3	2.0	1.3
Net LNG Exports	9.4	9.6	10.3	11.2	11.0	10.8	▼ -0.2	0.3
Total Mexican Exports	7.3	7.5	7.6	7.2	7.1	7.1	▲ 0.0	▼-0.2
Implied Daily Storage Activity	9.1	7.6	10.0	2.0	6.5	5.2	-1.3	
EIA Reported Daily Storage Activity Daily Model Error	2.3 6.8	7.9 -0.2	10.9 -0.9	2.3 -0.3	7.9 -1.4			

Monthly Balances									
	2Yr Ago	LY					MTD		
	Jul-19	Jul-20	Mar-21	Apr-21	May-21	Jun-21	Jul-21	MoM	vs. LY
Lower 48 Dry Production	91.9	89.1	91.5	92.3	92.2	92.7	91.9	▼-0.9	2.8
Canadian Imports	5.0	4.4	4.8	4.7	4.5	4.9	5.1	0.2	0.7
L48 Power	40.8	43.7	24.3	25.0	27.1	35.3	38.5	3.1	▼-5.2
L48 Residential & Commercial	8.0	7.9	29.3	19.7	13.4	8.4	8.1	▼ -0.3	0.2
L48 Industrial	21.6	20.4	19.3	21.2	19.2	21.0	20.1	▼ -0.9	- 0.3
L48 Lease and Plant Fuel	5.0	4.9	5.0	5.1	5.1	5.1	5.1	▼ 0.0	0.2
L48 Pipeline Distribution	2.3	2.4	2.5	2.3	2.1	2.2	2.2	0.0	▼ -0.2
L48 Regional Gas Consumption	77.8	79.4	80.6	73.3	66.7	72.0	74.0	2.0	▼-5.4
Net LNG Exports	6.0	3.3	11.1	11.5	10.8	10.2	10.8	0.6	7.5
Total Mexican Exports	5.3	5.9	6.5	6.7	6.8	7.4	7.1	▼-0.3	1.2
Implied Daily Storage Activity EIA Reported Daily Storage Activity	7.8	5.0	-2.0	5.5	12.4	8.0	5.1		
Daily Model Error									





Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	DoD	vs. 7D
NRC Nuclear Daily Output	90.9	90.9	91.2	91.7	91.8	90.3	90.3	0.0	-0.8
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	13.9	14.0	13.7	13.2	13.1	14.6	14.6	0.0	8.0
NRC % Nuclear Cap Utilization	92.5	92.4	92.7	93.3	93.3	91.8	91.8	0.0	-0.9

Wind Generation Daily Average - MWh (Genscape)

	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	DoD	vs. 7D
CAISO Wind	3029	2564	2473	3077	3999	4056	4056	0	856
ERCOT	16685	11149	7936	6045	5997	4005	6742	2737	-1894
Genscape US Wind	32921	29310	16924	15127	18944	18944	18944	0	-3084

Generation Daily Average - MWh (Genscape)

	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	DoD	vs. 7D
Genscape US Wind	32921	29310	16924	15127	18944	18944	18944	0	-3084
Genscape US Solar	30812	25902	16136	18472	-13649	-13649	-13649	0	-24319
Genscape US Other	5808	5101	4893	4842	3627	3627	3627	0	-1022
Genscape US Coal	138617	130998	127904	133411	128681	128681	128681	0	-2701
Genscape US Nuke	94882	94804	95153	95642	95060	95060	95060	0	-40
Genscape US Hydro	23439	23676	23882	23987	24010	24010	24010	0	176
Genscape US Gas	244961	229625	225412	239161	217951	217951	217951	0	-11226

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear Generation Weekly Average - GWh (NRC)

	11-Jun	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	88.6	86.7	89.9	89.1	89.5	90.7	1.2	-0.2
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	16.3	18.1	15.0	15.7	15.4	14.2	-1.2	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

Wind Generation Weekly Average - MWh (Genscape)

	11-Jun	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	WoW	WoW Bcf/d Impact
CAISO Wind	4607	3723	3254	4655	4583	4245	-338	0.1
ERCOT	17072	10749	16549	10225	6583	13940	7357	-1.2
Genscape US Wind	43337	32707	50972	25398	24364	36668	12304	-2.1

Generation Weekly Average - MWh (Genscape)

	11-Jun	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	WoW	WoW Bcf/d Impact
Genscape US Wind	43337	32707	50972	25398	24364	36668	12304	-2.1
Genscape US Solar	15643	7817	12070	24039	15619	21148	5528	-0.9
Genscape US Other	5942	5201	4746	4728	4754	5151	397	-0.1
Genscape US Coal	118938	120230	118888	132762	121436	126462	5026	-0.8
Genscape US Nuke	92667	90822	93987	93205	93419	94570	1151	-0.2
Genscape US Hydro	32469	29459	30022	24181	23145	22869	-277	0.0
Genscape US Gas	212241	210769	202074	238370	218250	227817	9568	

See National Wind and Nuclear daily charts



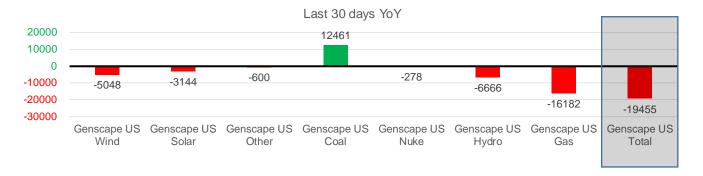
Monthly Average Generation Data

	2Yr Ago	2Yr Ago LY						MTD				
	Same 30 days	Same 30 days	Apr-21	May-21	Jun-21	Jul-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY			
NRC Nuclear Daily Output	95.0	91.8	75.9	81.8	88.7	90.3	90.0	1.6	-1.8			
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	9.9	13.0	29.0	23.1	16.2	14.6	14.8	-1.6	1.8			
NRC % Nuclear Cap Utilization	96.6	93.4	77.1	83.2	90.2	91.8	91.5	1.6	-1.8			

Wind Generation Monthly Average - MWh (Genscape)

	2Yr Ago LY					MID				
	Same 30 days	Same 30 days	Apr-21	May-21	Jun-21	Jul-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY	
CAISO Wind	3499	3385	4009	3984	3994	4074	4131	80	746	
ERCOT	10306	13800	13820	15379	12995	9470	10403	-3525	-3397	
Genscape US Wind	29930	34534	50942	46211	36758	27223	29486	-9535	-5048	

Generation Monthly Average - MWN (Genscape) 2Yr Ago LY MTD									
	Same 30 days	Same 30 days	Apr-21	May-21	Jun-21	Jul-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
Genscape US Wind	29930	34534	50942	46211	36758	27223	29486	2262.5	▼ -5048
Genscape US Solar	21537	19755	11261	15499	14357	15004	16611	1606	▼ -3144
Genscape US Other	4968	5361	4512	5256	5178	4789	4762	▼ -27	▼ -600
Genscape US Coal	139368	114564	73683	87336	119945	126785	127025	240	12461
Genscape US Nuke	97043	94324	79842	85659	92805	94298	94046	▼ -252	▼ -278
Genscape US Hydro	32496	30544	27386	27514	29334	23303	23878	575	▼ -6666
Genscape US Gas	227755	241373	152976	160888	212447	224980	225191	8850	▼-16182
Genscape US Total	553097	540455	400602	428362	510825	516382	520999	15438	▼ -19455



See National Wind and Nuclear daily charts



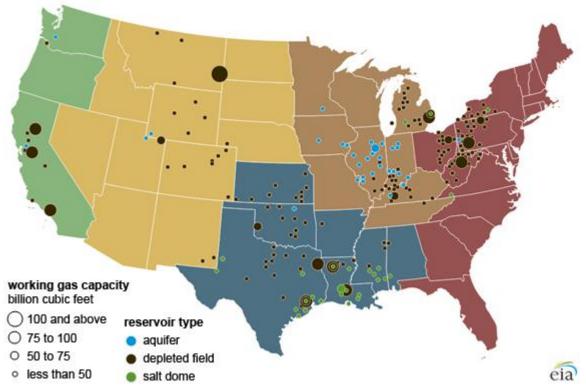
Regional S/D Models Storage Projection

Week Ending 16-Jul

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	4.9	1.4	6.3	44
East	1.5	1.6	3.0	21
Midwest	3.5	-0.2	3.3	23
Mountain	4.6	-4.1	0.5	4
South Central	-4.4	3.9	-0.5	-3
Pacific	-0.2	0.1	-0.1	-1

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

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



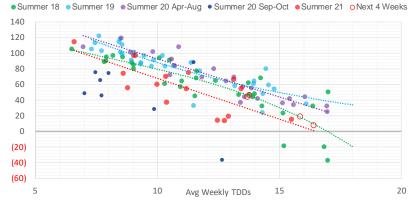


Weather Model Storage Projection

Next report
and beyond

Week Ending	GWDDs	Week Storage Projection
16-Jul	13.7	44
23-Jul	13.8	46
30-Jul	16.4	8
06-Aug	15.9	19

Weather Storage Model - Next 4 Week Forecast



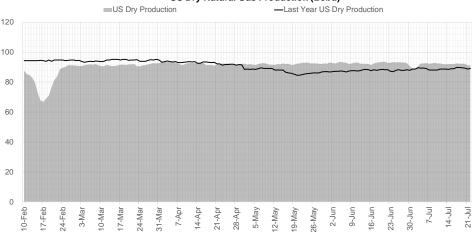
Go to larger image



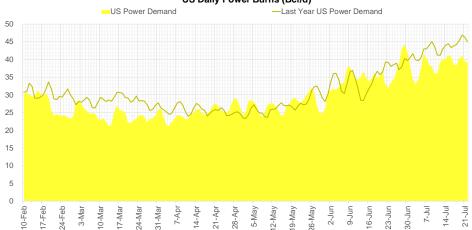


Supply - Demand Trends

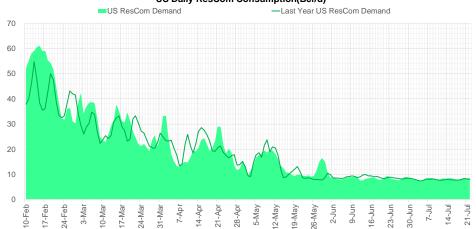
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



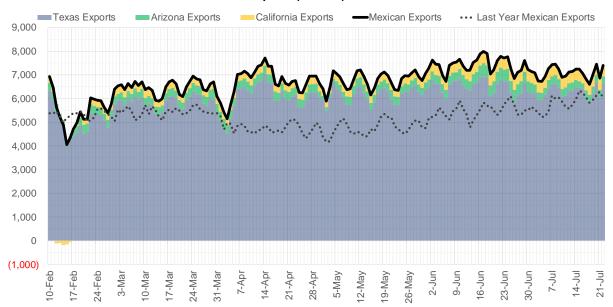
US Daily ResCom Consumption(Bcf/d)



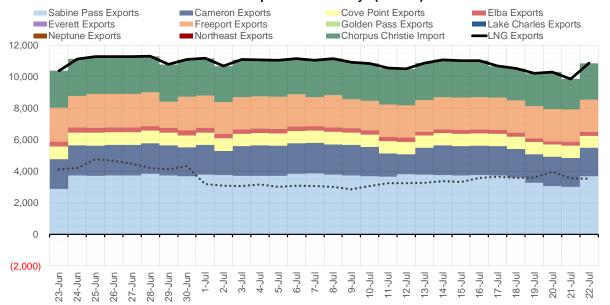
Source: Bloomberg



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

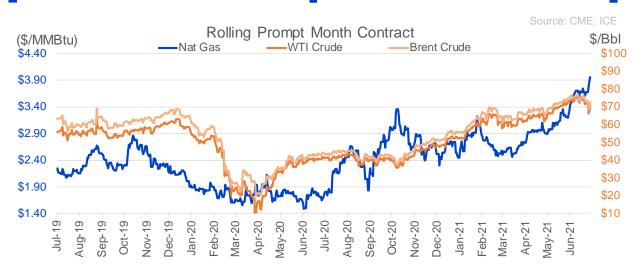
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
			4.00			0004	0	4.00	44050
8	2021	С	4.00	6294	8 10	2021 2021	C C	4.00 4.00	44653 42975
10	2021	P	3.25	5440	8	2021	C	3.50	40825
10	2021	С	4.50	4866	9			4.00	
10	2021	P	2.50	4774		2021	С		34538
8	2021	P	3.75	4592	10	2021	С	5.00	34463
8	2021	С	4.50	4572	10	2021	C P	3.50	33869
8	2021	С	4.25	4489	10	2021	P P	2.50	31924
9	2021	С	3.90	3654	8	2021		2.50	29350
10	2021	С	4.00	3592	10	2021	С	3.25	28363
9	2021	С	4.75	3211	8	2021	P P	3.00	27649
9	2021	С	4.25	3024	10	2021		2.75	26643
8	2021	Р	3.80	2809	10	2021	P	2.00	26294
8	2021	С	4.15	2764	10	2021	С	4.50	25694
9	2021	С	4.00	2709	8	2021	P	3.25	24786
8	2021	С	3.85	2585	8	2021	С	3.75	24746
9	2021	Р	3.50	2497	9	2021	P	2.50	23377
10	2021	Р	3.50	2446	9	2021	С	3.50	23280
9	2021	С	4.50	2408	8	2021	С	3.25	23035
9	2021	Р	3.40	2346	11	2021	C	4.00	22471
10	2021	С	5.00	2333	10	2021	Р	3.00	22252
8	2021	P	3.85	2210	8	2021	Р	3.50	22094
8	2021	P	3.70	1927	12	2021	С	4.00	21400
8	2021	P	3.50	1613	8	2021	С	4.50	21266
8	2021	C	4.40	1601	9	2021	Р	3.00	21164
9	2021	P	3.25	1551	9	2021	Р	2.00	20427
9	2021	Ċ	5.00	1447	10	2021	Р	2.25	19810
10	2021	P	2.25	1434	4	2022	С	3.00	19760
10	2021	P	2.75	1434	8	2021	Р	2.00	19668
11	2021	P	3.00	1335	8	2021	Р	2.90	19603
8	2021	C	3.50	1201	8	2021	Р	2.25	19478
10	2021	C	4.25		9	2021	С	3.25	18993
				1175	10	2021	С	3.00	18501
11	2021	C P	4.00	1162	8	2021	Р	2.75	18483
10	2021		3.75	1161	10	2021	Р	3.50	17628
8	2021	P	3.55	1159	8	2021	Р	3.40	17534
9	2021	С	3.95	1107	11	2021	Р	3.00	16940
4	2022	P	2.25	1100	10	2021	С	3.75	16841
3	2022	С	4.00	1045	9	2021	С	4.50	16377
11	2021	С	4.25	1031	10	2021	С	6.00	16049
11	2021	С	6.00	1009	3	2022	С	5.00	15967
12	2021	С	6.00	1002	9	2021	Р	2.75	15821
10	2021	С	4.60	1000	8	2021	С	3.00	15767
11	2021	Р	2.50	1000	8	2021	С	4.25	15365
3	2022	Р	2.25	1000	8	2021	С	3.30	15356
3	2022	С	5.00	998	11	2021	C	3.75	15342
9	2021	Р	3.75	963	1	2022	Ċ	4.00	14948
8	2021	С	4.75	892	9	2021	Ċ	4.25	14832
12	2021	C	4.50	885	3	2022	Č	3.00	14448
9	2021	Р	3.60	870	9	2021	Ċ	5.00	14355
8	2021	С	4.05	869	1	2022			13946
							C Source	: CME, ICE	



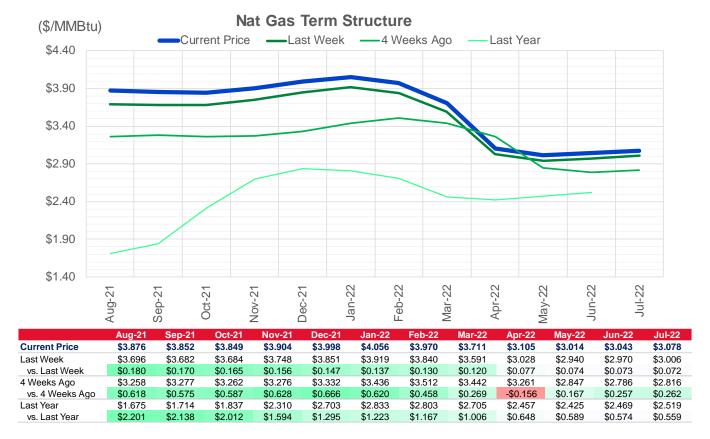
Nat Gas Futures Open Interest

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	57328	73970	-16642	AUG 21	84310	85177	-867
SEP 21	324461	316398	8063	SEP 21	89490	88304	1186
OCT 21	160149	157726	2423	OCT 21	102687	101766	921
NOV 21	108924	107896	1028	NOV 21	72511	72145	366
DEC 21	71009	70435	574	DEC 21	71350	70907	443
JAN 22	117998	118467	-469	JAN 22	77853	77570	283
FEB 22	48231	47889	342	FEB 22	67403	66796	607
MAR 22	98567	98174	393	MAR 22	68111	67866	245
APR 22	99306	98941	365	APR 22	65145	64884	261
MAY 22	87367	86773	594	MAY 22	67282	67760	-478
JUN 22	27561	27148	413	JUN 22	55552	55546	6
JUL 22	22211	21845	366	JUL 22	54686	54019	667
AUG 22	23835	23631	204	AUG 22	56018	55452	567
SEP 22	23949	23692	257	SEP 22	55592	55132	460
OCT 22	61074	60937	137	OCT 22	59013	58707	307
NOV 22	25090	25096	-6	NOV 22	47917	47708	209
DEC 22	20649	20998	-349	DEC 22	50495	50210	285
JAN 23	15449	14254	1195	JAN 23	29580	30207	-627
FEB 23	5448	5463	-15	FEB 23	25591	25494	97
MAR 23	7887	7573	314	MAR 23	28418	28273	145
APR 23	9465	8926	539	APR 23	22016	22036	-21
MAY 23	5928	5862	66	MAY 23	23408	23183	225
JUN 23	2344	2314	30	JUN 23	21534	21462	71
JUL 23	2633	2593	40	JUL 23	21617	21563	54
AUG 23	1782	1760	22	AUG 23	21653	21502	151
SEP 23	2065	1992	73	SEP 23	21213	21142	71
OCT 23	2584	2510	74	OCT 23	22531	22451	79
NOV 23	1109	1109	0	NOV 23	20201	20342	-141
DEC 23	1750	1758	-8	DEC 23	21565	21705	-141
JAN 24	993	793	200	JAN 24	12665	12693	-28







		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	3.43	3.37	-0.06
TETCO M3	\$/MMBtu	3.38	3.28	-0.11
FGT Zone 3	\$/MMBtu	3.26	3.74	0.48
Zone 6 NY	\$/MMBtu	3.26	3.23	-0.03
Chicago Citygate	\$/MMBtu	3.75	3.51	-0.24
Michcon	\$/MMBtu	3.74	3.47	-0.27
Columbia TCO Pool	\$/MMBtu	3.33	3.03	-0.31
Ventura	\$/MMBtu	3.62	3.44	-0.18
Rockies/Opal	\$/MMBtu	3.80	3.42	-0.38
El Paso Permian Basin	\$/MMBtu	3.70	3.51	-0.19
Socal Citygate	\$/MMBtu	7.47	5.34	-2.13
Malin	\$/MMBtu	3.93	3.99	0.06
Houston Ship Channel	\$/MMBtu	3.88	3.64	-0.24
Henry Hub Cash	\$/MMBtu	3.90	3.44	-0.47
AECO Cash	C\$/GJ	3.25	2.79	-0.46
Station2 Cash	C\$/GJ	3.17	3.80	0.63
Dawn Cash	C\$/GJ	3.75	3.49	-0.26

Source: CME, Bloomberg



					VS	. 4 Weeks		
	Units	Current Price	vs.	Last Week		Ago	vs	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	0.318		0.280		0.308		0.301
NatGas Oct21/Nov21	\$/MMBtu	0.055	•	-0.011		0.004		0.005
NatGas Oct21/Jan22	\$/MMBtu	0.206		-0.038		-0.016		-0.074
NatGas Apr22/Oct22	\$/MMBtu	-0.019		-0.014		-0.040		-0.089
WTI Crude	\$/Bbl	70.30		-2.830		-2.780		28.400
Brent Crude	\$/Bbl	72.23		-2.530		-2.960		27.940
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	208.70		-5.650		-7.240		81.630
Propane, Mt. Bel	cents/Gallon	1.08		-0.014		0.121		0.590
Ethane, Mt. Bel	cents/Gallon	0.31		0.007		0.037		0.100
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





