

20 July 2021



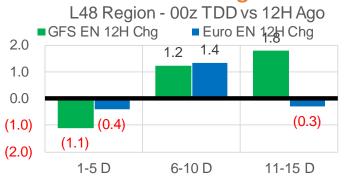
	С	urrent	Δfro	om YD	_	m 7D vg
WTI Prompt	\$	66.66	4	0.24	- \$	(5.0)

	0	urront	۸ fro	m VD	Δ from 7D			
	Current	urreni	Δ 110	טו ווו	Avg			
Brent Prompt	\$	68.74	\$	0.12	~ \$	(4.7)		

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 ■ Euro EN 24H Chg 10.0 4.7 3.5 2.9 5.0 0.7 0.0 (0.6)(5.0)(4.9)(10.0)1-5 D 6-10 D 11-15 D

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	90.7	▼ -1.61	▼ -1.34

	Current	Δ from YD	Δ from 7D Avg		
US ResComm	8.5	▲ 0.07	a 0.19		

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	10.1	▼ -0.19	▼ -0.64

	40.8	Δfı	rom YD	Δfı	Δ from 7D Avg		
US Power Burns	40.8		0.56		0.96		

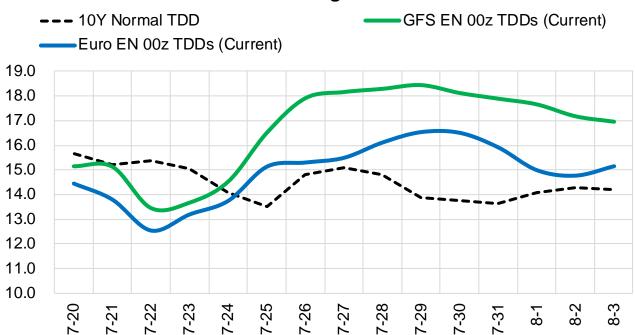
	Current	Δ from YD	Δ from 7D Avg		
Canadian Imports	5.2	a 0.16	0.10		

	Current	∆ fr	om YD	rom 7D Avg
Mexican Exports	7.2		0.18	0.15

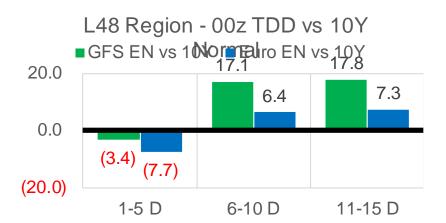


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	DoD	vs.7D
Lower 48 Dry Production	92.1	92.0	92.0	92.2	92.0	92.4	90.7	▼-1.6	▼-1.4
Canadian Imports	5.7	5.3	4.9	4.7	4.8	5.1	5.2	0.2	▲ 0.2
L48 Power	40.1	41.2	40.7	38.3	38.5	40.2	40.8	0.6	1.0
L48 Residential & Commercial	8.5	8.5	8.4	7.9	8.0	8.4	8.5	0.1	a 0.2
L48 Industrial	19.9	20.1	20.3	20.3	20.4	20.5	20.2	▼-0.3	▼ 0.0
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	2.3	2.3	2.3	2.2	2.2	2.3	2.3	0.0	0.1
L48 Regional Gas Consumption	75.9	77.2	76.8	73.7	74.2	76.6	76.8	0.3	1.1
Net LNG Delivered	11.08	11.02	11.03	10.67	10.52	10.34	10.15	▼ -0.2	▼ -0.6
Total Mexican Exports	7.3	7.2	7.1	6.8	6.7	7.0	7.2	0.2	▲ 0.2
Implied Daily Storage Activity	3.6	1.9	1.9	5.7	5.5	3.5	1.8		
EIA Reported Daily Storage Activity Daily Model Error									

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	91.7	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	a 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	72.2	74.3	2.1	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	91.8	▼-0.9	2.8
Canadian Imports	5.0	4.4	4.8	4.7	4.5	4.9	5.1	0.3	0.7
L48 Power	40.8	43.7	24.3	25.0	27.1	35.3	38.4	3.0	▼-5.3
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	73.9	1.9	▼ -5.5
Net LNG Exports	6.0	3.3	11.1	11.5	10.8	10.2	10.8	0.7	7.6
Total Mexican Exports	5.3	5.9	6.5	6.7	6.8	7.4	7.1	▼-0.4	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)

	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	DoD	vs. 7D
NRC Nuclear Daily Output	91.8	91.8	90.9	90.9	91.2	91.7	91.7	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	13.1	13.1	13.9	14.0	13.7	13.2	13.2	0.0	-0.3
NRC % Nuclear Cap Utilization	93.3	93.3	92.5	92.4	92.7	93.3	93.3	0.0	0.3

Wind Generation Daily Average - MWh (Genscape)

	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	DoD	vs. 7D
CAISO Wind	4583	4583	4583	4583	4583	4583	4583	0	0
ERCOT	19158	19042	16685	11149	7936	6045	2304	-3741	-11032
Genscape US Wind	50202	42372	32921	29310	29310	29310	29310	0	-6261

Generation Daily Average - MWh (Genscape)

	14-Jul	15-Jul	16-Jul	17-Jul	18-Jul	19-Jul	20-Jul	DoD	vs. 7D
Genscape US Wind	50202	42372	32921	29310	29310	29310	29310	0	-6261
Genscape US Solar	21335	24390	30812	25902	25902	25902	25902	0	195
Genscape US Other	5599	5447	5808	5101	5101	5101	5101	0	-259
Genscape US Coal	131601	136413	138617	130998	130998	130998	130998	0	-2273
Genscape US Nuke	95679	95660	94882	94804	94804	94804	94804	0	-302
Genscape US Hydro	22848	22947	23439	23676	23676	23676	23676	0	299
Genscape US Gas	233682	244181	244376	228611	228611	228611	228611	0	-6068

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	90.6	1.1	-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	14.3	-1.1	
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	4583	0	0.0
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

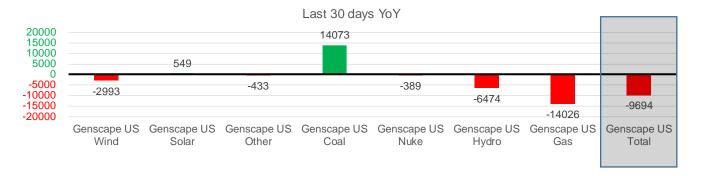
Monthly Average Generation Data

Nuclear Generation Monthly A	y Average - GWh (NRC) 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	95.1	91.9	75.9	81.8	88.7	90.3	90.0	1.6	-1.9		
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	9.8	12.9	29.0	23.1	16.2	14.6	14.8	-1.6	1.9		
NRC % Nuclear Cap Utilization	96.7	93.5	77.1	83.2	90.2	91.8	91.5	1.6	-1.9		

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	3556	3384	4009	3984	3994	4583	4386	589	1002
ERCOT	10834	14412	13820	15379	12995	9695	10842	-3300	-3570
Genscape US Wind	30794	35445	50942	46211	36758	29898	32452	-6860	-2993

Generation Monthly Average -	Generation Monthly Average - MWh (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	30794	35445	50942	46211	36758	29898	32452	2553.4	▼ -2993			
Genscape US Solar	21540	19951	11261	15499	14357	20707	20500	-207	549			
Genscape US Other	4959	5333	4512	5256	5178	5002	4900	▼ -102	▼ -433			
Genscape US Coal	136472	112592	73683	87336	119945	126746	126665	▼ -81	14073			
Genscape US Nuke	97193	94367	79842	85659	92805	94150	93978	▼ -172	▼ -389			
Genscape US Hydro	32658	30749	27386	27514	29334	23189	24275	1 085	▼ -6474			
Genscape US Gas	224813	238551	152976	160888	212447	225768	224525	6508	▼ -14026			
Genscape US Total	548430	536987	400602	428362	510825	525460	527293	10462	▼ -9694			



See National Wind and Nuclear daily charts



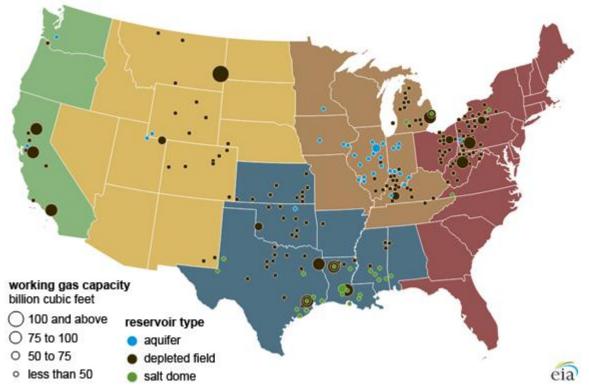
Regional S/D Models Storage Projection

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	1.5	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	-0.3	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)



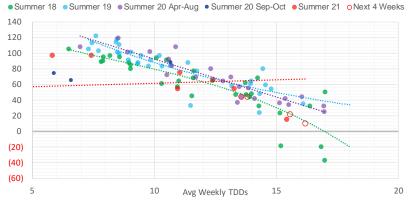


Weather Model Storage Projection

Next r	eport
and b	eyond

Week Ending	GWDDs	Week Storage Projection
16-Jul	13.6	44
23-Jul	13.8	44
30-Jul	16.2	10
06-Aug	15.6	22

Weather Storage Model - Next 4 Week Forecast



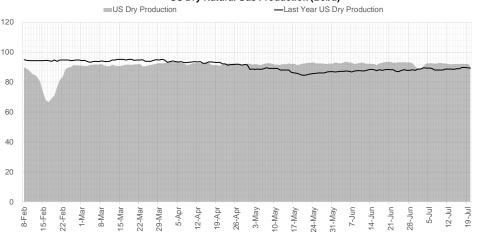
Go to larger image



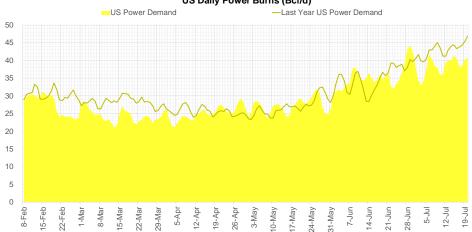


Supply - Demand Trends

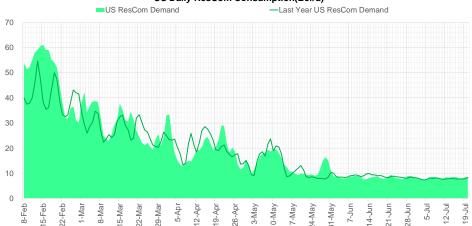
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



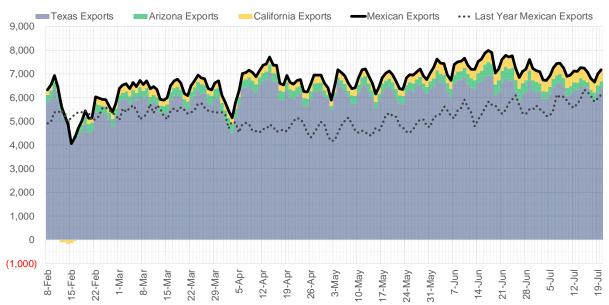
US Daily ResCom Consumption(Bcf/d)



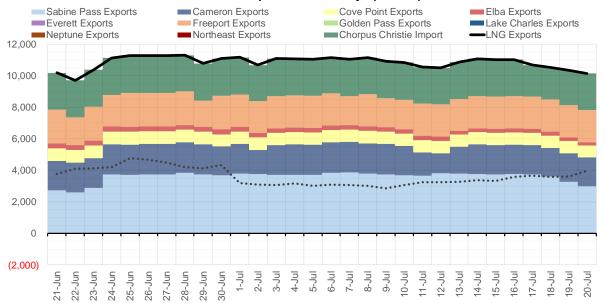
Source: Bloomberg



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

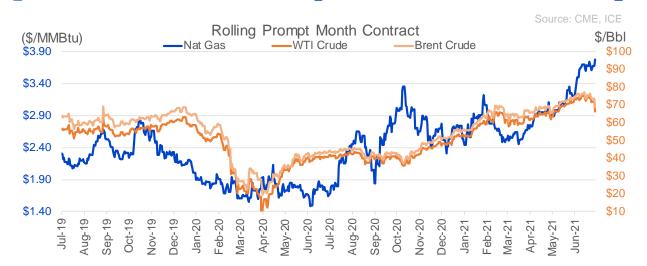
CONTRACT	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE	CONTRACT	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE
MONTH	YEAR	TOTOALL	OTIVILL	VOL	MONTH	YEAR	1 01/CALL	STRIKE	COMOLATIVE
8	2021	Р	3.50	7108	8	2021	С	4.00	48116
10	2021	С	4.50	5812	10	2021	С	4.00	43690
8	2021	C	4.00	5243	8	2021	С	3.50	40893
9	2021	C	4.00	4950	9	2021	С	4.00	36473
8	2021	P	3.40	4501	10	2021	С	3.50	34269
9	2021	C	4.75	4200	10	2021	С	5.00	33643
8	2021	Ċ	4.25	3714	10	2021	Р	2.50	32175
8	2021	P	3.75	3314	8	2021	Р	2.50	29351
8	2021	Р	3.55	2777	10	2021	С	3.25	28363
10	2021	C	7.00	2701	8	2021	Р	3.00	27650
10	2021	Č	5.00	2647	10	2021	Р	2.75	27182
9	2021	C	4.25	2506	10	2021	Р	2.00	26294
10	2021	C	4.25	2331	8	2021	Р	3.25	25005
					8	2021	C	3.75	24970
8	2021	С	4.50	2077	10	2021	Ċ	4.50	24834
8	2021	Р	3.35	2040	8	2021	Č	4.50	23903
8	2021	P	3.25	2021	9	2021	Č	3.50	23570
8	2021	Р	3.20	1837	8	2021	Č	3.25	23526
9	2021	С	5.00	1816	11	2021	Č	4.00	23309
3	2022	Р	2.00	1801	9	2021	P	2.50	23267
4	2022	Р	2.00	1800	10	2021	P	3.00	23076
9	2021	Р	3.50	1770	12	2021	C	4.00	21935
10	2021	Р	3.00	1743	8	2021	P	3.50	20979
8	2021	Р	3.60	1684	9	2021	P	3.00	20748
10	2021	С	4.25	1642	9	2021	P P	2.00	20748 20427
9	2021	С	4.50	1639	10	2021	P	2.00	19875
11	2021	Р	3.25	1600			C		
8	2021	С	3.25	1550	4	2022	P	3.00	19785
3	2022	Р	2.50	1500	8	2021	P P	2.00	19668
12	2022	С	3.50	1500	8	2021	P P	2.90	19603
10	2021	P	2.75	1435	8	2021		2.25	19478
11	2021	Р	3.00	1376	9	2021	С	3.25	19002
9	2021	C	3.75	1209	10	2021	С	3.00	18500
3	2022	P	2.75	1200	8	2021	P	2.75	18483
11	2021	C	5.00	1103	8	2021	P	3.40	17730
1	2022	P	3.00	1075	9	2021	С	4.50	17282
9	2022	P	3.00	1073	10	2021	С	3.75	17033
9	2021	C			11	2021	P	3.00	16014
		P	4.65	1000	3	2022	С	5.00	15937
11	2021		2.75	1000	10	2021	С	6.00	15898
5	2022	С	3.50	1000	8	2021	С	3.00	15825
8	2021	С	3.75	992	9	2021	Р	2.75	15821
8	2021	С	4.35	973	8	2021	С	3.30	15351
10	2021	Р	2.50	965	11	2021	С	3.75	15342
9	2021	Р	3.40	935	9	2021	С	4.25	15135
8	2021	С	3.95	900	10	2021	Р	3.50	14715
10	2021	С	3.75	893	1	2022	С	4.00	14498
9	2021	С	3.90	856	3	2022	С	3.00	14448
8	2021	С	3.80	853	9	2021	C	5.00	14446
10	2021	Р	3.50	851	3	2022	C	4.00	14001
10	2021	Р	3.10	850	12	2021		: CME, ICE	



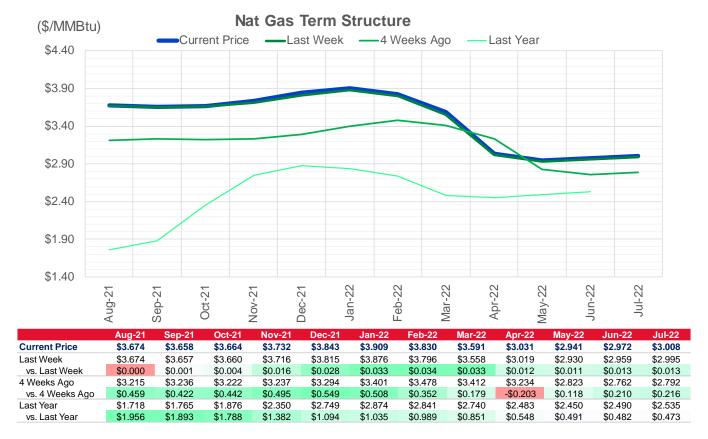
Nat Gas Futures Open Interest

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	86035	102132	-16097	AUG 21	90123	92900	-2777
SEP 21	311652	313737	-2085	SEP 21	87872	86298	1573
OCT 21	156040	155885	155	OCT 21	100098	99788	310
NOV 21	106752	107445	-693	NOV 21	73394	73306	89
DEC 21	70407	70725	-318	DEC 21	70624	70319	305
JAN 22	119049	118921	128	JAN 22	78363	78259	104
FEB 22	47777	47978	-201	FEB 22	67067	66952	115
MAR 22	98885	97690	1195	MAR 22	68389	68175	214
APR 22	98156	97942	214	APR 22	64922	64991	-69
MAY 22	85178	84786	392	MAY 22	67459	67448	12
JUN 22	27471	27591	-120	JUN 22	55609	55654	-46
JUL 22	21738	21725	13	JUL 22	54161	54179	-18
AUG 22	23781	23317	464	AUG 22	55407	55424	-17
SEP 22	22911	22552	359	SEP 22	55107	55124	-18
OCT 22	61347	61550	-203	OCT 22	59228	59228	-1
NOV 22	25119	24798	321	NOV 22	47505	47480	25
DEC 22	20527	20358	169	DEC 22	50120	50063	56
JAN 23	13861	13656	205	JAN 23	29850	29483	368
FEB 23	5089	4907	182	FEB 23	25258	25164	94
MAR 23	7774	7777	-3	MAR 23	27863	27689	174
APR 23	8753	8769	-16	APR 23	21689	21558	131
MAY 23	5796	5774	22	MAY 23	22761	22618	143
JUN 23	2285	2275	10	JUN 23	21046	20907	139
JUL 23	2460	2460	0	JUL 23	21139	20996	143
AUG 23	1585	1585	0	AUG 23	21056	20913	143
SEP 23	1940	1948	-8	SEP 23	20703	20565	139
OCT 23	2412	2401	11	OCT 23	22013	21871	143
NOV 23	1109	1109	0	NOV 23	19913	19769	144
DEC 23	1758	1758	0	DEC 23	21325	21328	-3
JAN 24	793	793	0	JAN 24	12506	12516	-10







		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	3.77	3.46	-0.31
TETCO M3	\$/MMBtu	3.40	3.30	-0.10
FGT Zone 3	\$/MMBtu	3.46	3.83	0.37
Zone 6 NY	\$/MMBtu	3.46	3.28	-0.18
Chicago Citygate	\$/MMBtu	3.63	3.58	-0.05
Michcon	\$/MMBtu	3.57	3.53	-0.04
Columbia TCO Pool	\$/MMBtu	3.28	3.08	-0.20
Ventura	\$/MMBtu	3.62	3.51	-0.11
Rockies/Opal	\$/MMBtu	3.71	3.49	-0.22
El Paso Permian Basin	\$/MMBtu	3.44	3.61	0.17
Socal Citygate	\$/MMBtu	7.24	5.08	-2.17
Malin	\$/MMBtu	3.83	4.10	0.27
Houston Ship Channel	\$/MMBtu	3.71	3.74	0.03
Henry Hub Cash	\$/MMBtu	3.75	3.52	-0.23
AECO Cash	C\$/GJ	3.12	2.87	-0.26
Station2 Cash	C\$/GJ	3.00	3.91	0.91
Dawn Cash	C\$/GJ	3.60	3.55	-0.05

Source: CME, Bloomberg



		vs. 4 Weeks			
	Units	Current Price	vs. Last Weel	(Ago	vs. Last Year
NatGas Jul21/Oct21	\$/MMBtu	0.134	0.019	0.108	0.116
NatGas Oct21/Nov21	\$/MMBtu	0.061	0.003	0.001	a 0.011
NatGas Oct21/Jan22	\$/MMBtu	0.224	0.006	- 0.022	- 0.054
NatGas Apr22/Oct22	\$/MMBtu	-0.011	-0.001	-0.044	▼ -0.080
WTI Crude	\$/Bbl	66.42	-7.680	-7.240	25.610
Brent Crude	\$/Bbl	68.62	-6.540	- 6.280	25.340
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	0.000	0.000	0.000
Heating Oil	cents/Gallon	198.52	-16.460	-14.160	4.970
Propane, Mt. Bel	cents/Gallon	1.08	-0.021	0.119	a 0.590
Ethane, Mt. Bel	cents/Gallon	0.31	0.001	0.034	0.095
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

