23 July 2021



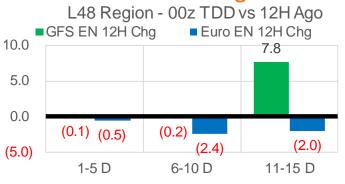
	С	urrent	Δ from YD	Δ from Av	
WTI Prompt	\$	71.84	\$ (0.07)	\$	1.6

	C	Current	Λ from VD	Δ from 7D		
	Cu	пепі		Av	g	
Brent Prompt	\$	73.69	\$ (0.10)	\$	1.6	

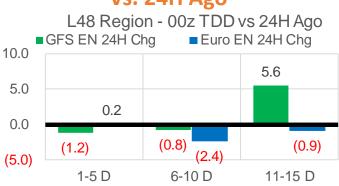
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Price Summary

Vs. 12H Ago



Vs. 24H Ago



	Current	Δ from YD	Δ from 7D Avg
US Dry Production	91.5	- 0.57	▼ -0.61

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	38.7	-0.55	-0.94

	Current	Δ from YD	Δ from 7D Avg		
US ResComm	7.8	- 0.60	▼ -0.53		

	Current	Δ from YD	Δ from 7D Avg		
Canadian Imports	5.0	0.32	0.04		

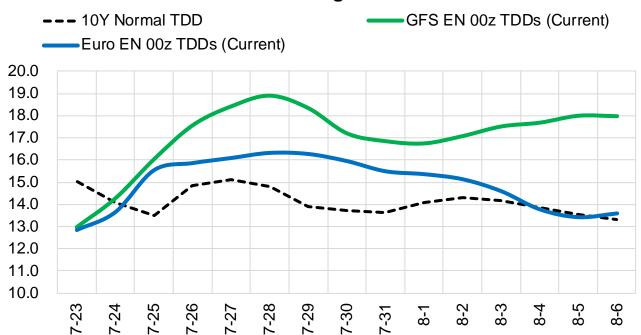
	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	10.1	- 0.71	▼ -0.35

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	7.4	- 0.04	a 0.35

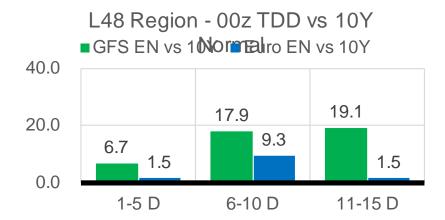


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	DoD	vs.7D
Lower 48 Dry Production	92.5	92.2	92.6	92.2	91.2	92.1	91.5	▼-0.6	▼ -0.6
Canadian Imports	4.7	4.8	5.0	5.3	5.0	4.6	5.0	0.3	▲ 0.0
L48 Power	38.5	38.3	40.4	41.0	39.5	39.3	38.7	▼-0.6	▼-0.8
L48 Residential & Commercial	8.0	8.0	8.4	8.5	8.4	8.4	7.8	▼-0.6	- 0.5
L48 Industrial	19.5	19.6	19.8	19.6	19.6	19.6	19.4	▼-0.2	▼ -0.2
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.0	5.1	4.7	- 0.4	- 0.4
L48 Pipeline Distribution	2.2	2.2	2.3	2.3	2.3	2.3	2.2	▼ -0.1	▼ -0.1
L48 Regional Gas Consumption	73.3	73.1	76.0	76.6	74.9	74.6	72.8	▼-1.8	▼ -1.9
Net LNG Delivered	10.67	10.52	10.21	10.30	9.79	10.84	10.13	▼-0.7	▼ -0.3
Total Mexican Exports	6.8	6.6	7.0	7.5	6.9	7.4	7.4	▼ 0.0	0.4
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	6.4	6.8	4.4	3.1	4.6	3.8	6.1		

EIA Storage Week Balances

	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	WoW	vs. 4W
Lower 48 Dry Production	92.3	93.2	92.2	91.8	92.3	92.1	▼ -0.2	▼-0.3
Canadian Imports	5.1	4.7	5.2	5.1	5.2	4.9	▼ -0.3	▼-0.1
L48 Power	34.8	34.4	39.7	37.1	38.7	39.7	1.0	2.2
L48 Residential & Commercial	8.3	8.4	8.3	8.0	8.3	8.3	0.0	0.0
L48 Industrial	22.4	20.0	21.5	19.6	19.8	19.6	▼ -0.2	▼-0.6
L48 Lease and Plant Fuel	5.1	5.2	5.1	5.1	5.1	5.1	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.1	2.1	2.4	2.1	2.2	2.3	0.0	0.1
L48 Regional Gas Consumption	72.7	70.1	77.0	72.0	74.1	74.9	0.9	1.7
Net LNG Exports	9.6	10.3	11.2	11.0	10.8	10.5	▼ -0.3	▼-0.3
Total Mexican Exports	7.5	7.6	7.2	7.1	7.1	7.0	▼ -0.1	▼-0.2
Implied Daily Storage Activity	7.6	10.0	2.0	6.8	5.5	4.6	-0.9	
EIA Reported Daily Storage Activity	7.9	10.9	2.3	7.9	7.0			
Daily Model Error	-0.2	-0.9	-0.3	-1.1	-1.5			

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	92.8	91.9	▼ -0.8	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	3.2	▼-5.2
L48 Residential & Commercial	8.0	7.9	29.3	19.7	13.4	8.4	8.2	▼-0.2	0.2
L48 Industrial	21.6	20.4	19.3	21.2	19.2	21.0	19.7	▼ -1.3	- 0.7
L48 Lease and Plant Fuel	5.0	4.9	5.0	5.1	5.1	5.1	5.1	▼ -0.1	0.1
L48 Pipeline Distribution	2.3	2.4	2.5	2.3	2.1	2.2	2.2	0.1	▼-0.2
L48 Regional Gas Consumption	77.8	79.4	80.6	73.3	66.7	72.0	73.6	1.6	▼ -5.7
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 Daily Model Error	7.8	5.0	-2.0	5.5	12.4	8.0	5.5		





Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	DoD	vs. 7D
NRC Nuclear Daily Output	90.9	91.2	91.7	91.8	90.3	88.2	88.2	0.0	-2.5
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	14.0	13.7	13.2	13.1	14.6	16.7	16.7	0.0	2.5
NRC % Nuclear Cap Utilization	92.4	92.7	93.3	93.3	91.8	89.7	89.7	0.0	-2.5

Wind Generation Daily Average - MWh (Genscape)

	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	DoD	vs. 7D
CAISO Wind	2564	2473	3077	3999	3335	2895	3436	541	379
ERCOT	11149	7936	6045	5997	4005	17062	15442	-1620	6743
Genscape US Wind	29310	16924	15127	18944	24590	24590	24590	0	3009

Generation Daily Average - MWh (Genscape)

	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	DoD	vs. 7D
Genscape US Wind	29310	16924	15127	18944	24590	24590	24590	0	3009
Genscape US Solar	25902	16136	18472	-13649	-39162	-39162	-39162	0	-33918
Genscape US Other	5101	4893	4842	3627	2639	2639	2639	0	-1318
Genscape US Coal	130998	127904	133411	128681	126853	126853	126853	0	-2264
Genscape US Nuke	94804	95153	95642	95060	94210	94210	94210	0	-637
Genscape US Hydro	23676	23882	23987	24010	24208	24208	24208	0	213
Genscape US Gas	229625	225739	239196	228542	201459	201459	201459	0	-19544

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear Generation Weekly Average - GWh (NRC)

	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	86.7	89.9	89.1	89.5	90.7	90.7	0.1	0.0
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	18.1	15.0	15.7	15.4	14.2	14.2	-0.1	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

Wind Generation Weekly Average - MWh (Genscape)

	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	WoW	WoW Bcf/d Impact
CAISO Wind	3723	3254	4655	4583	4245	3053	-1192	0.2
ERCOT	10749	16549	10225	6583	13940	9840	-4100	0.7
Genscape US Wind	32707	50972	25398	24364	36668	23201	-13467	2.3

Generation Weekly Average - MWh (Genscape)

	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	WoW	WoW Bcf/d Impact
Genscape US Wind	32707	50972	25398	24364	36668	23201	-13467	2.3
Genscape US Solar	7817	12070	24039	15619	21148	-93	-21241	3.6
Genscape US Other	5201	4746	4728	4754	5151	4221	-929	0.2
Genscape US Coal	120230	118888	132762	121436	126462	130474	4012	-0.7
Genscape US Nuke	90822	93987	93205	93419	94570	94852	281	0.0
Genscape US Hydro	29459	30022	24181	23145	22869	23916	1047	-0.2
Genscape US Gas	210769	202074	238370	218250	227817	224426	-3391	

See National Wind and Nuclear daily charts



Monthly Average Generation Data

	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	94.9	91.8	75.9	81.8	88.7	90.1	89.9	1.4	-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	10.0	13.1	29.0	23.1	16.2	14.7	15.0	-1.4	1.9
NRC % Nuclear Cap Utilization	96.5	93.4	77.1	83.2	90.2	91.6	91.4	1.4	-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	3514	3380	4009	3984	3994	3965	4097	-29	717
ERCOT Genscape US Wind	9914 29570	13882 34673	13820 50942	15379 46211	12995 36758	10178 27600	10611 28494	-2816 -9159	-3271 -6179
•									

Generation Monthly Average -	MWh (Go 2Yr Ago	enscape 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	29570	34673	50942	46211	36758	27600	28494	893.9	▼ -6179
Genscape US Solar	21498	20992	11261	15499	14357	10431	13323	2893	▼ -7669
Genscape US Other	4982	5377	4512	5256	5178	4609	4638	28	▼ -739
Genscape US Coal	140003	114376	73683	87336	119945	126629	127403	~ 774	13027
Genscape US Nuke	96949	94147	79842	85659	92805	94220	94003	▼ -218	▼ -144
Genscape US Hydro	32396	29948	27386	27514	29334	23359	23669	310	▼ -6278
Genscape US Gas	228163	242431	152976	160888	212447	222999	225108	8777	▼ -17323
Genscape US Total	553559	541944	400602	428362	510825	509848	516638	16661	▼ -25306



See National Wind and Nuclear daily charts



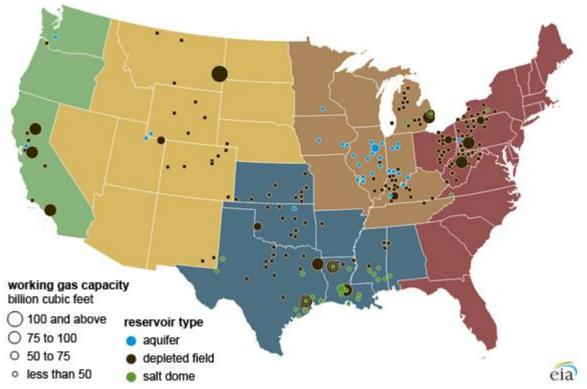
Regional S/D Models Storage Projection

Week Ending 23-Jul

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	4.2	1.3	5.5	39
East	1.6	1.4	2.9	20
Midwest	3.3	-0.4	2.9	20
Mountain	4.3	-4.1	0.2	2
South Central	-4.8	4.5	-0.3	-2
Pacific	-0.1	-0.1	-0.2	-1

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

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



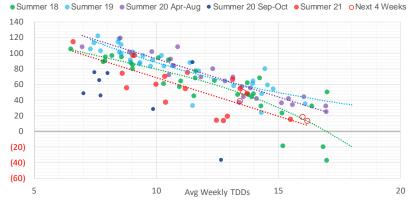


Weather Model Storage Projection

Next report
and beyond

Week Ending	GWDDs	Week Storage Projection
23-Jul	13.4	39
30-Jul	16.2	13
06-Aug	16.0	18
13-Aug	13.6	50

Weather Storage Model - Next 4 Week Forecast



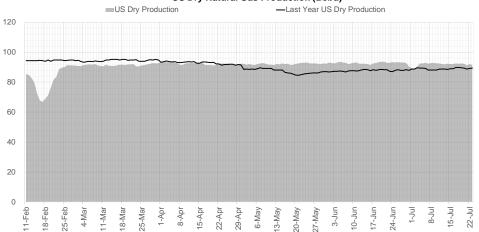
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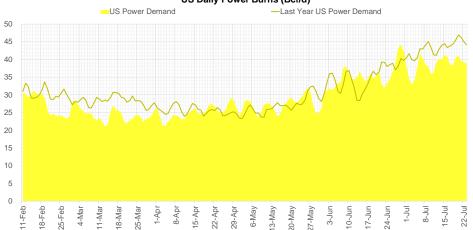


Supply - Demand Trends

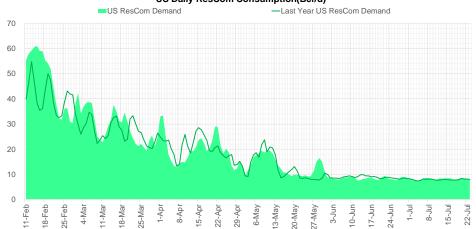
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



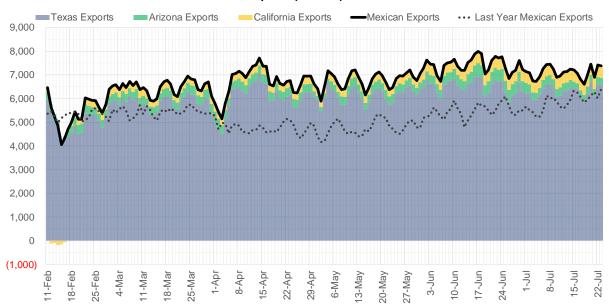
US Daily ResCom Consumption(Bcf/d)



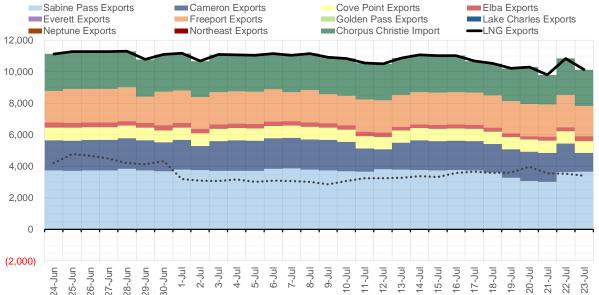
Source: Bloomberg



Mexican Exports (MMcf/d)



Net LNG Exports - Last 30 days (MMcf/d)



Source: Bloomberg



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

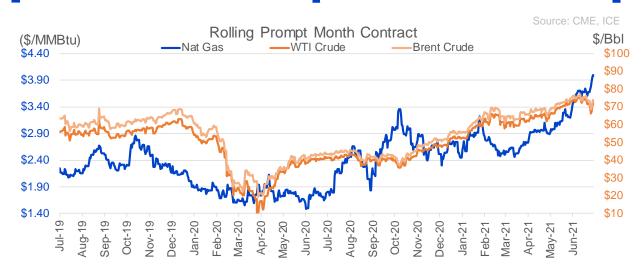
CONTRACT	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE	CONTRACT	CONTRACT	DI III	CALL
MONTH	YEAR	- OliCALL	OHAIKE	VOL	MONTH	YEAR	T OT/CAL	
8	2021	С	4.00	10396	10	2021	С	
8	2021	C	4.25	7669	8	2021	Č	
10	2021	C	5.00	7543	8	2021	č	
8	2021	P		4476	10	2021	Č	
9		C	3.80	4099	10	2021	C	
	2021		4.75		9	2021	C	
8	2021	С	4.10	3892	10	2021	P	
10	2021	С	4.50	3564	8	2021	P	
9	2021	P	3.50	3429	10	2021	C	
8	2021	С	4.50	3136	8	2021	P	
10	2021	С	4.00	3115	10	2021	P	
9	2021	С	5.00	2923	10	2021	C	
9	2021	С	3.90	2880			P	
11	2021	Р	3.00	2806	10	2021		
8	2021	Р	3.70	2731	8	2021	Р	
9	2021	С	5.25	2594	8	2021	С	
8	2021	Р	3.85	2336	9	2021	Р	
10	2021	Р	3.50	2188	9	2021	С	
8	2021	Р	3.90	2184	8	2021	С	
10	2021	С	4.25	2105	11	2021	C	
10	2021	Р	3.25	2054	10	2021	Р	
9	2021	Р	3.75	1987	8	2021	Р	
9	2021	C	4.00	1901	12	2021	С	
9	2021	Č	4.50	1821	9	2021	Р	
11	2021	P	3.25	1702	9	2021	Р	
8	2021	r P	3.75	1617	10	2021	Р	
4	2022	C	4.50	1600	8	2021	Р	
		P			4	2022	С	
9	2021	P P	3.40	1581	8	2021	Р	
1	2022		2.75	1500	8	2021	С	
8	2021	P	3.60	1328	8	2021	Р	
10	2021	С	4.60	1301	9	2021	С	
8	2021	С	4.05	1281	10	2021	С	
4	2022	С	5.00	1200	8	2021	Р	
9	2021	С	4.60	1157	10	2021	Р	
8	2021	С	3.70	1136	8	2021	Р	
9	2021	Р	3.25	1135	11	2021	Р	
3	2022	С	4.00	1131	3	2022	C	
1	2022	Р	3.00	1107	10	2021	Č	
10	2021	С	5.50	1027	10	2021	C	
8	2021	С	3.60	1003	9	2021	P	
9	2021	С	4.10	1003	8	2021	C	
3	2022	Р	2.25	1000	8	2021	C	
4	2022	C	3.40	1000	9	2021	C	
4	2022	P	2.25	1000	8	2021	C	
5	2022	C	3.30	1000	0 11	2021	C	
10	2022	P	3.00	1000	9	2021	C	
8	2021	C	4.20	958	1	2021	C	
8	2021	P	3.65	940	9	2022	C	
9	2021	P P	3.00	908			C	
9 11		P P			3	2022		
1.1	2021	۲	3.75	800	1	2022	Source Source	~



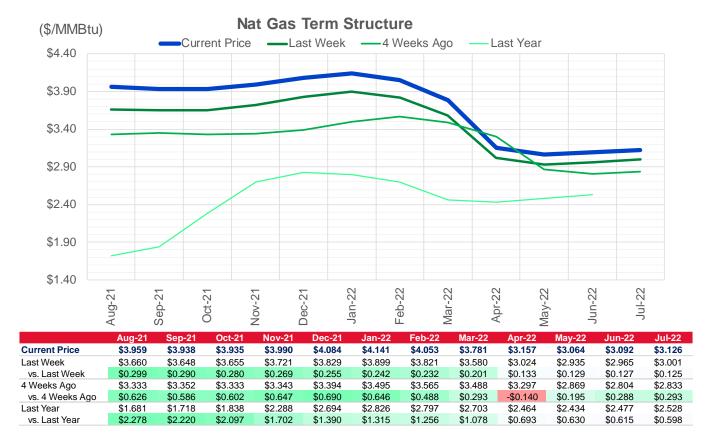
Nat Gas Futures Open Interest

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	41008	57278	-16270	AUG 21	86658	84310	2348
SEP 21	333920	324441	9479	SEP 21	90109	89490	619
OCT 21	161908	160142	1766	OCT 21	103359	102687	672
NOV 21	110403	108924	1479	NOV 21	70199	72511	-2312
DEC 21	71293	71009	284	DEC 21	71861	71350	511
JAN 22	118159	117978	181	JAN 22	77843	77853	-10
FEB 22	48964	48231	733	FEB 22	67548	67403	146
MAR 22	99659	98567	1092	MAR 22	67752	68111	-359
APR 22	101005	99306	1699	APR 22	64341	65145	-805
MAY 22	87241	87367	-126	MAY 22	66328	67282	-953
JUN 22	28052	27561	491	JUN 22	54776	55552	-776
JUL 22	22686	22211	475	JUL 22	54038	54686	-648
AUG 22	23892	23835	57	AUG 22	55448	56018	-571
SEP 22	23777	23949	-172	SEP 22	55040	55592	-552
OCT 22	60387	61074	-687	OCT 22	58574	59013	-440
NOV 22	24926	25090	-164	NOV 22	47935	47917	18
DEC 22	20926	20649	277	DEC 22	50120	50495	-375
JAN 23	15716	15449	267	JAN 23	29788	29580	208
FEB 23	5473	5448	25	FEB 23	25752	25591	161
MAR 23	7026	7887	-861	MAR 23	27934	28418	-485
APR 23	9278	9465	-187	APR 23	22070	22016	54
MAY 23	5680	5928	-248	MAY 23	23334	23408	-74
JUN 23	2355	2344	11	JUN 23	21655	21534	122
JUL 23	2598	2633	-35	JUL 23	21949	21617	333
AUG 23	1779	1782	-3	AUG 23	21814	21653	161
SEP 23	2015	2065	-50	SEP 23	21342	21213	130
OCT 23	2646	2584	62	OCT 23	22761	22531	230
NOV 23	1113	1109	4	NOV 23	22225	20201	2024
DEC 23	1742	1750	-8	DEC 23	21635	21565	70
JAN 24	993	993	0	JAN 24	12794	12665	129







		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	3.43	3.32	-0.11
TETCO M3	\$/MMBtu	3.15	3.23	0.08
FGT Zone 3	\$/MMBtu	3.14	3.69	0.55
Zone 6 NY	\$/MMBtu	3.14	3.19	0.05
Chicago Citygate	\$/MMBtu	3.74	3.46	-0.28
Michcon	\$/MMBtu	3.73	3.42	-0.31
Columbia TCO Pool	\$/MMBtu	3.30	2.99	-0.31
Ventura	\$/MMBtu	3.62	3.39	-0.23
Rockies/Opal	\$/MMBtu	3.71	3.35	-0.36
El Paso Permian Basin	\$/MMBtu	3.70	3.46	-0.24
Socal Citygate	\$/MMBtu	7.29	5.29	-2.00
Malin	\$/MMBtu	3.85	3.94	0.09
Houston Ship Channel	\$/MMBtu	3.87	3.59	-0.28
Henry Hub Cash	\$/MMBtu	3.89	3.38	-0.51
AECO Cash	C\$/GJ	3.26	2.75	-0.51
Station2 Cash	C\$/GJ	2.72	3.74	1.02
Dawn Cash	C\$/GJ	3.74	3.44	

Source: CME, Bloomberg



					VS	. 4 Weeks		
	Units	Current Price	vs.	Last Week		Ago	vs	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	0.359		0.366		0.355		0.342
NatGas Oct21/Nov21	\$/MMBtu	0.057	•	-0.013		0.010		0.007
NatGas Oct21/Jan22	\$/MMBtu	0.205		-0.046	•	-0.011		-0.073
NatGas Apr22/Oct22	\$/MMBtu	-0.019		-0.018	•	-0.034		-0.085
WTI Crude	\$/Bbl	71.91		0.260	•	-1.390		30.840
Brent Crude	\$/Bbl	73.79		0.320	\blacksquare	-1.770		30.480
Fuel Oil, NY Harbour 1%	\$/BbI	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	213.26		2.000	\blacksquare	-2.970		87.850
Propane, Mt. Bel	cents/Gallon	1.09		-0.010		0.124		0.595
Ethane, Mt. Bel	cents/Gallon	0.31		0.007		0.037		0.096
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

