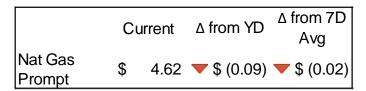


Market Report

7 September 2021



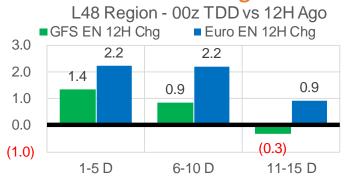
	Cu	ırrent	Δ from YD		m 7D vg
WTI Prompt	\$	68.53	\$ (0.76)	~ \$	(0.6)

	_	urront	Δ from YD	∆ fro	m 7D
	C	Current	ם וווטוו דם	A	vg
Brent Prompt	\$	71.93	\$ (0.29)	~ \$	(0.6)

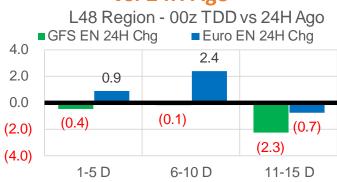
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Short-term Weather Model Outlooks
Lower 48 Component Models
Regional S/D Models Storage Projection
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Supply – Demand Trends
Nat Gas Options Volume and Open Interest
Nat Gas Futures Open Interest
Price Summary

Vs. 12H Ago



Vs. 24H Ago



	Current	Δ from YD	Δ from 7D Avg
US Dry Production	89.9	▼ -1.23	▼ -1.12

	Current	Δ from YD	Δ from 7D Avg
US ResComm	7.0	0.15	▼ -0.16

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	10.9	▼ -0.13	a 0.28

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	33.0	- 0.01	- 0.46

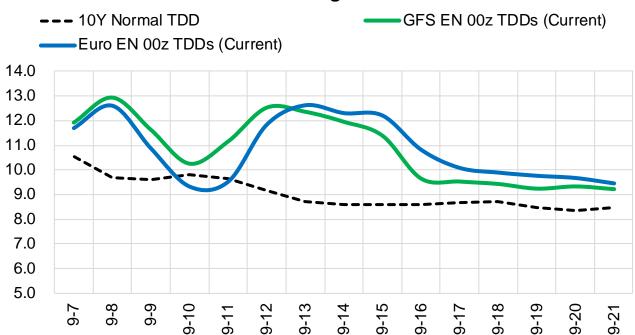
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.6	▼ -0.11	-0.08

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.8	a 0.07	- 0.07

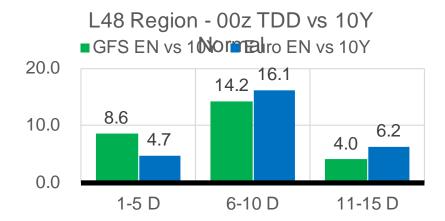


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Market Report

Lower 48 Component Models

Daily Balances

	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	DoD	vs.7D
Lower 48 Dry Production	91.2	91.2	91.1	90.5	91.0	91.1	91.2	0.1	△ 0.1
Canadian Imports	5.3	5.1	4.7	4.4	4.6	4.6	4.7	▲ 0.0	▼ -0.1
L48 Power	41.0	37.6	34.7	32.7	32.3	31.8	32.4	0.6	▼ -2.6
L48 Residential & Commercial	7.6	7.5	7.6	7.6	7.4	6.6	6.6	0.1	▼ -0.8
L48 Industrial	19.3	19.4	19.4	19.7	20.3	20.5	20.8	0.3	1.0
L48 Lease and Plant Fuel	5.0	5.0	5.0	5.0	5.0	5.0	5.0	0.0	0.0
L48 Pipeline Distribution	2.4	2.2	2.2	2.1	2.0	2.0	2.0	0.0	▼ -0.1
L48 Regional Gas Consumption	75.4	71.7	68.9	67.1	67.1	65.9	66.8	0.9	▼ -2.6
Net LNG Delivered	10.27	10.12	9.73	10.39	10.96	11.02	10.89	▼ -0.1	0.5
Total Mexican Exports	7.2	7.2	7.2	7.0	7.0	6.6	6.4	▼ -0.1	▼ -0.6
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	3.7	7.3	10.1	10.5	10.5	12.3	11.7		

EIA Storage Week Balances

	30-Jul	6-Aug	13-Aug	20-Aug	27-Aug	3-Sep	WoW	vs. 4W
Lower 48 Dry Production	92.6	91.9	92.4	92.4	93.0	90.9	▼ -2.1	▼ -1.6
Canadian Imports	5.5	5.0	5.2	5.0	5.3	5.0	▼ -0.4	▼-0.2
L48 Power	42.1	38.3	41.1	39.7	41.9	37.9	▼-3.9	▼ -2.3
L48 Residential & Commercial	8.6	8.0	7.8	7.6	7.8	7.5	▼-0.3	▼-0.3
L48 Industrial	20.5	20.1	19.2	20.9	21.2	19.8	▼ -1.4	▼ -0.6
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.0	▼ -0.1	▼ -0.1
L48 Pipeline Distribution	2.4	2.2	2.4	2.3	2.4	2.2	▼-0.2	▼ -0.1
L48 Regional Gas Consumption	78.6	73.7	75.5	75.6	78.4	72.4	▼ -5.9	▼-3.4
Net LNG Exports	10.8	10.6	9.9	10.9	10.6	10.5	▼ -0.1	▼ 0.0
Total Mexican Exports	7.0	6.9	6.8	6.8	6.8	7.0	0.2	0.1
Implied Daily Storage Activity	1.7	5.7	5.2	4.2	2.6	5.9	3.4	
EIA Reported Daily Storage Activity	1.9	7.0	6.6	4.1	2.9			
Daily Model Error	-0.1	-1.3	-1.4	0.0	-0.3			

Monthly Balances									
•	2Yr Ago	LY					MTD		
	Sep-18	Sep-18	May-21	Jun-21	Jul-21	Aug-21	Sep-21	MoM	vs. LY
Lower 48 Dry Production	86.6	86.6	93.1	93.4	92.4	92.2	90.8	▼-1.3	4.2
Canadian Imports	4.5	4.5	4.5	4.8	5.2	5.1	4.6	▼ -0.5	0.1
L48 Power	34.3	34.3	26.8	35.9	39.6	40.2	32.9	▼ -7.3	▼ -1.5
L48 Residential & Commercial	8.5	8.5	12.8	8.9	8.6	7.7	7.1	▼ -0.6	▼ -1.4
L48 Industrial	22.6	22.6	20.8	20.6	19.6	20.3	20.4	0.1	▼ -2.3
L48 Lease and Plant Fuel	4.8	4.8	5.1	5.1	5.1	5.1	5.0	▼ -0.1	0.2
L48 Pipeline Distribution	2.1	2.1	2.1	2.2	2.3	2.3	2.0	▼ -0.3	▼ 0.0
L48 Regional Gas Consumption	72.3	72.3	67.6	72.7	75.1	75.6	67.4	▼ -8.2	▼ -5.0
Net LNG Exports	3.1	3.1	10.8	10.2	10.8	10.5	10.7	0.2	7.6
Total Mexican Exports	5.0	5.0	6.8	7.4	7.0	6.9	6.8	▼ -0.1	1.9
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	10.7	10.7	12.4	8.0	4.6	4.4	10.6		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	DoD	vs. 7D
NRC Nuclear Daily Output	89.3	90.1	90.1	89.9	89.9	89.9	89.9	0.0	0.0
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	15.6	14.8	14.8	15.0	15.0	15.0	15.0	0.0	0.0
NRC % Nuclear Cap Utilization	90.8	91.6	91.6	91.4	91.4	91.4	91.4	0.0	0.0

Wind Generation Daily Average - MWh (EIA)

	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	DoD	vs. 7D
CALI Wind	2598	3005	3892	2647	1475	735	624	-111	-1768
TEXAS Wind	3359	6351	11690	11217	11688	10074	5319	-4755	-3744
US Wind	20762	31085	44200	43754	32918	25931	21742	-4189	-11366

Generation Daily Average - MWh (EIA)

	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep	4-Sep	5-Sep	DoD	vs. 7D
US Wind	20762	31085	44200	43754	32918	25931	21742	-4189	-11366
US Solar	12370	11119	11956	14360	14823	14877	13950	-927	699
US Petroleum	2666	2316	2314	2320	2181	1719	1492	-227	-761
US Other	10159	10037	8922	8553	8447	8506	8384	-122	-720
US Coal	146801	139635	129442	119865	120611	116389	115413	-976	-13377
US Nuke	91825	92283	92622	92854	93063	93475	93303	-172	616
US Hydro	26761	27951	28984	28222	28526	26093	24557	-1536	-3199
US Gas	226570	207534	185810	171731	167087	159729	168088	8359	-18322

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear Generatior	ı Weekly	[,] Average - (GWh ((NRC)
--------------------	----------	--------------------------	-------	-------

	30-Jul	6-Aug	13-Aug	20-Aug	27-Aug	3-Sep	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	89.3	90.6	91.5	92.4	91.9	90.2	-1.7	0.3
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	15.6	14.3	13.3	12.5	13.0	14.7	1.7	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

Wind Generation Weekly Average - MWh (EIA)

	30-Jul	6-Aug	13-Aug	20-Aug	27-Aug	3-Sep	WoW	WoW Bcf/d Impact
CALI Wind	1905	2237	2507	3210	2052	2247	194	0.0
TEXAS Wind	7913	5180	16319	7171	12600	7534	-5066	0.9
US Wind	29738	22379	49586	29141	41810	35348	-6462	1.2
					12668.4			
					43%			

Generation Weekly Average - MWh (EIA)

	30-Jul	6-Aug	13-Aug	20-Aug	27-Aug	3-Sep	WoW	WoW Bcf/d Impact
US Wind	29738	22379	49586	29141	41810	35348	-6462	1.2
US Solar	13978	14131	14383	12828	14536	13206	-1330	0.2
US Petroleum	4729	4074	4712	4466	5323	3135	-2188	0.4
US Other	9289	9070	10070	10104	10131	9616	-515	0.1
US Coal	146407	134740	140524	138052	136168	136209	42	0.0
US Nuke	92266	93328	94302	95157	94358	92365	-1993	0.4
US Hydro	29215	27752	27035	28988	30618	28156	-2462	0.4
US Gas	224459	204634	208281	212106	215990	205097	-10893	2.0

See National Wind and Nuclear daily charts



Monthly Average Generation Data

Nuclear Generation Monthly Average - GWh (NRC)										
	2Yr Ago	2Yr Ago LY					MTD			
	Same 30 days	Same 30 days	Jun-21	Jul-21	Aug-21	Sep-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY	
NRC Nuclear Daily Output	94.1	90.5	88.7	90.0	91.5	89.9	91.3	-1.6	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	10.8	14.4	16.2	14.9	13.4	15.0	13.6	1.6	-0.8	
NRC % Nuclear Cap Utilization	95.7	92.0	90.2	91.5	93.0	91.4	92.8	-1.6	0.8	

Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 S days	Same 30 days	Jun-21	Jul-21	Aug-21	Sep-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	2312	1803	2881	2338	2442	1517	2222	-924	418
TEXAS Wind	7779	8210	9509	7217	9901	8661	9921	-1240	1711
US Wind	26854	31302	36827	29106	35740	30290	35754	-5450	4452

Generation Monthly Average - MWh (EIA)

Generation Monthly Average - MWN (CIA)									
	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Jun-21	Jul-21	Aug-21	Sep-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	26854	31302	36827	29106	35740	30290	35754	▲ 5464.2	4452
US Solar	8898	10417	14578	14195	13832	13981	13746	▼ -235.1	3329
US Petroleum	4565	3713	4155	4233	4484	1858	3973	2114	259
US Other	8778	9492	8208	9327	9912	8511	9776	1265	284
US Coal	119289	123740	122034	137228	137641	118935	135044	16109	11304
US Nuke	100520	92750	92180	92911	94062	93132	93982	850	1232
US Hydro	30276	29072	32565	29941	28528	26499	28540	2 041	▼ -531
US Gas	210536	213499	189395	207814	210777	169803	204976	27608	▼ -8523
US Total	511346	513818	500272	524889	534919	463042	525731	49751	11913



See National Wind and Nuclear daily charts



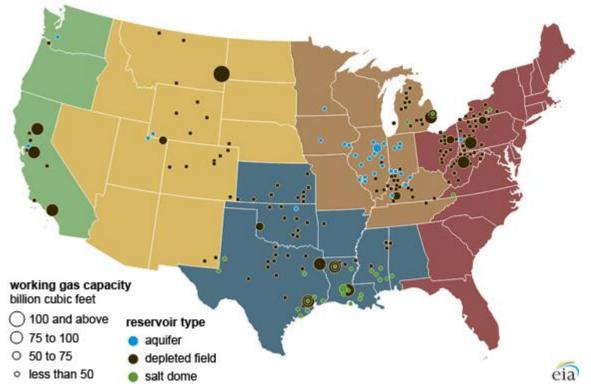
Regional S/D Models Storage Projection

Week Ending 3-Sep

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	5.6	0.9	6.5	46
East	2.2	1.1	3.3	23
Midwest	4.3	-0.2	4.1	29
Mountain	3.3	-3.4	-0.1	-1
South Central	-4.5	3.7	-0.8	-6
Pacific	0.4	-0.3	0.0	0

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

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



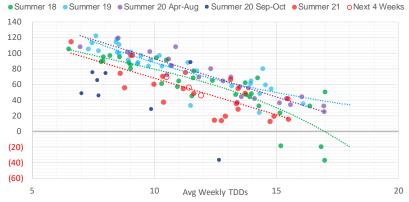


Weather Model Storage Projection

Next report
and beyond

Week Ending	GWDDs	Week Storage Projection
03-Sep	11.9	46
10-Sep	10.5	69
17-Sep	11.4	56
24-Sep	#N/A	#N/A

Weather Storage Model - Next 4 Week Forecast



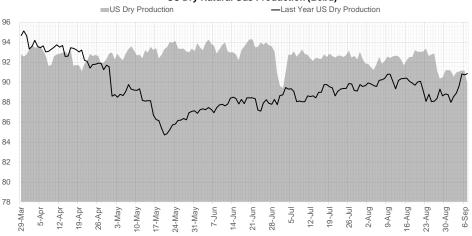
Go to larger image



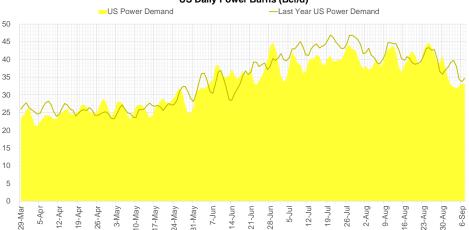


Supply - Demand Trends

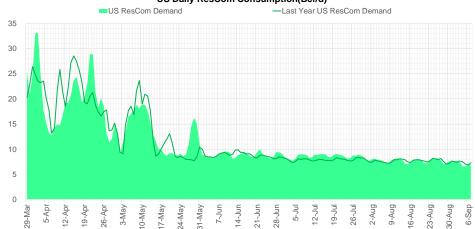
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



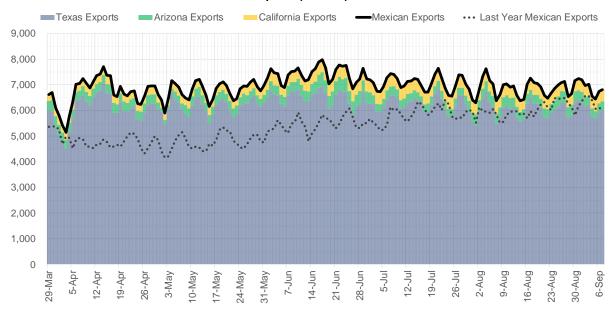
US Daily ResCom Consumption(Bcf/d)



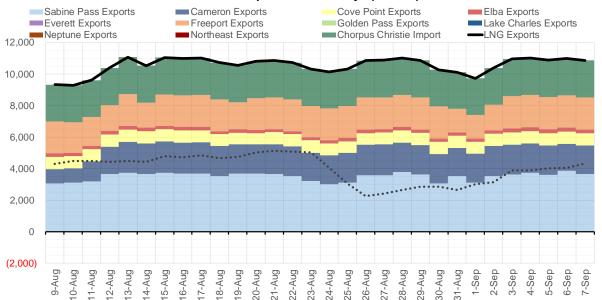
Source: Bloomberg



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

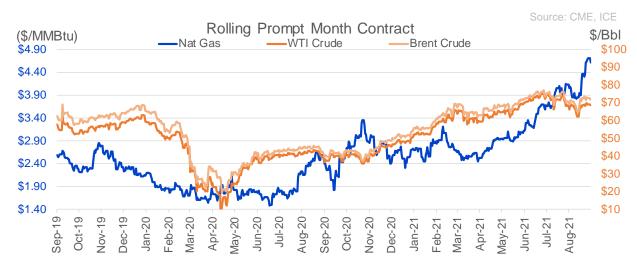
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
10	2021	С	5.00	5991	10	2021	С	5.00	55779
10	2021	P	4.00	5762	10	2021	С	4.00	43375
10	2021	С	5.25	5339	10	2021	P	3.50	42752
10	2021	Р	4.50	5234	12	2021	P	2.75	42059
10	2021	С	5.50	5023	10	2021	С	4.50	41509
10	2021	Р	4.25	3724	12	2021	P	2.50	38552
10	2021	Р	3.75	2758	10	2021	С	3.50	32999
10	2021	Р	4.20	2599	10	2021	С	4.25	31996
10	2021	Р	3.50	2122	10	2021	P	3.00	31758
12	2021	Р	3.75	2040	10	2021	С	6.00	31642
12	2021	Р	4.00	1899	11	2021	P	3.00	30706
10	2021	С	5.75	1832	10	2021	P	2.50	29995
11	2021	С	5.75	1819	10	2021	P	2.00	28650
10	2021	С	4.70	1716	10	2021	С	3.25	28193
5	2022	С	5.50	1200	10	2021	P	2.75	26887
10	2021	С	4.65	1129	10	2021	P	4.00	26254
10	2021	Р	4.60	1117	12	2021	P	3.00	24692
1	2022	С	10.00	1103	10	2021	P	3.75	24244
1	2022	С	8.00	1101	11	2021	С	4.00	23281
11	2021	Р	4.25	1070	12	2021	С	4.00	22646
1	2022	Р	4.75	1000	11	2021	P	3.50	21982
10	2021	Р	4.40	985	10	2021	P	2.25	19784
10	2021	С	4.75	939	4	2022	С	3.00	19760
11	2021	С	6.00	898	11	2021	С	5.00	19646
11	2021	С	4.60	888	10	2021	С	3.00	18494
1	2022	С	6.00	866	11	2021	С	7.00	18050
11	2021	С	7.00	864	3	2022	С	10.00	17991
10	2021	Р	4.65	754	10 3	2021	P C	3.25	17714
11	2021	С	5.00	711		2022	P	5.00	17673
12	2021	С	7.00	701	11 3	2021	P P	4.00	17638
11	2021	P	3.50	692		2022		2.50	17199
10	2021	P	4.35	687	1 10	2022	С	5.00	17031
10	2021	С	4.50	665	12	2021 2021	C P	3.75 4.00	16780 16480
10	2021	Ċ	6.25	661	2	2022	C	4.00 5.00	16425
10	2021	P	4.70	653	3	2022	C	4.00	16024
5	2022	С	6.00	650	2	2022	C	4.00	15822
10	2021	P	4.75	646	10	2022	C	5.50	15808
11	2021	C	7.75	636	10	2021	C	6.00	15517
10	2021	Ċ	4.40	632	3	2022	C	8.00	15502
1	2022	Ċ	5.50	628	11	2022	C	4.50	15349
11	2021	Ċ	4.75	611	10	2021	C	5.25	14909
2	2022	P	4.00	610	4	2021	P	2.50	14509
4	2022	C	5.50	600	1	2022	Ċ	4.00	14503
1	2022	Č	5.00	588	11	2022	P	2.50	14486
10	2021	č	3.90	585	11	2021	C	3.75	14481
10	2021	Č	4.00	573	3	2021	C	3.75	14447
10	2021	Č	4.25	563	3 12	2022	P	2.00	13889
10	2021	C	6.50	562	3	2021	C	6.00	13606
12	2021	P	2.50	560	11	2022	C	4.25	13578
12	2021	•	2.00	300	11	2021	Source	: CME, ICE	10070



Nat Gas Futures Open Interest

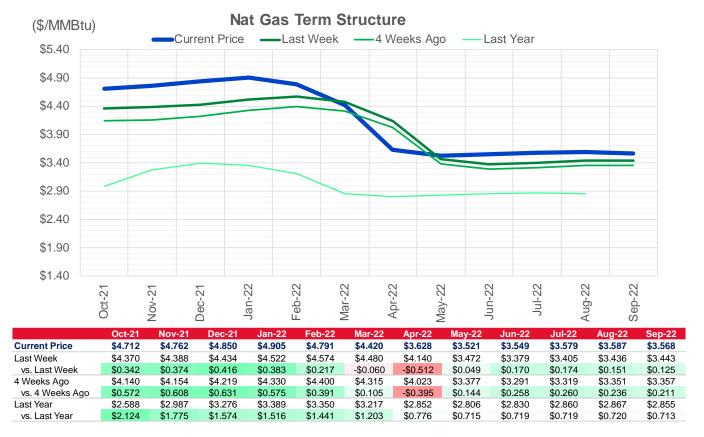
CME, and ICE Combined

CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MM							
	Current	Prior	Daily Change		Current	Prior	Daily Change
OCT 21	235911	235511	400	OCT 21	109290	107699	1592
NOV 21	209417	207215	2202	NOV 21	75121	74621	499
DEC 21	90901	90319	582	DEC 21	76927	76800	127
JAN 22	149472	148912	560	JAN 22	87019	87169	-150
FEB 22	57058	56562	496	FEB 22	67567	67388	179
MAR 22	115751	114633	1118	MAR 22	71185	71420	-235
APR 22	117549	118413	-864	APR 22	67477	67380	97
MAY 22	113998	111918	2080	MAY 22	68318	67463	856
JUN 22	38044	36211	1833	JUN 22	51427	51107	320
JUL 22	29139	29101	38	JUL 22	52318	52360	-42
AUG 22	30388	30172	216	AUG 22	52588	52344	244
SEP 22	34412	33460	952	SEP 22	52653	52459	194
OCT 22	84609	83913	696	OCT 22	60465	60575	-111
NOV 22	31467	31413	54	NOV 22	46535	46437	98
DEC 22	24904	24762	142	DEC 22	49666	49512	154
JAN 23	20903	20218	685	JAN 23	35877	35514	364
FEB 23	8150	7886	264	FEB 23	29791	29748	43
MAR 23	10047	10162	-115	MAR 23	32019	31793	226
APR 23	11298	10929	369	APR 23	27953	27577	376
MAY 23	6533	6534	-1	MAY 23	28832	28508	324
JUN 23	5243	5230	13	JUN 23	26799	26566	233
JUL 23	4043	4036	7	JUL 23	26904	26561	343
AUG 23	3276	3236	40	AUG 23	26756	26412	343
SEP 23	4187	4177	10	SEP 23	26058	25720	338
OCT 23	5747	5763	-16	OCT 23	28004	27693	311
NOV 23	1971	1956	15	NOV 23	27844	27756	89
DEC 23	1806	1795	11	DEC 23	25018	24932	86
JAN 24	1117	1117	0	JAN 24	14153	14052	101
FEB 24	885	880	5	FEB 24	11882	11802	80
MAR 24	3308	3308	0	MAR 24	15823	15738	85





Market Report



		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	3.75	4.01	0.26
TETCO M3	\$/MMBtu	3.58	3.17	-0.41
FGT Zone 3	\$/MMBtu	3.40	4.36	0.96
Zone 6 NY	\$/MMBtu	3.40	3.15	-0.25
Chicago Citygate	\$/MMBtu	4.52	4.18	-0.34
Michcon	\$/MMBtu	4.48	4.13	-0.35
Columbia TCO Pool	\$/MMBtu	3.89	3.32	-0.57
Ventura	\$/MMBtu	4.42	4.17	-0.25
Rockies/Opal	\$/MMBtu	4.80	4.06	-0.74
El Paso Permian Basin	\$/MMBtu	4.48	4.02	-0.46
Socal Citygate	\$/MMBtu	5.98	5.05	-0.93
Malin	\$/MMBtu	4.40	4.42	0.02
Houston Ship Channel	\$/MMBtu	4.74	4.37	-0.37
Henry Hub Cash	\$/MMBtu	4.71	4.10	-0.61
AECO Cash	C\$/GJ	2.95	3.57	0.62
Station2 Cash	C\$/GJ	2.91	4.47	1.56
Dawn Cash	C\$/GJ	4.49	4.11	-0.38

Source: CME, Bloomberg



				vs. 4 Weeks	
	Units	Current Price	vs. Last Week	Ago	vs. Last Year
NatGas Jul21/Oct21	\$/MMBtu	1.095	0.407	0.637	1.077
NatGas Oct21/Nov21	\$/MMBtu	0.050	-0.004	-0.018	0.002
NatGas Oct21/Jan22	\$/MMBtu	0.193	-0.001	- 0.050	▼ -0.088
NatGas Apr22/Oct22	\$/MMBtu	-0.033	- 0.029	-0.030	- 0.056
WTI Crude	\$/Bbl	69.29	0.080	2.810	29.520
Brent Crude	\$/BbI	72.22	▼ -1.190	3.180	3 0.210
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	0.000	0.000	0.000
Heating Oil	cents/Gallon	215.94	1.910	11.730	1 00.790
Propane, Mt. Bel	cents/Gallon	1.19	0.079	0.109	0.709
Ethane, Mt. Bel	cents/Gallon	0.36	0.027	0.022	0.167
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

