

Market Report

19 October 2021



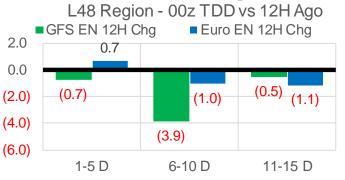
	С	urrent	Δ fro	om YD	Δ from 7D Avg		
WTI Prompt	\$	83.31	\$	0.87	\$	1.6	

	_	urrent	۸ fro	m VD	Δ from 7D			
		Δ 110	טו וווי	Avg				
Brent Prompt	\$	84.94	\$	0.61	\$	0.7		

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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 2.0 0.8 0.0 (2.0)(1.3)(1.6)(2.9) (2.5)(4.0)(3.9)(6.0)1-5 D 6-10 D 11-15 D

Current

Current		Δ from YD	Δ from 7D Avg		
US Dry Production	90.8	▼ -1.71	▼ -1.45		

US Dry Production	90.8	▼ -1.71	▼ -1.45	US Power Burns	28.3	
	Current	Δ from YD	Δ from 7D Avg		Current	∆ fr

-2.20 1.43

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	10.7	▼ -0.37	▼ -0.21

14.1

US

ResComm

	Current	Δ from YD	Δ from 7D Avg		
Canadian Imports	5.2	▼ -0.20	-0.06		

Δ from YD

0.07

	Current	Δ from YD	Δ from 7D Avg		
Mexican Exports	6.4	▼ -0.21	▼ -0.41		

Δ from 7D

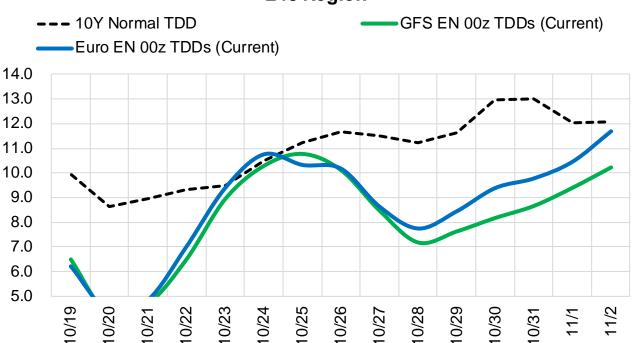
Avg

-1.67

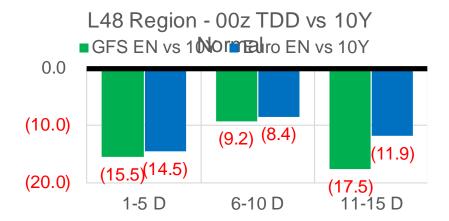


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Market Report

Lower 48 Component Models

Daily Balances

	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	18-Oct	19-Oct	DoD	vs. 7D
Lower 48 Dry Production	91.8	92.3	92.9	91.7	92.4	92.5	90.8	▼-1.7	▼ -1.5
Canadian Imports	4.7	5.4	5.5	5.6	5.6	5.4	5.2	▼-0.2	▼ -0.1
L48 Power	31.6	33.3	31.3	27.1	26.9	28.2	28.3	0.1	▼-1.4
L48 Residential & Commercial	10.8	10.8	11.6	13.1	15.6	16.3	14.1	▼ -2.2	1.1
L48 Industrial	19.3	19.1	19.2	19.0	18.8	18.5	18.1	▼-0.4	▼ -0.8
L48 Lease and Plant Fuel	5.0	5.0	5.1	5.0	5.0	5.0	4.9	▼ -0.1	▼ -0.1
L48 Pipeline Distribution	2.3	2.4	2.3	2.1	2.3	2.4	2.3	▼ -0.1	▼ 0.0
L48 Regional Gas Consumption	68.9	70.6	69.4	66.3	68.6	70.5	67.7	▼ -2.8	▼-1.3
Net LNG Delivered	10.79	11.20	11.03	11.19	10.64	11.12	10.75	▼-0.4	▼ -0.2
Total Mexican Exports	7.0	7.2	7.1	6.6	6.1	6.6	6.4	▼-0.2	▼ -0.4
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	9.9	8.6	10.8	13.2	12.6	9.7	11.1		

EIA Storage Week Balances

	10-Sep	17-Sep	24-Sep	1-Oct	8-Oct	15-Oct	WoW	vs. 4W
Lower 48 Dry Production	91.2	91.9	92.9	93.1	92.7	92.4	▼-0.4	▼-0.3
Canadian Imports	4.8	5.0	5.2	5.7	5.3	4.9	▼ -0.4	▼-0.4
L48 Power	33.8	35.0	33.3	30.3	32.8	31.7	▼-1.1	▼ -1.2
L48 Residential & Commercial	6.9	7.1	8.1	8.4	8.2	9.6	1.4	1.6
L48 Industrial	19.5	20.7	20.5	20.0	22.7	19.8	▼ -2.9	▼ -1.2
L48 Lease and Plant Fuel	5.0	5.0	5.1	5.1	5.1	5.0	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.2	2.3	2.3	2.1	2.2	2.2	0.0	▼ 0.0
L48 Regional Gas Consumption	67.4	70.2	69.2	65.9	70.9	68.3	▼ -2.6	▼-0.8
Net LNG Exports	11.0	10.2	9.9	10.3	9.9	10.7	8.0	0.6
Total Mexican Exports	6.7	6.6	6.8	6.7	6.5	6.6	▲ 0.1	▼-0.1
Implied Daily Storage Activity	10.9	9.8	12.1	16.0	10.7	11.8	1.1	
EIA Reported Daily Storage Activity	11.9	10.9	12.6	16.9	11.6			
Daily Model Error	-0.9	-1.0	-0.4	-0.9	-0.9			

Monthly Balances									
	2Yr Ago	LY					MTD		
	Oct-19	Oct-20	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	MoM	vs. LY
Lower 48 Dry Production	95.1	88.3	93.3	93.3	92.4	92.2	92.4	0.2	4.1
Canadian Imports	4.6	4.3	4.9	5.2	5.1	5.1	5.2	▲ 0.1	1.0
L48 Power	30.3	30.8	35.9	39.4	40.2	33.1	31.2	▼ -1.9	0.5
L48 Residential & Commercial	15.3	15.3	8.8	8.1	7.7	7.6	10.3	2.6	▼ -5.0
L48 Industrial	23.5	22.6	20.5	20.9	20.2	20.1	20.6	0.5	▼ -2.0
L48 Lease and Plant Fuel	5.1	4.8	5.0	5.1	5.0	5.0	5.0	▼ 0.0	0.2
L48 Pipeline Distribution	2.4	2.5	2.4	2.5	2.5	2.2	2.2	▼ 0.0	▼ -0.2
L48 Regional Gas Consumption	76.6	75.9	72.7	76.0	75.7	68.1	69.3	1.2	▼-6.6
Net LNG Exports	6.7	8.0	10.2	10.8	10.5	10.3	10.5	▲ 0.1	2.5
Total Mexican Exports	5.4	6.0	7.4	7.1	6.9	6.7	6.6	▼ -0.2	▲ 0.6
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	11.1	2.7	7.8	4.6	4.5	12.1	11.3		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	11-Oct	12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	DoD	vs. 7D
NRC Nuclear Daily Output	76.7	75.9	75.9	76.2	76.5	76.5	76.5	0.0	0.2
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	28.2	29.0	29.0	28.6	28.4	28.4	28.4	0.0	-0.2
NRC % Nuclear Cap Utilization	78.0	77.2	77.2	77.5	77.8	77.8	77.8	0.0	0.2

Wind Generation Daily Average - MWh (EIA)

	11-Oct	12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	DoD	vs. 7D
CALI Wind	3903	2794	1106	1127	1101	595	2072	1477	301
TEXAS Wind	10073	21150	13680	7415	12848	6423	8176	1753	-3755
US Wind	44491	56956	51697	35572	45319	37937	36901	-1036	-8428

Generation Daily Average - MWh (EIA)

	11-Oct	12-Oct	13-Oct	14-Oct	15-Oct	16-Oct	17-Oct	DoD	vs. 7D
US Wind	44491	56956	51697	35572	45319	37937	36901	-1036	-8428
US Solar	10382	8638	10394	12096	11812	12870	12123	-746	1091
US Petroleum	3104	3191	3541	4133	3899	2866	2879	13	-576
US Other	12117	12018	11892	12096	12372	10765	10820	56	-1056
US Coal	92217	88611	86198	90800	86306	75450	73091	-2358	-13506
US Nuke	76799	76459	76904	76915	76940	74714	75080	366	-1375
US Hydro	25314	26069	24493	23638	20876	21540	20159	-1381	-3496
US Gas	163608	159208	168864	176533	167604	145224	129143	-16081	-34364

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear	Generation	Weekly	Average -	GWh	(NRC)

	10-Sep	17-Sep	24-Sep	1-Oct	8-Oct	15-Oct	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	90.3	86.7	85.9	85.1	82.1	76.5	-5.6	1.0
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	14.6	18.2	19.0	19.8	22.7	28.3	5.6	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

Wind Generation Weekly Average - MWh (EIA)

	10-Sep	17-Sep	24-Sep	1-Oct	8-Oct	15-Oct	WoW	WoW Bcf/d Impact
CALI Wind	1236	2083	1936	2467	1099	2400	1301	-0.2
TEXAS Wind	7327	9541	9780	10364	4890	15396	10506	-1.9
US Wind	30662	42378	43250	43451	20468	49917	29449	-5.3
					-22983.3 -53%			

Generation Weekly Average - MWh (EIA)

	10-Sep	17-Sep	24-Sep	1-Oct	8-Oct	15-Oct	WoW	WoW Bcf/d Impact
US Wind	30662	42378	43250	43451	20468	49917	29449	-5.3
US Solar	14254	14057	12185	12957	11295	10242	-1053	0.2
US Petroleum	2072	2470	2594	2712	3901	3224	-677	0.1
US Other	8932	9273	9121	8709	10972	12069	1097	-0.2
US Coal	116993	115066	109062	94776	100713	89001	-11712	2.1
US Nuke	93162	89490	88789	88402	83696	77046	-6650	1.2
US Hydro	26944	24138	25340	25279	24518	24686	168	0.0
US Gas	181094	182116	175354	153814	176848	161959	-14889	2.7

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	Jul-21	Aug-21	Sep-21	Oct-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY			
NRC Nuclear Daily Output	81.9	80.5	90.1	91.5	87.2	78.2	80.9	-9.0	0.4			
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	22.9	24.4	14.8	13.4	17.7	26.7	24.0	9.0	-0.4			
NRC % Nuclear Cap Utilization	83.3	81.8	91.6	93.0	88.7	79.5	82.3	-9.1	0.4			

Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Jul-21	Aug-21	Sep-21	Oct-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	1728	1495	2338	2442	2020	1705	1835	-315	341
TEXAS Wind	9540	9032	7217	9901	9400	9779	10187	380	1154
US Wind	37983	39343	29217	35830	40215	36140	39203	-4076	-140

Generation Monthly Average - MWh (EIA)

, , ,	2Yr Ago	ĹY				MTD			
	Same 30 days	Same 30 days	Jul-21	Aug-21	Sep-21	Oct-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	37983	39343	29217	35830	40215	36140	39203	▲ 3063.1	▼ -140
US Solar	8421	9239	14140	13787	13379	11148	11700	552.1	2461
US Petroleum	4019	2615	4233	4484	2452	3436	3154	▼ -282	539
US Other	8416	7972	9326	9928	9008	11415	10452	▼ -962	2480
US Coal	96488	73728	137228	137655	110033	89949	93199	3250	19471
US Nuke	88165	83763	92911	94062	90146	79057	82608	3551	▼ -1155
US Hydro	23452	24931	29941	28532	25639	23543	24330	~ 787	▼ -601
US Gas	166371	164990	207823	210824	173536	161679	160975	9959	▼ -4015
US Total	433704	406551	524834	534937	464619	417567	426434	16854	19883



See National Wind and Nuclear daily charts



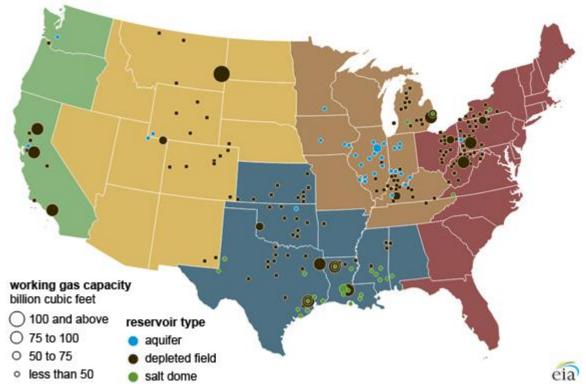
Regional S/D Models Storage Projection

Week Ending 15-Oct

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	11.5	1.2	12.7	89
East	4.1	0.6	4.7	33
Midwest	4.3	-0.6	3.8	26
Mountain	3.1	-3.1	-0.1	-1
South Central	-0.6	4.8	4.2	29
Pacific	0.5	-0.4	0.1	1

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

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



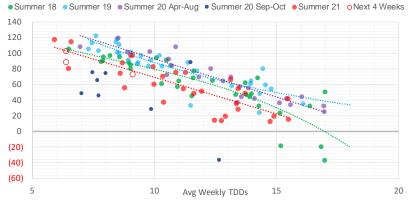


Weather Model Storage Projection

Next report and beyond

Week Ending	GWDDs	Week Storage Projection
15-Oct	6.4	89
22-Oct	6.4	103
29-Oct	9.1	73
05-Nov	#N/A	#N/A

Weather Storage Model - Next 4 Week Forecast



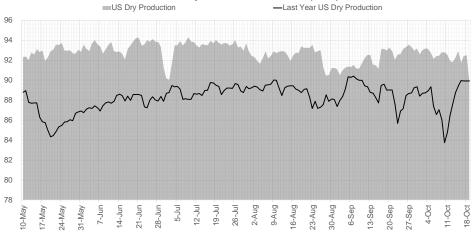
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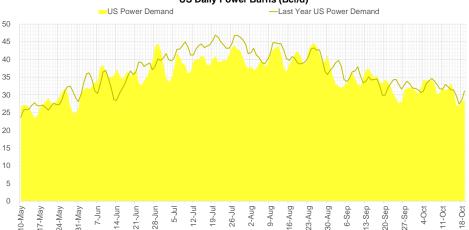


Supply - Demand Trends

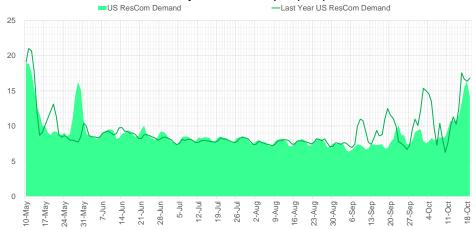
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



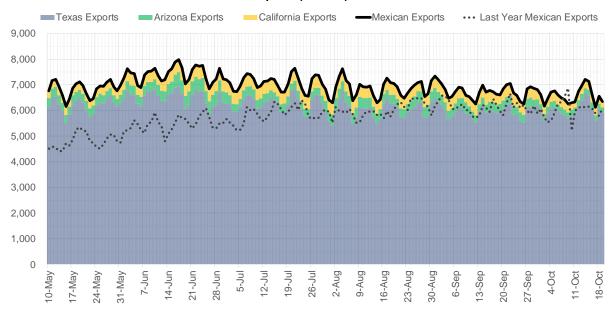
US Daily ResCom Consumption(Bcf/d)



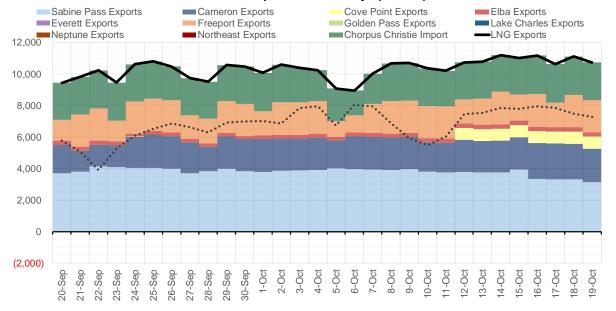
Source: Bloomberg



Mexican Exports (MMcf/d)







Source: Bloomberg



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

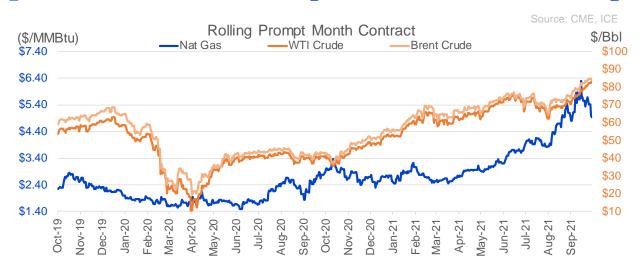
MONTH 11 11 11 11	YEAR 2021	PUT/CALL	STRIKE		CONTRACT	CONTRACT		STRIKE	CUMULATIVE
11 11	2021			VOL	MONTH	YEAR	PUT/CALL	STRIKE	COMOLATIVE
11 11		Р	4.50	10141	12	2021	Р	2.75	49042
11	2021	Р	5.00	8129	12	2021	Р	2.50	38604
	2021	C	6.00	7387	12	2021	Р	4.00	37798
	2021	Ċ	6.25	7063	12	2021	Р	3.00	37521
11	2021	Č	5.50	6088	11	2021	P	5.00	31369
11	2021	P	4.75	5134	12	2021	P	3.50	30669
12	2021	C	15.00	5127	11	2021	Р	3.00	30167
11	2021	C	5.80	4214	3	2022	C	10.00	29773
		P			11	2021	P	4.50	24964
12	2021		4.00	3752	11	2021	Ċ	6.00	24953
11	2021	С	5.75	3156	11	2021	Č	7.00	24676
11	2021	С	5.90	3042	11	2021	P	4.00	24389
11	2021	Р	4.00	2870	3	2021	C	8.00	23237
12	2021	Р	3.50	2707	12	2022	C	4.00	22526
3	2022	С	15.00	2521					
1	2022	Р	3.00	2275	3 11	2022 2021	C P	5.00 3.50	22325 20151
11	2021	С	7.50	2118			C		
11	2021	С	5.60	2080	11	2021		4.00	20144
11	2021	Р	4.70	2046	4	2022	С	3.00	19760
12	2021	Р	3.00	2040	1	2022	P	3.50	19465
12	2021	Р	2.75	2000	12	2021	С	6.00	18695
1	2022	Р	2.75	2000	3	2022	P -	3.50	18399
11	2021	С	7.00	1950	3	2022	Р	2.50	18304
11	2021	C	6.50	1860	1	2022	С	6.00	17970
2	2022	Ċ	15.00	1825	2	2022	P	3.50	17966
1	2022	Ċ	10.00	1790	1	2022	С	5.00	17937
3	2022	Č	10.00	1771	3	2022	Р	4.00	17123
1	2022	Ċ	15.00	1736	12	2021	Р	2.00	16877
12	2021	Č	7.00	1579	2	2022	С	5.00	16764
3	2022	C	8.00	1547	11	2021	С	5.00	16046
ა 11	2022	C	5.25		3	2022	С	4.00	15746
				1424	12	2021	С	7.00	15728
11	2021	P	4.60	1411	1	2022	Р	2.75	15307
2	2022	С	10.00	1405	1	2022	Р	4.00	15302
11	2021	P	5.25	1355	4	2022	Р	2.50	15036
12	2021	Р	4.50	1331	12	2022	С	5.00	14972
12	2021	Р	5.00	1305	11	2021	С	4.50	14898
1	2022	С	6.00	1289	12	2021	Р	5.00	14865
11	2021	Р	4.25	1266	4	2022	С	5.00	14734
3	2022	С	7.00	1201	12	2021	С	8.00	14636
3	2022	Р	3.50	1201	11	2021	Р	2.50	14488
12	2021	С	8.00	1109	11	2021	С	3.75	14479
12	2021	С	12.00	1075	1	2022	Ċ	4.00	14463
3	2022	С	9.00	1050	11	2021	P	3.25	14216
11	2021	P	5.50	1032	3	2022	C	7.00	13502
12	2021	C	6.40	1012	11	2021	P	4.75	13491
1	2022	Ċ	6.10	1004	2	2022	P	4.00	13298
3	2022	P	3.25	850	11	2022	C	4.00	13281
3	2022	P	4.00	822	12	2021	C	4.25 5.25	13243
3 11	2022	P	5.10	816		2022	P	5.25 5.00	13243
12	2021	C	11.00	714	3 3	2022		5.00 9 : CME, ICE	



Nat Gas Futures Open Interest

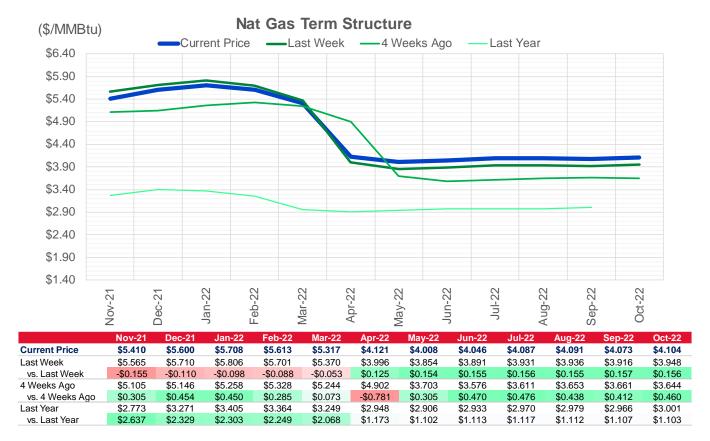
CME, and ICE Combined

ONE II			and IOL OUI		1154		/ 4 O O O O D A D A
CME Henry	Hub Futures (10			ICE Henry I			alent (10,000 MM
	Current	Prior	Daily Change		Current	Prior	Daily Change
NOV 21	74656	83778	-9122	NOV 21	87048	88884	-1837
DEC 21	156565	153567	2998	DEC 21	85977	87474	-1498
JAN 22	230611	231730	-1119	JAN 22	92257	92310	-53
FEB 22	70782	71333	-551	FEB 22	68505	68584	-80
MAR 22	149640	148400	1240	MAR 22	74935	75233	-298
APR 22	114149	115229	-1080	APR 22	75499	75772	-273
MAY 22	112752	112323	429	MAY 22	70210	70248	-38
JUN 22	39368	40542	-1174	JUN 22	53934	54005	-71
JUL 22	37705	38453	-748	JUL 22	56336	56343	-8
AUG 22	29467	29696	-229	AUG 22	55349	55419	-70
SEP 22	32686	32840	-154	SEP 22	56207	56217	-10
OCT 22	81743	81964	-221	OCT 22	62223	62186	37
NOV 22	34353	33883	470	NOV 22	48729	48727	2
DEC 22	25875	25982	-107	DEC 22	51972	51980	-8
JAN 23	28304	28485	-181	JAN 23	38805	38835	-30
FEB 23	10567	10785	-218	FEB 23	32132	32092	41
MAR 23	15283	14501	782	MAR 23	33731	33699	33
APR 23	13219	13324	-105	APR 23	33371	33512	-142
MAY 23	8672	8500	172	MAY 23	33502	33367	135
JUN 23	7246	7085	161	JUN 23	30156	30026	131
JUL 23	4767	4759	8	JUL 23	30356	30221	135
AUG 23	3887	3900	-13	AUG 23	30231	30096	135
SEP 23	4148	4293	-145	SEP 23	29376	29246	131
OCT 23	6066	6051	15	OCT 23	32759	32589	169
NOV 23	3122	3119	3	NOV 23	31933	30562	1371
DEC 23	3938	3937	1	DEC 23	28256	28079	177
JAN 24	1369	1374	-5	JAN 24	16094	15957	137
FEB 24	1121	1121	0	FEB 24	13699	13548	151
MAR 24	4260	4255	5	MAR 24	18218	18186	32
APR 24	3417	3411	6	APR 24	12715	12616	99





Market Report



		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	4.85	7.82	2.97
TETCO M3	\$/MMBtu	4.51	4.98	0.47
FGT Zone 3	\$/MMBtu	4.47	5.54	1.07
Zone 6 NY	\$/MMBtu	4.47	5.34	0.87
Chicago Citygate	\$/MMBtu	4.76	5.24	0.48
Michcon	\$/MMBtu	4.78	5.12	0.34
Columbia TCO Pool	\$/MMBtu	4.44	4.79	0.35
Ventura	\$/MMBtu	5.06	5.43	0.37
Rockies/Opal	\$/MMBtu	5.43	5.20	-0.23
El Paso Permian Basin	\$/MMBtu	4.67	5.06	0.39
Socal Citygate	\$/MMBtu	5.77	5.91	0.14
Malin	\$/MMBtu	5.70	5.74	0.04
Houston Ship Channel	\$/MMBtu	4.89	5.26	0.37
Henry Hub Cash	\$/MMBtu	5.45	5.17	-0.28
AECO Cash	C\$/GJ	4.05	4.16	0.11
Station2 Cash	C\$/GJ	1.98	6.41	4.43
Dawn Cash	C\$/GJ	4.78	5.20	0.42

Source: CME, Bloomberg



					VS	s. 4 Weeks		
	Units	Current Price	vs.	Last Week		Ago	VS	s. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224		0.000		0.856		2.193
NatGas Oct21/Nov21	\$/MMBtu	-0.852	•	-0.356	•	-0.889		-0.911
NatGas Oct21/Jan22	\$/MMBtu	-0.495		-0.251	•	-0.712		-0.779
NatGas Apr22/Oct22	\$/MMBtu	0.006		0.024		0.036		-0.014
WTI Crude	\$/Bbl	82.44		1.920		12.150		41.610
Brent Crude	\$/BbI	84.33		0.680		10.410		41.710
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	254.92		3.420		39.020		139.110
Propane, Mt. Bel	cents/Gallon	1.48		0.004		0.206		0.955
Ethane, Mt. Bel	cents/Gallon	0.43		0.002		0.049		0.217
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

