

Market Report

5 November 2021

	Cı	urrent	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$	5.66	\$ (0.06)	\$ 0.17

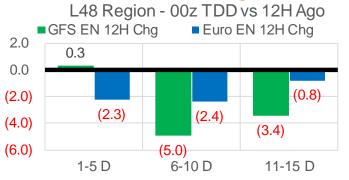
	С	urrent	Δfı	ro	m YD		m 7D vg
WTI Prompt	\$	79.41		\$	0.60	- \$	(3.2)

	_	urront	Λf	ro	m ∨D	∆ fro	m 7D
	Current	ΔΙ	10	טו ווו	Avg		
Brent	\$	80.96		\$	0 42	- \$	(2.6)
Prompt	Ψ	00.00		Ψ	0.12	Ψ	(2.0)

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 4.0 1.8 2.0 0.0 (2.0)(0.5)(1.8) (1.4) (2.5)(4.0)(3.8)(6.0)1-5 D 6-10 D 11-15 D

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	95.6	0.13	0.59

	Current	Δ from YD	Δ from 7D Avg
US ResComm	28.4	▼ -1.95	4.46

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	10.5	▼ -0.23	▼ -0.37

	Current	Δ from YD	Δ from 7D Avg		
US Power Burns	29.5	▼ -2.68	0.12		

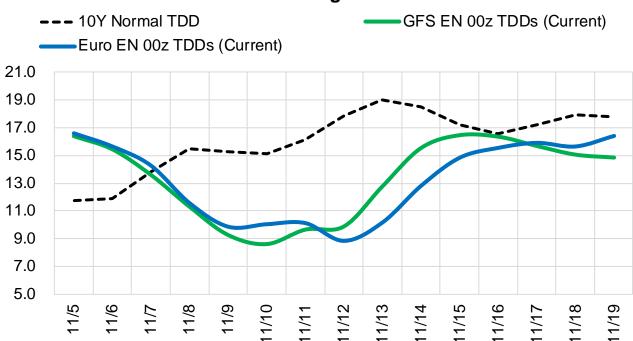
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	5.1	▼ -0.41	▼ -0.44

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.1	▼ -0.27	- 0.09

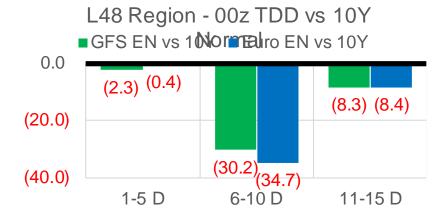


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal





Market Report

Lower 48 Component Models

Daily Balances

	30-Oct	31-Oct	1-Nov	2-Nov	3-Nov	4-Nov	5-Nov	DoD	vs.7D
Lower 48 Dry Production	95.2	94.5	94.0	95.6	94.9	95.4	95.6	0.1	▲ 0.6
Canadian Imports	5.6	5.6	5.2	5.5	5.6	5.5	5.1	▼-0.4	▼ -0.4
L48 Power	26.5	26.6	29.2	31.1	32.2	32.1	29.5	▼-2.7	▼-0.2
L48 Residential & Commercial	18.1	19.0	24.6	27.7	30.0	30.4	28.4	▼ -1.9	3.5
L48 Industrial	20.2	20.6	21.5	21.9	22.1	21.7	20.9	▼-0.7	▼ -0.4
L48 Lease and Plant Fuel	5.2	5.2	5.1	5.2	5.2	5.2	5.2	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.4	2.4	2.9	3.1	3.3	3.3	3.1	▼ -0.2	0.2
L48 Regional Gas Consumption	72.3	73.7	83.3	89.0	92.8	92.7	87.1	▼ -5.6	3.1
Net LNG Delivered	10.90	10.37	11.03	11.25	10.03	10.72	10.50	▼-0.2	▼ -0.2
Total Mexican Exports	6.6	6.3	4.9	6.1	6.4	6.4	6.1	▼ -0.3	▼ 0.0
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	10.9	9.6	0.0	-5.3	-8.6	-8.9	-3.1		

EIA Storage Week Balances

	1-Oct	8-Oct	15-Oct	22-Oct	29-Oct	5-Nov	WoW	vs. 4W
Lower 48 Dry Production	93.8	93.3	93.0	92.8	94.0	95.0	0.9	1.7
Canadian Imports	5.7	5.3	5.0	5.6	5.6	5.5	▼ -0.1	▲ 0.1
L48 Power	30.3	32.9	31.7	29.0	29.0	29.3	0.3	▼ -1.3
L48 Residential & Commercial	8.4	8.2	9.5	13.9	17.7	24.0	6.3	11.7
L48 Industrial	20.5	22.3	19.9	18.8	18.9	21.1	2.2	1.2
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.2	0.0	0.1
L48 Pipeline Distribution	2.1	2.2	2.2	2.3	2.5	2.8	0.4	0.5
L48 Regional Gas Consumption	66.5	70.6	68.4	69.0	73.2	82.4	9.2	▲12.1
Net LNG Exports	10.3	9.9	10.7	10.8	10.8	10.9	0.1	0.3
Total Mexican Exports	6.7	6.6	6.6	6.6	6.9	6.2	▼ -0.7	▼ -0.5
Implied Daily Storage Activity	16.0	11.6	12.2	12.0	8.7	1.0	-7.8	
EIA Reported Daily Storage Activity	16.9	11.6	13.1	12.4	9.0			
Daily Model Error	-0.8	0.0	-0.9	-0.5	-0.3			

Monthly Balances									
•	2Yr Ago	LY					MTD		
	Nov-19	Nov-20	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	MoM	vs. LY
Lower 48 Dry Production	96.2	91.1	93.6	94.1	93.0	93.4	94.9	1.5	3.9
Canadian Imports	4.5	4.6	5.2	5.1	5.1	5.4	5.4	▼ 0.0	8.0 🛋
L48 Power	27.5	25.7	39.4	40.1	33.1	30.3	30.8	0.5	5.1
L48 Residential & Commercial	32.8	24.4	8.1	7.8	7.7	12.9	28.2	15.3	3.8
L48 Industrial	24.9	22.5	21.2	21.7	20.8	20.0	21.6	1.6	▼-0.8
L48 Lease and Plant Fuel	5.2	5.0	5.1	5.1	5.1	5.1	5.2	0.1	0.2
L48 Pipeline Distribution	3.0	2.7	2.5	2.6	2.2	2.3	3.1	8.0	0.5
L48 Regional Gas Consumption	93.5	80.2	76.3	77.3	68.9	70.6	89.0	▲18.4	8.8
Net LNG Exports	7.2	10.1	10.8	10.5	10.3	10.6	10.7	▲ 0.1	▲ 0.6
Total Mexican Exports	5.2	6.1	7.1	6.9	6.7	6.6	6.0	▼ -0.7	▼-0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	-5.1	-0.7	4.6	4.5	12.1	11.0	-5.3		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	28-Oct	29-Oct	30-Oct	31-Oct	1-Nov	2-Nov	3-Nov	DoD	vs. 7D
NRC Nuclear Daily Output	71.5	71.1	71.0	71.1	71.6	72.1	73.4	1.3	2.0
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	33.4	33.7	33.9	33.8	33.3	32.8	31.5	-1.3	-2.0
NRC % Nuclear Cap Utilization	72.7	72.3	72.2	72.3	72.8	73.3	74.6	1.3	2.0

Wind Generation Daily Average - MWh (EIA)

	28-Oct	29-Oct	30-Oct	31-Oct	1-Nov	2-Nov	3-Nov	DoD	vs. 7D
CALI Wind	739	485	1946	2725	2224	1586	362	-1224	-1256
TEXAS Wind	18446	13630	7276	12278	6448	7823	7268	-555	-3715
US Wind	63086	54599	28405	39804	32678	24544	17622	-6922	-22897

Generation Daily Average - MWh (EIA)

	28-Oct	29-Oct	30-Oct	31-Oct	1-Nov	2-Nov	3-Nov	DoD	vs. 7D
US Wind	63086	54599	28405	39804	32678	24544	17622	-6922	-22897
US Solar	9171	10654	11213	10479	8937	8399	9225	826	-584
US Petroleum	3204	3306	3114	2737	3517	3943	4210	268	907
US Other	9172	8869	8151	7926	8675	9436	10010	573	1305
US Coal	72900	73786	64309	61219	80478	85332	89192	3859	16187
US Nuke	74714	74753	72671	72842	75126	75925	77899	1975	3561
US Hydro	24683	23786	22551	23103	27432	27731	27322	-409	2441
US Gas	145931	146491	137660	122454	162142	174675	183417	8742	35192

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear	Generation	Weekly	Average -	GWh	(NRC)

	1-Oct	8-Oct	15-Oct	22-Oct	29-Oct	5-Nov	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	85.1	82.1	76.5	73.6	71.6	72.2	0.6	-0.1
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	19.8	22.7	28.3	31.2	33.3	32.7	-0.6	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

Wind Generation Weekly Average - MWh (EIA)

	1-Oct	8-Oct	15-Oct	22-Oct	29-Oct	5-Nov	WoW	WoW Bcf/d Impact
CALI Wind	2467	1099	2400	1270	2314	1384	-929	0.2
TEXAS Wind	10364	4890	15396	10729	15462	8856	-6606	1.2
US Wind	43478	20468	49922	43721	49868	30753	-19115	3.4
					6146.9			
					14%			

Generation Weekly Average - MWh (EIA)

	1-Oct	8-Oct	15-Oct	22-Oct	29-Oct	5-Nov	WoW	WoW Bcf/d Impact
US Wind	43478	20468	49922	43721	49868	30753	-19115	3.4
US Solar	12957	11295	10530	12209	10103	9733	-370	0.1
US Petroleum	2712	3901	3224	3092	2815	3577	762	-0.1
US Other	8709	10972	12221	12109	10161	9011	-1150	0.2
US Coal	94792	100713	89841	74011	73356	77644	4288	-0.8
US Nuke	88402	83696	77046	73748	73713	75302	1589	-0.3
US Hydro	25370	24552	24701	23105	23540	25607	2067	-0.4
US Gas	153813	176848	162707	150057	152681	158608	5927	-1.1

See National Wind and Nuclear daily charts



Monthly Average Generation Data

Nuclear Generation Monthly A	verage -	GWh (Ni	RC)						
	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Aug-21	Sep-21	Oct-21	Nov-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
NRC Nuclear Daily Output	79.6	75.8	91.5	87.2	75.5	73.4	73.8	-2.1	-2.0
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	25.3	29.1	13.4	17.7	29.4	31.5	31.1	2.1	2.0
NRC % Nuclear Cap Utilization	80.9	77.1	93.0	88.7	76.8	74.6	75.0	-2.1	-2.1

Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Aug-21	Sep-21	Oct-21	Nov-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	1178	1316	2442	2020	1765	979	1795	-787	480
TEXAS Wind	9433	10012	9901	9400	11565	7215	12424	-4350	2411
US Wind	37369	41040	35830	40222	40989	22018	42389	-18971	1349

Generation Monthly Average - MWh (EIA)

, , , , , , , , , , , , , , , , , , , ,	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Aug-21	Sep-21	Oct-21	Nov-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	37369	41040	35830	40222	40989	22018	42389	2 0371.8	1349
US Solar	7078	8097	13787	13379	11010	9002	10556	1554.1	2459
US Petroleum	3356	2529	4484	2452	3238	4018	3224	-795	695
US Other	8334	8509	9928	9008	11070	9628	10895	1266	2385
US Coal	85417	84780	137655	110037	82734	86677	79737	-6940	▼ -5043
US Nuke	85887	79259	94062	90146	76700	76950	75265	▼ -1684	▼ -3994
US Hydro	24067	25826	28532	25661	23894	27426	24420	▼ -3006	▼ -1406
US Gas	149787	155065	210824	173536	158150	177414	157663	10767	2598
US Total	401769	405231	534937	464627	410512	413023	406950	1163	1718



See National Wind and Nuclear daily charts



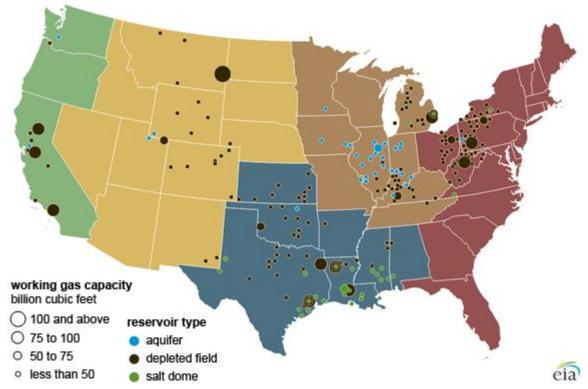
Regional S/D Models Storage Projection

Week Ending 5-Nov

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	0.7	0.7	1.3	9
East	-0.3	-0.1	-0.4	-3
Midwest	-0.8	0.6	-0.2	-1
Mountain	3.1	-3.2	-0.1	-1
South Central	-1.8	3.7	1.9	13
Pacific	0.5	-0.3	0.1	1

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

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



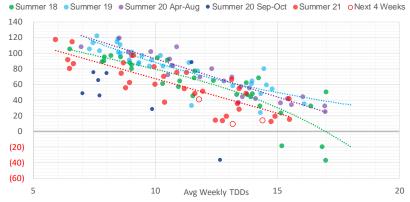


Weather Model Storage Projection

Next report
and beyond

Week Ending	GWDDs	Week Storage Projection
05-Nov	13.2	9
12-Nov	11.8	41
19-Nov	14.4	14
26-Nov	#N/A	#N/A

Weather Storage Model - Next 4 Week Forecast



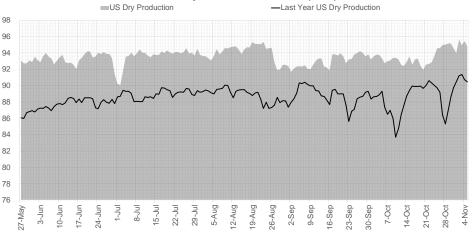
Go to larger image



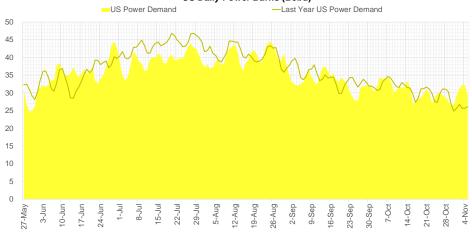


Supply - Demand Trends

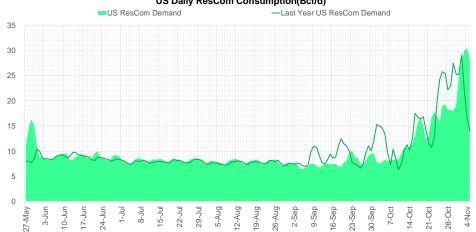
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



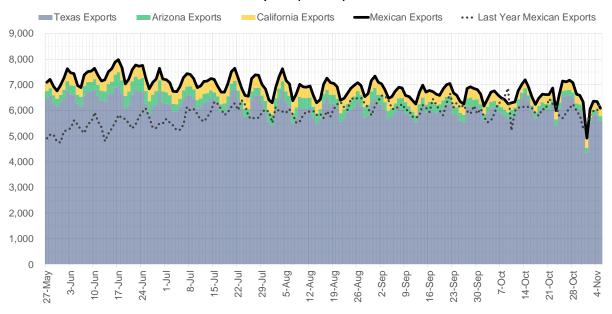
US Daily ResCom Consumption(Bcf/d)



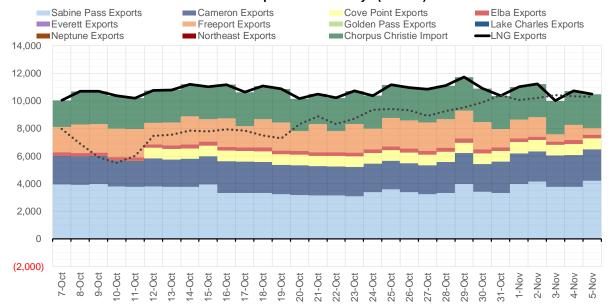
Source: Bloomberg



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

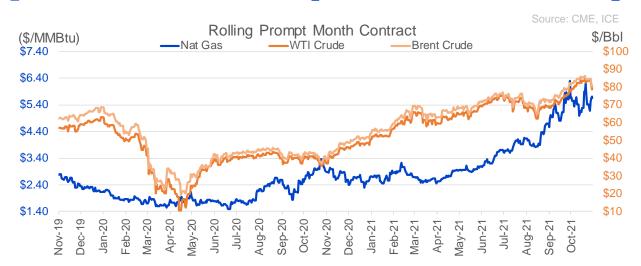
	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE	CONTRACT	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE OI
MONTH	YEAR	1 0 1/O/LEE	OTTURL	VOL	MONTH	YEAR	1 01/0/LL	OTRIKE	COMOL/TIVE OF
1	2022	С	7.00	4262	12	2021	Р	2.75	54603
3	2022	C	8.00	4236	12	2021	Р	4.00	49643
12	2021	P	5.50	4099	12	2021	Р	3.00	40231
2	2022	C	8.00	3660	12	2021	Р	2.50	39420
3	2022	Ċ	10.00	3211	12	2021	Р	3.50	34541
1	2022	P	4.00	3203	3	2022	С	10.00	31825
12	2021	С	6.00	3162	3	2022	С	8.00	25847
1	2022	C	8.00	3006	12	2021	Р	4.25	23733
1	2022	P	3.50	2721	12	2021	Р	5.00	23501
12	2021	С	7.00	2714	1	2022	Р	3.00	23136
3	2022	С	7.00	2687	3	2022	С	5.00	23040
12	2021	С	6.50	2603	1	2022	Р	2.75	22914
2	2022	C	10.00	2526	12	2021	С	4.00	22526
1	2022	Č	6.00	2286	12	2021	С	6.00	22052
12	2021	P	5.40	2272	1	2022	С	6.00	21771
12	2021	P	4.50	2260	3	2022	Р	3.00	20951
3	2022	Р	3.50	1839	4	2022	С	3.00	19710
12	2021	Р	4.00	1767	12	2021	С	8.00	18985
12	2021	Р	5.00	1729	1	2022	Р	3.50	18982
12	2021	P	4.75	1633	12	2021	С	7.00	18741
3	2022	C	6.00	1543	3	2022	Р	3.50	18664
1	2022	P	3.40	1504	3	2022	Р	2.50	18561
2	2022	C	6.00	1504	1	2022	С	5.00	18056
3	2022	C	5.00	1293	3	2022	Р	4.00	17662
3	2022	C	9.00	1293	1	2022	Р	4.00	17431
2	2022	P	3.75	1260	2	2022	С	5.00	16863
					12	2021	Р	2.00	16834
12 12	2021	C P	6.25	1196	1	2022	С	7.00	15704
	2021		3.75	1109	3	2022	С	4.00	15631
12	2021	С	5.75	1079	2	2022	Р	3.50	15625
12	2021	С	7.50	949	4	2022	Р	2.50	15514
12	2021	С	8.00	933	4	2022	С	5.00	15195
3	2022	С	20.00	820	12	2022	С	5.00	15132
2	2022	P	4.75	801	12	2021	Р	4.50	14929
12	2021	P	4.25	770	2	2022	Р	4.00	14483
1	2022	P	4.50	762	1	2022	С	4.00	14408
12	2021	C	6.75	649	5	2022	С	3.00	13733
2	2022	P	3.50	624	3	2022	С	7.00	13495
1	2022	P	5.00	618	6	2022	С	3.00	13438
1	2022	С	6.50	614	1	2022	С	10.00	13400
2	2022	Р	4.00	613	12	2022	С	4.50	13367
1	2022	Р	4.75	606	1	2022	Р	3.25	13279
1	2022	С	7.50	590	3	2022	Р	5.00	13263
1	2022	С	10.00	577	12	2022	С	5.25	13263
12	2021	Р	5.25	555	7	2022	С	3.00	13230
12	2021	С	10.00	553	8	2022	С	3.00	13226
5	2022	Р	2.75	550	9	2022	С	3.00	13225
12	2021	С	12.00	532	12	2021	С	15.00	13219
12	2021	С	5.50	525	3	2022	С	3.00	13177
1	2022	С	5.75	507	2	2022	C	6	13173.75
							Source	e: CME, ICE	



Nat Gas Futures Open Interest

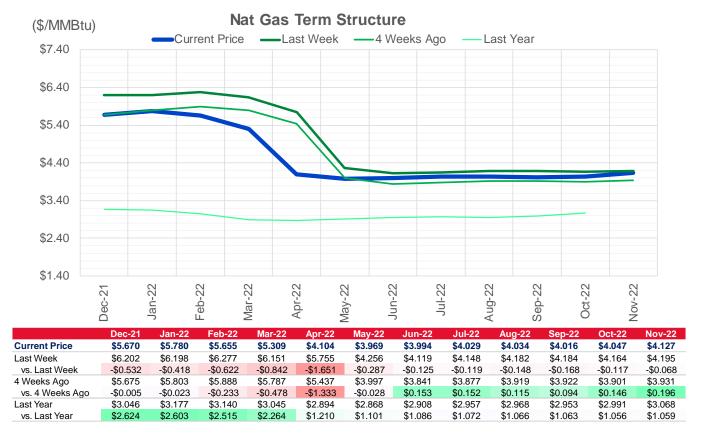
CME, and ICE Combined

CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MM							
CME H	enry Hub Futures	Hub Futures Con		No. 1			
	Current	Prior	Daily Change		Current	Prior	Daily Change
DEC 21		142203	-2099	DEC 21	90764	91300	-536
JAN 22	214960	213106	1854	JAN 22	85366	85343	23
FEB 22	75864	75934	-70	FEB 22	69631	69253	378
MAR 22	163798	162827	971	MAR 22	78797	79214	-418
APR 22	116121	114684	1437	APR 22	78123	78567	-444
MAY 22	126447	125261	1186	MAY 22	71766	71719	47
JUN 22	44996	43255	1741	JUN 22	55806	55742	64
JUL 22	38625	37551	1074	JUL 22	58183	57771	412
AUG 22	31122	31426	-304	AUG 22	56838	56855	-17
SEP 22	35441	34547	894	SEP 22	57383	57438	-55
OCT 22	86704	86978	-274	OCT 22	62889	62903	-14
NOV 22	34778	34712	66	NOV 22	49455	49267	188
DEC 22	28130	27868	262	DEC 22	52238	52305	-67
JAN 23	31138	31452	-314	JAN 23	40250	40232	18
FEB 23	11290	11158	132	FEB 23	33372	33419	-47
MAR 23	19006	18978	28	MAR 23	36111	35905	206
APR 23	15921	15816	105	APR 23	36488	36501	-13
MAY 23	9619	9478	141	MAY 23	35605	35490	116
JUN 23	7676	7605	71	JUN 23	31744	31565	180
JUL 23	5415	5393	22	JUL 23	31830	31744	87
AUG 23	4230	4196	34	AUG 23	32801	32714	87
SEP 23	5599	5590	9	SEP 23	30887	30702	185
OCT 23		10212	116	OCT 23	34618	34706	-88
NOV 23		4301	60	NOV 23	33172	33167	5
DEC 23	7706	7647	59	DEC 23	30745	30765	-20
JAN 24	4760	4761	-1	JAN 24	19291	18733	559
FEB 24	· · · · · · · · · · · · · · · · · · ·	1442	0	FEB 24	14777	14520	256
MAR 24	8916	8909	7	MAR 24	19650	19219	432
APR 24		5602	5	APR 24	13894	13512	382
MAY 24	1831	1831	0	MAY 24	14541	14165	377





Market Report



		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	5.70	15.57	9.87
TETCO M3	\$/MMBtu	5.32	7.45	2.13
FGT Zone 3	\$/MMBtu	5.57	5.89	0.32
Zone 6 NY	\$/MMBtu	5.57	7.74	2.17
Chicago Citygate	\$/MMBtu	5.54	6.06	0.52
Michcon	\$/MMBtu	5.58	5.50	-0.08
Columbia TCO Pool	\$/MMBtu	5.18	5.27	0.09
Ventura	\$/MMBtu	5.18	6.38	1.20
Rockies/Opal	\$/MMBtu	5.24	5.86	0.62
El Paso Permian Basin	\$/MMBtu	5.11	5.88	0.77
Socal Citygate	\$/MMBtu	5.90	7.70	1.80
Malin	\$/MMBtu	5.45	6.68	1.23
Houston Ship Channel	\$/MMBtu	5.27	5.94	0.68
Henry Hub Cash	\$/MMBtu	5.70	5.61	-0.09
AECO Cash	C\$/GJ	4.30	4.80	0.50
Station2 Cash	C\$/GJ	4.35	7.22	2.87
Dawn Cash	C\$/GJ	5.58	5.72	0.14

Source: CME, Bloomberg



					vs. 4 Weeks			
	Units	Current Price	vs.	Last Week		Ago	VS	s. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224		0.000		0.000		2.182
NatGas Oct21/Nov21	\$/MMBtu	0.361		0.000		0.525		0.278
NatGas Oct21/Jan22	\$/MMBtu	-0.015		-0.045		-0.084		-0.352
NatGas Apr22/Oct22	\$/MMBtu	-0.042		-0.017		0.019		-0.069
WTI Crude	\$/Bbl	78.81		-4.000		0.510		40.020
Brent Crude	\$/Bbl	80.54	\blacksquare	-3.780		-1.410		39.610
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	240.66	\blacksquare	-10.990		-5.300		123.700
Propane, Mt. Bel	cents/Gallon	1.37	~	-0.079		-0.104		0.805
Ethane, Mt. Bel	cents/Gallon	0.43		-0.002		-0.004		0.206
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

