

Market Report

29 September 2021



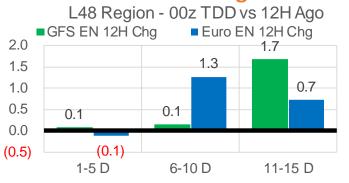
	С	urrent	Δ from YD	Δ from Av	
WTI Prompt	\$	74.83	\$ (0.46)	\$	0.8

	_	urrant	Δ from YD	Δ from 7D			
	C	urreni		Αv	g		
Brent	Φ	78 61	\$ (0.48)	2	0.6		
Prompt	Ψ	7 0.0 1	Ψ ψ (0.40)	_ ψ	0.0		

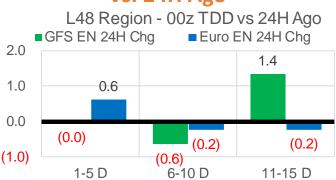
Page Menu

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



	Current	Δ from YD	Δ from 7D Avg
US Dry Production	91.9	▼ -1.26	▼ -0.87

	Current	Δ from YD	Δ from 7D Avg		
US ResComm	9.0	0.93	0.40		

	Current	Δ from YD	Δ from 7D Avg		
Net LNG Exports	10.5	a 0.95	▲ 0.34		

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	31.5	▼ -0.27	1.49

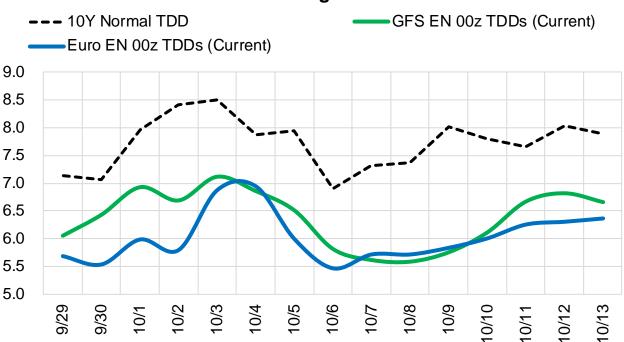
	Current		Δ from 7D Avg		
Canadian Imports	5.8	▲ 0.08	0.17		

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.7	▼ -0.16	0.07

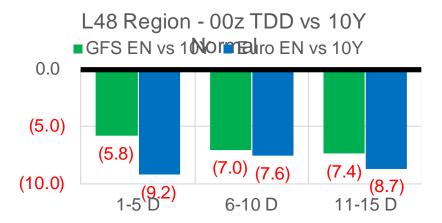


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Market Report

Lower 48 Component Models

Daily Balances

	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	DoD	vs.7D
Lower 48 Dry Production	92.4	92.5	93.0	93.1	93.4	93.2	91.9	▼-1.3	▼-1.0
Canadian Imports	5.6	5.7	5.6	5.6	5.7	5.7	5.8	0.1	▲ 0.1
L48 Power	30.3	28.8	27.7	28.0	31.1	31.8	31.5	▼-0.3	1.9
L48 Residential & Commercial	10.2	8.8	8.8	7.5	7.4	8.1	9.0	0.9	a 0.6
L48 Industrial	20.5	20.4	20.4	20.1	20.1	20.0	19.9	▼-0.1	▼ -0.4
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	5.1	▼-0.1	▼ -0.1
L48 Pipeline Distribution	2.1	1.9	1.9	1.8	2.0	2.0	2.1	0.0	0.1
L48 Regional Gas Consumption	68.1	65.1	64.0	62.5	65.7	67.0	67.5	0.6	2.1
Net LNG Delivered	9.47	10.60	10.80	10.48	9.75	9.52	10.46	0.9	0.4
Total Mexican Exports	6.8	6.6	6.3	6.3	6.5	6.9	6.7	▼ -0.2	▲ 0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	13.7	15.9	17.5	19.4	17.1	15.6	13.0		

EIA Storage Week Balances

	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	24-Sep	WoW	vs. 4W
Lower 48 Dry Production	92.4	93.0	90.8	91.1	91.6	92.7	1.1	1.0
Canadian Imports	5.0	5.3	5.0	4.8	5.2	5.2	▲ 0.0	▲ 0.1
L48 Power	39.7	41.9	38.1	33.7	35.0	33.2	▼-1.8	▼ -4.0
L48 Residential & Commercial	7.6	7.8	7.5	7.1	7.3	8.2	0.9	a 0.8
L48 Industrial	20.9	20.9	18.9	19.5	20.9	20.4	▼ -0.5	0.4
L48 Lease and Plant Fuel	5.1	5.1	5.0	5.0	5.0	5.1	0.1	0.0
L48 Pipeline Distribution	2.3	2.4	2.2	2.1	2.2	2.1	▼ 0.0	▼ -0.1
L48 Regional Gas Consumption	75.6	78.2	71.6	67.4	70.4	69.0	▼-1.4	▼-2.9
Net LNG Exports	10.9	10.6	10.5	11.0	10.2	9.9	▼ -0.3	▼-0.6
Total Mexican Exports	6.8	6.8	7.0	6.7	6.6	6.8	▲ 0.2	▲ 0.0
Implied Daily Storage Activity	4.2	2.8	6.7	10.9	9.5	12.1	2.6	
EIA Reported Daily Storage Activity	4.1	2.9	7.4	11.9	10.9			
Daily Model Error	0.1	-0.1	-0.8	-1.0	-1.3			

Monthly Balances									
•	2Yr Ago	LY					MTD		
	Sep-19	Sep-20	May-21	Jun-21	Jul-21	Aug-21	Sep-21	MoM	vs. LY
Lower 48 Dry Production	94.4	89.1	93.1	93.4	92.4	92.2	92.0	▼-0.2	2.8
Canadian Imports	4.7	3.8	4.5	4.8	5.2	5.1	5.1	▲ 0.0	1.3
L48 Power	36.3	34.4	26.8	35.9	39.6	40.2	33.1	▼ -7.1	▼ -1.3
L48 Residential & Commercial	8.2	8.8	12.8	8.9	8.6	7.7	7.7	▼ 0.0	▼ -1.1
L48 Industrial	22.5	20.3	20.8	20.6	19.6	20.1	20.1	0.0	- 0.2
L48 Lease and Plant Fuel	5.1	4.9	5.1	5.1	5.1	5.1	5.1	▼ 0.0	0.2
L48 Pipeline Distribution	2.2	2.2	2.1	2.2	2.3	2.3	2.1	▼ -0.2	▼ -0.1
L48 Regional Gas Consumption	74.5	70.6	67.6	72.7	75.1	75.4	68.0	▼ -7.4	▼ -2.6
Net LNG Exports	6.2	5.9	10.8	10.2	10.8	10.5	10.3	▼ -0.1	4.4
Total Mexican Exports	5.3	6.1	6.8	7.4	7.1	6.9	6.7	▼ -0.2	▲ 0.6
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	13.2	10.2	12.4	8.0	4.6	4.5	12.0		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	DoD	vs. 7D
NRC Nuclear Daily Output	86.2	86.6	86.5	86.5	85.6	85.7	84.6	-1.0	-1.5
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	18.7	18.3	18.4	18.4	19.3	19.2	20.2	1.0	1.5
NRC % Nuclear Cap Utilization	87.6	88.1	88.0	87.9	87.1	87.1	86.1	-1.1	-1.6

Wind Generation Daily Average - MWh (EIA)

	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	DoD	vs. 7D
CALI Wind	681	1454	1560	828	1682	3242	4569	1327	2994
TEXAS Wind	15903	5860	11025	10189	7123	11806	9937	-1869	-381
US Wind	49488	33230	44897	45990	34443	53198	47478	-5720	3937

Generation Daily Average - MWh (EIA)

	21-Sep	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	DoD	vs. 7D
US Wind	49488	33230	44897	45990	34443	53198	47478	-5720	3937
US Solar	10389	12552	11856	12104	13131	12258	12429	171	380
US Petroleum	2632	2491	2171	1711	1835	2017	3239	1222	1096
US Other	8675	8885	8465	8344	8178	7505	8407	902	65
US Coal	109937	107259	96633	91888	90430	84363	94996	10633	-1756
US Nuke	89207	89642	89850	89617	89000	88851	87958	-893	-1403
US Hydro	26637	26671	26711	27103	25005	23417	26559	3143	635
US Gas	173177	171981	154958	143358	135866	129933	161274	31341	9728

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear Generation Week	y Average - GWh (NF	(C)
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	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	24-Sep	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	92.4	91.9	90.2	90.3	86.7	85.9	-0.8	0.1
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	12.5	12.9	14.7	14.6	18.2	19.0	0.8	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

Wind Generation Weekly Average - MWh (EIA)

	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	24-Sep	WoW	WoW Bcf/d Impact
CALI Wind	3210	2052	2247	1236	2083	1936	-148	0.0
TEXAS Wind	7171	12600	7534	7327	9541	9780	239	0.0
US Wind	29243	41912	35441	30659	42355	43173	819	-0.1
					11695.5			
					38%			

Generation Weekly Average - MWh (EIA)

	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	24-Sep	WoW	WoW Bcf/d
	20 / 149	21 Aug	о оор	10 ССР	т сор	24 0 0p		Impact
US Wind	29243	41912	35441	30659	42355	43173	819	-0.1
US Solar	12828	14536	13410	14316	14116	12041	-2076	0.4
US Petroleum	4466	5323	3135	2072	2470	2594	124	0.0
US Other	10104	10131	9766	8934	9277	9039	-238	0.0
US Coal	138055	136177	136318	116993	115066	109063	-6003	1.1
US Nuke	95157	94358	92365	93162	89489	88789	-701	0.1
US Hydro	28988	30621	28181	26944	24140	25336	1196	-0.2
US Gas	212121	216025	205503	181094	182107	174978	-7129	1.3

See National Wind and Nuclear daily charts



Monthly Average Generation Data

Nuclear Generation Monthly	Average -	GWh (NI	RC)						
	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	89.2	88.8	88.7	90.1	91.5	87.3	87.4	-4.2	-1.4
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	15.7	16.1	16.2	14.8	13.4	17.6	17.5	4.2	1.4
NRC % Nuclear Cap Utilization	90.7	90.3	90.2	91.6	93.0	88.8	88.9	-4.3	-1.4

Wind Generation Monthly Average - MWh (EIA)

	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
CALI Wind	2258	1460	2881	2338	2442	2165	2193	-277	733
TEXAS Wind	8299	7150	9509	7217	9901	9254	9157	-647	2008
US Wind	33236	31887	36864	29217	35830	40604	40293	4774	8405

Generation Monthly Average - MWh (EIA)

, , ,	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	33236	31887	36864	29217	35830	40604	40293	▼ -311.4	8405
US Solar	8148	9232	14577	14195	13846	13290	13224	▼ -66.2	3992
US Petroleum	4366	2971	4155	4233	4484	2409	2406	▼ -3	▼ -565
US Other	8102	8450	8205	9327	9929	8896	8944	47	494
US Coal	116109	95846	122034	137228	137655	109974	110968	994	15122
US Nuke	95811	91787	92180	92911	94062	90238	90306	68	▼ -1481
US Hydro	26853	26386	32566	29941	28532	25773	25846	~ 73	▼ -540
US Gas	190320	178969	189395	207823	210824	173092	174256	803	▼ -4713
US Total	484574	445668	500268	524889	534996	464532	466482	1916	20814



See National Wind and Nuclear daily charts



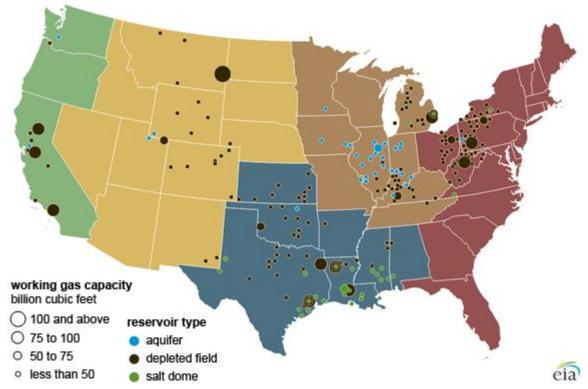
Regional S/D Models Storage Projection

Week Ending 24-Sep

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	11.8	1.3	13.1	92
East	3.1	0.6	3.7	26
Midwest	5.2	-0.7	4.5	31
Mountain	3.8	-3.6	0.3	2
South Central	-1.0	5.3	4.3	30
Pacific	0.7	-0.4	0.3	2

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

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



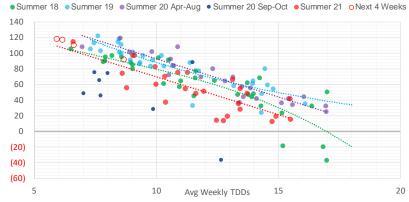


Weather Model Storage Projection

Next report and beyond

Week Ending	GWDDs	Week Storage Projection
24-Sep	8.7	92
01-Oct	5.9	118
08-Oct	6.2	117
15-Oct	6.6	110

Weather Storage Model - Next 4 Week Forecast



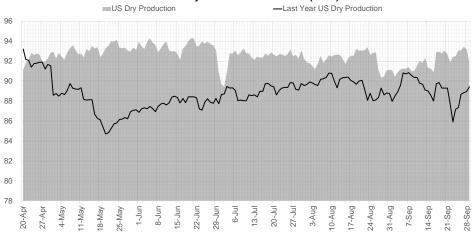
Go to larger image



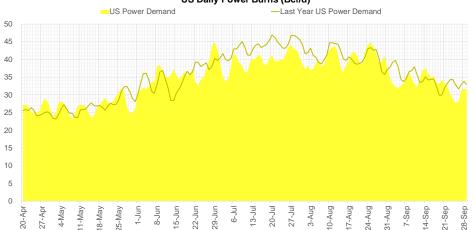


Supply - Demand Trends

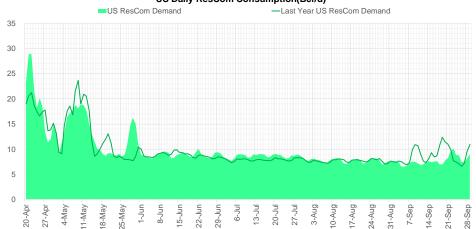
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



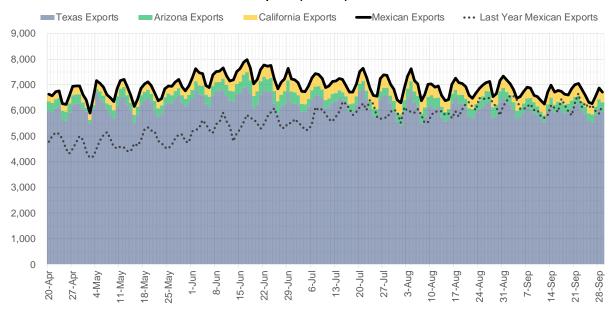
US Daily ResCom Consumption(Bcf/d)



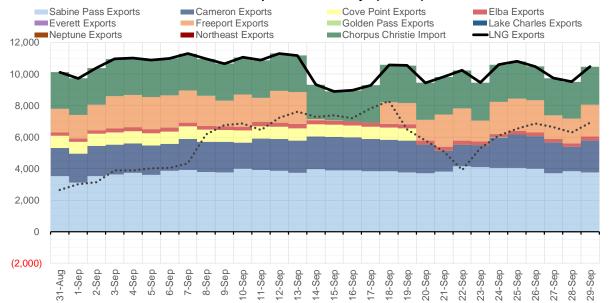
Source: Bloomberg



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

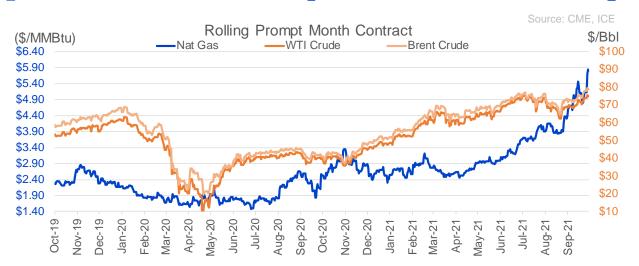
	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE	CONTRACT	CONTRACT	PUT/CALL	STRIKE	CUMULATIV
MONTH	YEAR	TOTOALL	OTIVILL	VOL	MONTH	YEAR	1 01/CALL	STRIKE	COMOLATIV
12	2021	Р	3.50	18057	12	2021	Р	2.75	42009
12	2021	Р	4.00	10101	12	2021	Р	2.50	38553
11	2021	Р	5.00	7637	12	2021	Р	3.00	33841
12	2021	P	3.00	7508	11	2021	Р	3.00	30129
11	2021	C	7.00	5225	12	2021	Р	4.00	29223
12	2021	C	7.00	5015	3	2022	С	8.00	27124
11	2021	Ċ	6.00	4768	12	2021	Р	3.50	26972
11	2021	Č	5.00	4189	3	2022	С	10.00	26879
11	2021	Č	4.00	4056	11	2021	Р	4.00	24853
11	2021	C	6.50	4049	11	2021	С	4.00	23311
1	2022	P	4.25	3858	11	2021	C	7.00	22741
11	2021	r P	4.50	3277	12	2021	С	4.00	22596
3	2021	C	10.00	3231	11	2021	P	3.50	20962
		P			3	2022	C	5.00	20724
1	2022		4.50	3213	3	2022	P	3.50	20691
3	2022	С	9.00	3205	4	2022	Ċ	3.00	19760
11	2021	P	5.50	3186	2	2022	P	3.50	18813
4	2022	Р	3.00	3176	11	2021	C	6.00	18328
11	2021	С	5.90	2811	1	2022	Č	5.00	18208
2	2022	С	9.00	2402	1	2022	P	3.50	17944
3	2022	С	8.00	2227	12	2021	C	6.00	17908
11	2021	С	7.50	2216	2	2021	C	5.00	17452
5	2022	Р	3.00	2175	12	2022	C	7.00	17452
6	2022	Р	3.00	2175			P		
7	2022	Р	3.00	2175	3 3	2022 2022	C	2.50 4.00	16638 16441
8	2022	Р	3.00	2175					
9	2022	Р	3.00	2175	11	2021	С	5.00	16276
10	2022	Р	3.00	2175	3	2022	P	4.00	15672
2	2022	С	15.00	2086	2	2022	С	4.00	15201
12	2021	Ċ	8.00	2068	11	2021	С	4.50	15129
12	2021	P	5.00	1937	11	2021	С	5.50	14992
2	2022	C	6.00	1879	1	2022	С	4.00	14488
11	2021	Č	6.25	1867	11	2021	Р	2.50	14487
1	2022	C	10.00	1841	11	2021	С	3.75	14480
11	2022	C	9.00	1735	11	2021	Р	3.25	14426
	2021	C			12	2022	С	5.00	14372
1 2		P	7.00	1718	4	2022	Р	2.50	14060
	2022		2.50	1700	12	2021	Р	2.00	13886
2	2022	P	3.50	1673	1	2022	С	6.00	13792
12	2021	C	10.00	1670	11	2021	Р	4.50	13442
4	2022	Р	2.75	1600	11	2021	С	4.25	13299
2	2022	Р	4.00	1597	2	2022	С	6.00	13263
3	2022	С	15.00	1579	1	2022	Р	4.00	13245
2	2022	С	10.00	1479	3	2022	С	3.00	13127
12	2021	Р	4.50	1454	4	2022	С	5.00	13117
5	2022	Р	3.50	1425	12	2022	С	4.50	13115
11	2021	Р	5.35	1420	5	2022	Ċ	3.00	13110
2	2022	С	4.00	1401	12	2021	Ċ	5.00	12870
2	2022	Ċ	4.50	1400	6	2022	Č	3.00	12815
12	2021	P	5.50	1374	12	2022	Č	5.25	12738
11	2021	C	8.00	1366	7	2022		: CME, ICE	



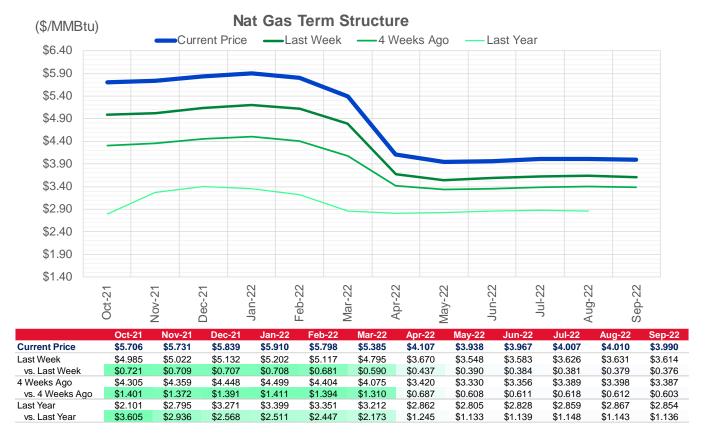
Nat Gas Futures Open Interest

CME, and ICE Combined

CME Harmy High Figures (40,000 MMPts)									
CIME Henry	CME Henry Hub Futures (10,000 MMBtu)			ICE Henry Hub Futures Contract Equivalent (10,000 MM					
	Current	Prior	Daily Change		Current	Prior	Daily Change		
NOV 21	527	3774	-3247	NOV 21	82561	85873	-3312		
DEC 21	264494	274587	-10093	DEC 21	91895	89714	2181		
JAN 22	99250	96930	2320	JAN 22	76324	76351	-27		
FEB 22	160553	159788	765	FEB 22	94603	94712	-110		
MAR 22	57649	57822	-173	MAR 22	70236	70226	9		
APR 22	127273	127206	67	APR 22	74173	73838	335		
MAY 22	121846	120405	1441	MAY 22	73148	72626	522		
JUN 22	122769	121032	1737	JUN 22	70514	70304	210		
JUL 22	39834	41090	-1256	JUL 22	54616	54237	378		
AUG 22	36484	37110	-626	AUG 22	56792	56538	254		
SEP 22	32031	32212	-181	SEP 22	55365	54942	424		
OCT 22	34907	35154	-247	OCT 22	56077	55613	465		
NOV 22	90763	90271	492	NOV 22	61739	61963	-224		
DEC 22	32740	32425	315	DEC 22	48383	48496	-114		
JAN 23	25954	26455	-501	JAN 23	51709	51800	-91		
FEB 23	24228	24153	75	FEB 23	38138	38185	-47		
MAR 23	10027	9905	122	MAR 23	31407	31197	211		
APR 23	13737	13388	349	APR 23	33297	32874	423		
MAY 23	13144	13222	-78	MAY 23	32368	31409	959		
JUN 23	7207	7153	54	JUN 23	31115	30828	287		
JUL 23	6132	6130	2	JUL 23	28960	28666	294		
AUG 23	4208	4201	7	AUG 23	29200	28867	334		
SEP 23	3350	3351	-1	SEP 23	28914	28601	312		
OCT 23	4513	4487	26	OCT 23	28266	27942	324		
NOV 23	5733	5688	45	NOV 23	31479	30276	1203		
DEC 23	2348	2232	116	DEC 23	29972	28673	1299		
JAN 24	2514	2515	-1	JAN 24	27797	27535	263		
FEB 24	1482	1479	3	FEB 24	15328	15167	162		
MAR 24	1082	1080	2	MAR 24	13004	12999	5		
APR 24	3362	3344	18	APR 24	17665	17487	178		







		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	4.96	4.46	-0.50
TETCO M3	\$/MMBtu	4.78	3.53	-1.25
FGT Zone 3	\$/MMBtu	4.69	4.93	0.24
Zone 6 NY	\$/MMBtu	4.69	3.42	-1.28
Chicago Citygate	\$/MMBtu	5.44	4.67	-0.77
Michcon	\$/MMBtu	5.31	4.60	-0.71
Columbia TCO Pool	\$/MMBtu	4.56	3.73	-0.84
Ventura	\$/MMBtu	5.36	5.36 4.57	
Rockies/Opal	\$/MMBtu	5.65	4.54	-1.10
El Paso Permian Basin	\$/MMBtu	5.18	4.52	-0.66
Socal Citygate	\$/MMBtu	7.33	5.71	-1.62
Malin	\$/MMBtu	5.40	5.18	-0.22
Houston Ship Channel	\$/MMBtu	5.57	4.85	-0.72
Henry Hub Cash	\$/MMBtu	5.93	4.59	-1.34
AECO Cash	C\$/GJ	2.67	3.08	0.41
Station2 Cash	C\$/GJ	1.26	5.43	4.17
Dawn Cash	C\$/GJ	5.20	4.53	-0.67

Source: CME, Bloomberg



						430/ 1		
					VS	s. 4 Weeks		
	Units	Current Price	VS.	Last Week		Ago	VS	s. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224		1.036		1.464		2.200
NatGas Oct21/Nov21	\$/MMBtu	0.039		0.002	▼	-0.009		-0.018
NatGas Oct21/Jan22	\$/MMBtu	0.217		-0.001		0.031	•	-0.079
NatGas Apr22/Oct22	\$/MMBtu	-0.105		-0.081	•	-0.092		-0.116
WTI Crude	\$/Bbl	75.29		4.730		6.790		36.000
Brent Crude	\$/Bbl	79.09		4.730		6.100		38.060
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	228.90		11.520		15.800		118.000
Propane, Mt. Bel	cents/Gallon	1.29		0.019		0.178		0.798
Ethane, Mt. Bel	cents/Gallon	0.39		0.012		0.055		0.192
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						









