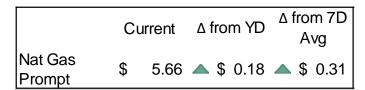


Market Report

30 September 2021



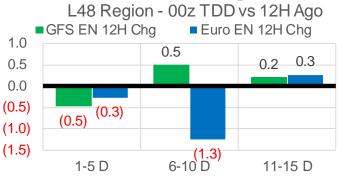
	Cı	urrent	Δ from YD	Δ fro	m 7D vg
WTI Prompt	\$	74.02	\$ (0.81)	~ \$	(0.4)

	_	Current	A from VD	∆ froi	om 7D		
	Current	ם וווטוו ב	Avg				
Brent	\$	78.06	\$ (0.58)	* \$	(0.3)		
Prompt	Ψ	70.00	Ψ (0.50)	ΨΨ	(0.5)		

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Short-term Weather Model Outlooks
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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

1.2

1.0

0.0

(0.9) 5 D

6-10 D

11-15 D

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	92.3	- 0.56	▼ -0.65

	Current	Δ from YD	Δ from 7D Avg
US ResComm	9.3	▲ 0.08	0.75

	Current	Δ from YD	Δ from 7D Avg		
Net LNG Exports	10.5	- 0.29	a 0.27		

	Current	Δ from YD	Δ from 7D Avg		
US Power Burns	31.8	▼ -0.19	1.83		

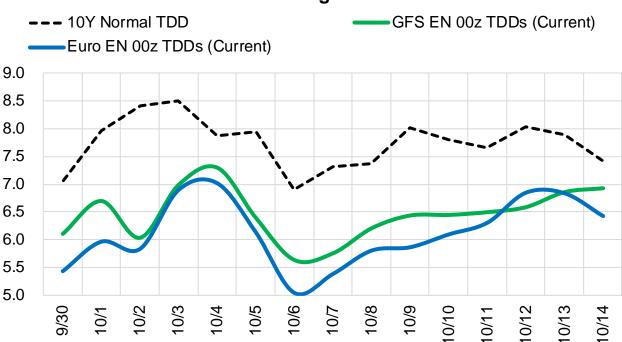
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	5.7	▼ -0.14	0.01

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.7	▼ -0.08	0.07

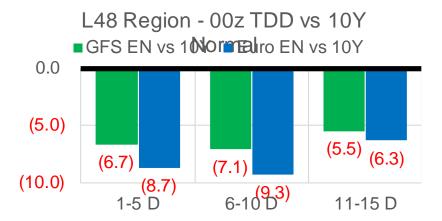


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Market Report

Lower 48 Component Models

Daily Balances

	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep	DoD	vs. 7D
Lower 48 Dry Production	92.4	93.0	93.2	93.4	93.2	92.8	92.3	▼-0.6	▼ -0.7
Canadian Imports	5.7	5.6	5.6	5.7	5.8	5.8	5.7	▼ -0.1	▲ 0.0
L48 Power	28.8	27.7	28.0	31.2	31.6	32.0	31.8	▼-0.2	1.9
L48 Residential & Commercial	8.9	8.8	7.5	7.4	8.0	9.2	9.3	0.1	1.0
L48 Industrial	20.3	20.2	20.0	19.9	19.8	20.0	20.0	0.1	0.0
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	5.1	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	1.9	1.9	1.8	2.0	2.0	2.1	2.1	▼ 0.0	0.1
L48 Regional Gas Consumption	65.0	63.7	62.5	65.6	66.6	68.3	68.3	▼ 0.0	3.0
Net LNG Delivered	10.63	10.80	10.48	9.75	9.52	10.75	10.46	▼ -0.3	0.1
Total Mexican Exports	6.6	6.3	6.3	6.5	6.9	6.7	6.7	▼ -0.1	0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	15.9	17.8	19.6	17.2	16.0	12.8	12.6		
Daily Model Elloi									

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	92.9	90.7	91.0	91.5	92.6	1.1	1.1
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	20.8	20.8	18.7	19.4	20.8	20.4	▼ -0.4	0.4
L48 Lease and Plant Fuel	5.1	5.1	5.0	5.0	5.0	5.1	0.1	0.1
L48 Pipeline Distribution	2.3	2.4	2.2	2.1	2.2	2.1	▼ 0.0	▼ -0.1
L48 Regional Gas Consumption	75.5	78.1	71.5	67.3	70.3	68.9	▼-1.4	▼ -2.8
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	93.0	93.4	92.5	92.1	91.9	▼-0.2	2.8
Canadian Imports	4.7	3.8	4.5	4.8	5.2	5.1	5.2	▲ 0.0	1.4
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	20.0	20.0	0.0	- 0.3
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	74.4	70.6	67.6	72.7	75.2	75.3	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	12.1		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	DoD	vs. 7D
NRC Nuclear Daily Output	86.6	86.5	86.5	85.6	85.7	84.6	84.5	-0.1	-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	18.3	18.4	18.4	19.3	19.2	20.2	20.4	0.1	1.4
NRC % Nuclear Cap Utilization	88.1	88.0	87.9	87.1	87.1	86.1	85.9	-0.1	-1.4

Wind Generation Daily Average - MWh (EIA)

	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	DoD	vs. 7D
CALI Wind	1454	1560	828	1682	3242	4569	4121	-448	1899
TEXAS Wind	5860	11025	10189	7123	11806	9937	10983	1045	1659
US Wind	33230	44897	45990	34443	53198	47478	46003	-1475	2797

Generation Daily Average - MWh (EIA)

	22-Sep	23-Sep	24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	DoD	vs. 7D
US Wind	33230	44897	45990	34443	53198	47478	46003	-1475	2797
US Solar	12552	11856	12104	13131	12258	12472	12011	-461	-385
US Petroleum	2491	2171	1711	1835	2017	3239	3244	6	1001
US Other	8894	8465	8340	8178	7506	8404	8683	279	385
US Coal	107259	96633	91769	90430	84363	94994	97855	2860	3613
US Nuke	89642	89850	89617	89000	88851	87958	87806	-152	-1347
US Hydro	26672	26711	27136	25005	23417	26559	24475	-2085	-1442
US Gas	172014	154958	143364	135866	129933	161274	170070	8796	20501

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear Generation Weekly Average - GWh (NRC)

	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 Impact
US Wind	29243	41912	35441	30659	42355	43173	819	-0.1
US Solar	12828	14536	13410	14316	14116	12087	-2029	0.4
US Petroleum	4466	5323	3135	2072	2470	2594	124	0.0
US Other	10104	10131	9766	8934	9277	9066	-211	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	25337	1197	-0.2
US Gas	212121	216025	205503	181094	182107	175128	-6978	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	88.9	88.6	88.7	90.1	91.5	87.2	87.2	-4.3	-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	16.0	16.3	16.2	14.8	13.4	17.7	17.7	4.3	1.4
NRC % Nuclear Cap Utilization	90.4	90.1	90.2	91.6	93.0	88.7	88.7	-4.4	-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	2280	1440	2881	2338	2442	2200	2200	-241	761
TEXAS Wind	8638	6982	9509	7217	9901	9382	9382	-520	2400
US Wind	34105	32003	36864	29217	35830	40686	40686	4856	8682

Generation Monthly Average - MWh (EIA)

Concration months, 7ttorago	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	34105	32003	36864	29217	35830	40686	40686	0.0	8682
US Solar	8153	9259	14577	14195	13846	13231	13231	0.0	3973
US Petroleum	4407	2959	4155	4233	4484	2437	2437	a 0	▼ -522
US Other	8166	8413	8205	9327	9929	8914	8914	a 0	501
US Coal	116829	94216	122034	137228	137655	109757	109757	a 0	15540
US Nuke	95478	91599	92180	92911	94062	90147	90147	a 0	▼ -1452
US Hydro	26771	26400	32566	29941	28532	25592	25592	a 0	▼ -808
US Gas	190307	178017	189395	207823	210824	173613	173613	0	▼ -4404
US Total	485860	443025	500268	524889	534996	464678	464678	a 0	21653



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	0.7	3.8	27
Midwest	5.2	-0.7	4.5	31
Mountain	3.8	-3.6	0.2	2
South Central	-1.0	5.3	4.3	30
Pacific	0.7	-0.5	0.3	2

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

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



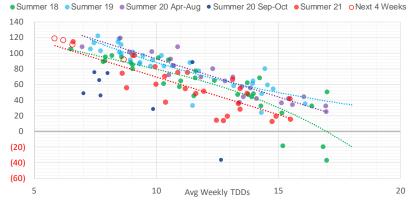


Weather Model Storage Projection

Next report and beyond

Week Ending	GWDDs	Week Storage Projection
24-Sep	8.7	92
01-Oct	5.8	119
08-Oct	6.2	117
15-Oct	6.6	111

Weather Storage Model - Next 4 Week Forecast



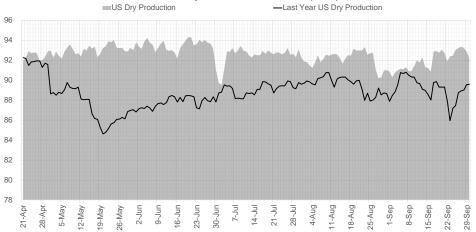
Go to larger image



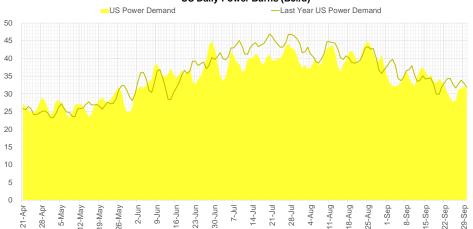


Supply - Demand Trends

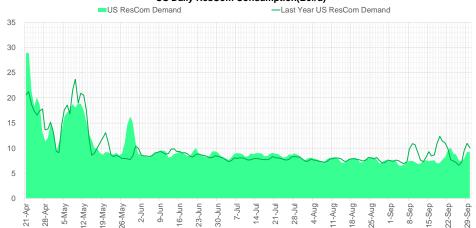
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



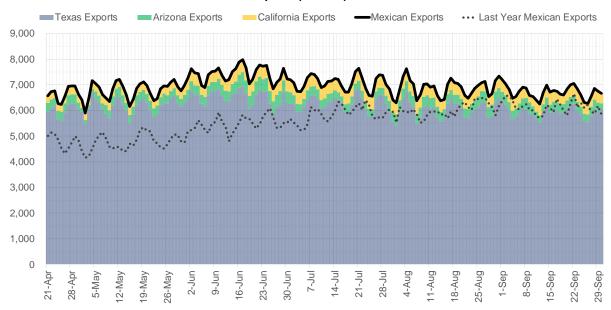
US Daily ResCom Consumption(Bcf/d)



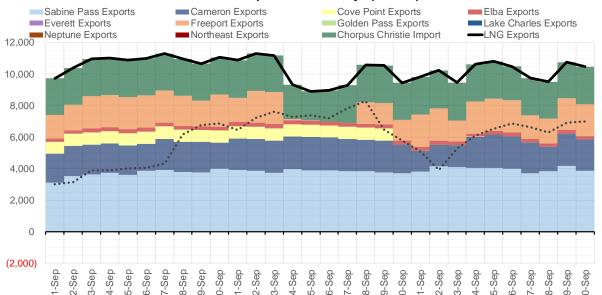
Source: Bloomberg



Mexican Exports (MMcf/d)







Source: Bloomberg



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

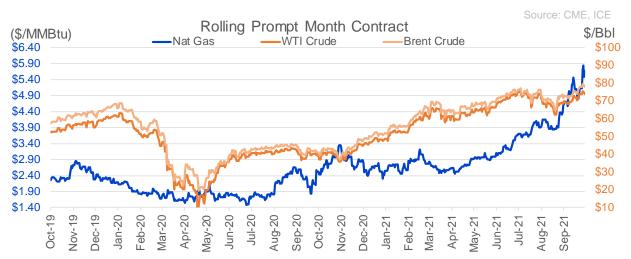
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH			
11	2021	Р	4.50	11956	12	12 2021	12 2021 P	12 2021 P 2.75
12	2021	Р	3.50	10198	12			
11	2021	P	5.00	7066	12	12 2021	12 2021 P	12 2021 P 3.00
12	2021	P	3.00	5952	11	11 2021	11 2021 P	
12	2021	Р	4.50	5108	12			
3	2022	Ċ	7.00	3571	3			
11	2022	Č	6.00	3332	3			
2	2021	C	8.00	3286	12			
2 11		P			11			
	2021	P	4.00	3266	11			
11	2021		5.25	3214	11			
12	2021	Р	5.00	3164				
11	2021	С	5.50	3134	11			
11	2021	Р	3.50	3133	12			
2	2022	С	7.00	2790	11			
11	2021	Р	5.50	2528	3			
3	2022	С	6.00	2367	3			
12	2021	C	10.00	2164	4	4 2022		
11	2021	Ċ	9.00	2030	11	11 2021	11 2021 C	11 2021 C 6.00
1	2022	P	4.00	2016	2	2 2022	2 2022 P	2 2022 P 3.50
1 12		C			1	1 2022	1 2022 C	1 2022 C 5.00
	2021		9.00	1999	1	1 2022	1 2022 P	1 2022 P 3.50
12	2021	P	4.00	1940	12			
1	2022	С	8.00	1880	2			
11	2021	С	8.50	1804	3			
3	2022	С	8.00	1785	3			
3	2022	Р	2.75	1770	11			
11	2021	Р	3.75	1516	12			
11	2021	С	6.50	1502	3			
3	2022	Р	2.50	1350				
11	2021	C	7.00	1343	11			
3	2022	Č	10.00	1325	2			
3 12	2022	C	8.50	1242	11			
		P			11			
3	2022		5.00	1225	1			
11	2021	С	5.00	1172	11			
1	2022	С	6.00	1137	11	11 2021	11 2021 C	11 2021 C 3.75
12	2021	С	8.00	1101	11	11 2021	11 2021 P	11 2021 P 3.25
11	2021	Р	4.25	1013	12			
11	2021	С	8.00	1011	4			
2	2022	С	9.40	1000	1			
2	2022	С	9.80	1000	12			
3	2023	P	2.75	1000	4			
4	2023	Р	2.75	1000	1			
11	2021	P	4.75	996				
1	2021	C	7.00	962	11			
					2			
1	2022	P	3.50	951	3			
12	2021	С	7.00	901	12			
3	2022	Р	5.25	875	5			
12	2021	С	6.50	868	12	12 2021	12 2021 C	12 2021 C 5.00
12	2021	С	5.50	844	6	6 2022		
12	2021	P	5.20	804	12			
		•					Source	Source: CMF ICF



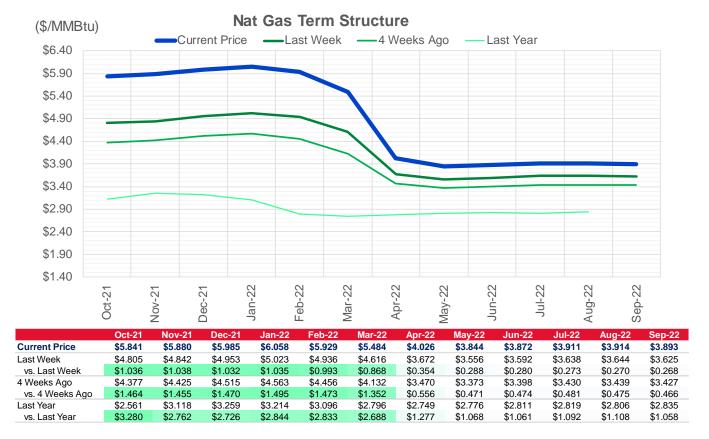
Nat Gas Futures Open Interest

CME, and ICE Combined

CIVIE, and IOE Combined									
CME 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	256974	527	256447	NOV 21	89413	82561	6852		
DEC 21	100613	264291	-163678	DEC 21	76371	91895	-15524		
JAN 22	161365	99054	62311	JAN 22	95377	76324	19054		
FEB 22	56924	160522	-103598	FEB 22	70284	94603	-24319		
MAR 22	127326	57649	69677	MAR 22	74097	70236	3861		
APR 22	122842	127270	-4428	APR 22	74017	74173	-156		
MAY 22	120949	121846	-897	MAY 22	70574	73148	-2573		
JUN 22	38750	122761	-84011	JUN 22	54633	70514	-15882		
JUL 22	36479	39834	-3355	JUL 22	56711	54616	2096		
AUG 22	31841	36484	-4643	AUG 22	55365	56792	-1428		
SEP 22	35013	32011	3002	SEP 22	56213	55365	847		
OCT 22	91481	34907	56574	OCT 22	62203	56077	6125		
NOV 22	32374	90763	-58389	NOV 22	48284	61739	-13455		
DEC 22	25863	32740	-6877	DEC 22	51591	48383	3209		
JAN 23	24495	25954	-1459	JAN 23	37922	51709	-13787		
FEB 23	9896	24228	-14332	FEB 23	31256	38138	-6882		
MAR 23	13466	10027	3439	MAR 23	33184	31407	1777		
APR 23	12709	13737	-1028	APR 23	32253	33297	-1045		
MAY 23	7327	13144	-5817	MAY 23	31339	32368	-1029		
JUN 23	6131	7207	-1076	JUN 23	29169	31115	-1946		
JUL 23	4214	6132	-1918	JUL 23	29415	28960	455		
AUG 23	3343	4208	-865	AUG 23	29170	29200	-30		
SEP 23	4523	3350	1173	SEP 23	28375	28914	-538		
OCT 23	5739	4513	1226	OCT 23	31432	28266	3166		
NOV 23	2346	5733	-3387	NOV 23	29969	31479	-1509		
DEC 23	2565	2348	217	DEC 23	27802	29972	-2169		
JAN 24	1482	2514	-1032	JAN 24	15323	27797	-12474		
FEB 24	1082	1482	-400	FEB 24	12866	15328	-2462		
MAR 24	3357	1082	2275	MAR 24	17739	13004	4735		
APR 24	3361	3362	-1	APR 24	11871	17665	-5794		







		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	4.96	4.43	-0.53
TETCO M3	\$/MMBtu	4.74	3.57	-1.18
FGT Zone 3	\$/MMBtu	4.69	4.86	0.17
Zone 6 NY	\$/MMBtu	4.69	3.40	-1.29
Chicago Citygate	\$/MMBtu	5.29	4.59	-0.70
Michcon	\$/MMBtu	5.16	4.49	-0.67
Columbia TCO Pool	\$/MMBtu	4.78	3.73	-1.05
Ventura	\$/MMBtu	5.36	4.49	-0.87
Rockies/Opal	\$/MMBtu	5.58	4.49	-1.09
El Paso Permian Basin	\$/MMBtu	5.01	4.47	-0.54
Socal Citygate	\$/MMBtu	7.12	5.47	-1.65
Malin	\$/MMBtu	5.40	5.15	-0.25
Houston Ship Channel	\$/MMBtu	5.58	4.74	-0.84
Henry Hub Cash	\$/MMBtu	5.64	4.50	-1.14
AECO Cash	C\$/GJ	2.66 3.02		0.36
Station2 Cash	C\$/GJ	2.32	5.33	3.01
Dawn Cash	C\$/GJ	5.17	4.43	-0.74

Source: CME, Bloomberg



					V	s. 4 Weeks		
	Units	Current Price	vs.	Last Week	V	Ago	VS	s. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224		1.036		1.226		2.200
NatGas Oct21/Nov21	\$/MMBtu	-0.364	•	-0.414	~	-0.412		-0.420
NatGas Oct21/Jan22	\$/MMBtu	-0.166		-0.403	~	-0.349		-0.461
NatGas Apr22/Oct22	\$/MMBtu	-0.064		-0.036	•	-0.032		-0.069
WTI Crude	\$/Bbl	74.83		2.600		6.240		34.610
Brent Crude	\$/Bbl	78.64		2.450		7.050		37.690
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	230.75		9.590		17.860		116.210
Propane, Mt. Bel	cents/Gallon	1.29		0.014		0.110		0.796
Ethane, Mt. Bel	cents/Gallon	0.39		0.010		0.034		0.190
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





