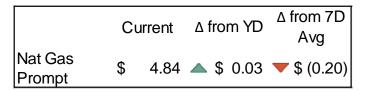


Market Report

23 September 2021



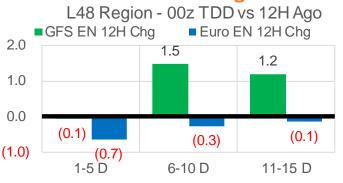
	С	urrent	Δ from YD	Δ from Av	
WTI Prompt	\$	71.90	\$ (0.33)	\$	0.2

	_	Current	A from VD	∆ from	17D
	Current		Avg		
Brent Prompt	\$	75.86	\$ (0.33)	\$	0.7
li ioiiibr					

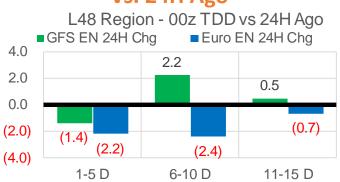
Page Menu

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	91.5	▼ -0.33	▼ -1.01

	Current	Δ from YD	Δ from 7D Avg
US ResComm	10.1	a 0.59	2.39

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	10.3	-0.08	0.40

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	30.6	▼ -1.75	▼ -3.14

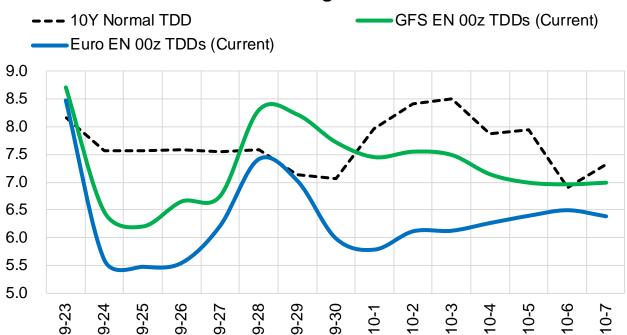
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	5.4	- 0.03	0.33

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.9	▼ -0.14	a 0.16

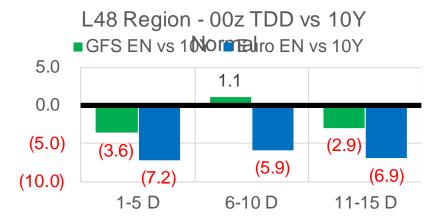


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Market Report

Lower 48 Component Models

Daily Balances

	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep	DoD	vs.7D
Lower 48 Dry Production	93.1	93.1	92.9	93.1	92.7	91.9	91.5	▼-0.3	▼-1.3
Canadian Imports	5.1	5.0	4.9	4.8	5.2	5.4	5.4	▼ 0.0	0.3
L48 Power	35.4	33.4	33.0	34.2	33.4	32.4	30.6	▼-1.8	▼-3.0
L48 Residential & Commercial	7.6	6.9	7.0	7.7	8.1	9.6	10.1	0.6	2.3
L48 Industrial	21.1	20.7	20.7	20.7	20.8	20.9	20.9	0.0	0.1
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	5.0	▼ 0.0	▼ -0.1
L48 Pipeline Distribution	2.2	2.1	2.0	2.1	2.1	2.1	2.1	▼ -0.1	▼ 0.0
L48 Regional Gas Consumption	71.4	68.3	67.9	69.8	69.6	70.0	68.8	▼-1.2	▼ -0.7
Net LNG Delivered	9.29	10.59	10.54	9.45	9.82	10.32	10.26	▼-0.1	a 0.3
Total Mexican Exports	6.7	6.6	6.5	6.8	7.0	7.1	6.9	▼-0.1	0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	10.8	12.6	12.9	11.9	11.5	9.9	10.9		

EIA Storage Week Balances

	13-Aug	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	WoW	vs. 4W
Lower 48 Dry Production	92.4	92.5	93.0	90.9	91.3	91.8	0.5	▼-0.1
Canadian Imports	5.2	5.0	5.3	5.0	4.8	5.2	0.3	▲ 0.1
L48 Power	41.0	39.7	41.9	38.1	33.7	35.0	1.3	▼-3.4
L48 Residential & Commercial	7.8	7.6	7.8	7.5	7.0	7.3	0.2	▼ -0.2
L48 Industrial	19.3	20.9	20.9	18.9	19.9	20.8	8.0	0.6
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.0	5.0	5.1	0.0	▼ 0.0
L48 Pipeline Distribution	2.4	2.3	2.4	2.2	2.1	2.2	0.1	▼ -0.1
L48 Regional Gas Consumption	75.6	75.6	78.2	71.7	67.8	70.2	2.4	▼-3.1
Net LNG Exports	9.9	10.9	10.6	10.5	11.0	10.2	▼ -0.7	▼ -0.5
Total Mexican Exports	6.8	6.8	6.8	7.0	6.7	6.6	▼ -0.1	▼-0.2
Implied Daily Storage Activity	5.2	4.2	2.8	6.7	10.6	9.9	-0.8	
EIA Reported Daily Storage Activity	6.6	4.1	2.9	7.4	11.9			
Daily Model Error	-1.3	0.1	-0.1	-0.7	-1.2			

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	91.8	▼ -0.4	2.7
Canadian Imports	4.7	3.8	4.5	4.8	5.2	5.1	5.0	▼ -0.1	1.2
L48 Power	36.3	34.4	26.8	35.9	39.6	40.2	34.0	▼-6.2	▼-0.4
L48 Residential & Commercial	8.2	8.8	12.8	8.9	8.6	7.7	7.5	▼ -0.2	▼ -1.3
L48 Industrial	22.5	20.3	20.8	20.6	19.6	20.1	20.3	0.2	▼ 0.0
L48 Lease and Plant Fuel	5.1	4.9	5.1	5.1	5.1	5.1	5.1	▼ 0.0	0.1
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	69.0	▼ -6.5	▼-1.7
Net LNG Exports	6.2	5.9	10.8	10.2	10.8	10.5	10.4	▼ -0.1	4.4
Total Mexican Exports	5.3	6.1	6.8	7.4	7.1	6.9	6.7	▼ -0.1	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	10.7		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	DoD	vs. 7D
NRC Nuclear Daily Output	86.1	86.1	86.0	84.8	85.4	85.8	86.2	0.3	0.5
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	18.8	18.8	18.9	20.1	19.5	19.0	18.7	-0.3	-0.5
NRC % Nuclear Cap Utilization	87.6	87.5	87.4	86.2	86.8	87.3	87.6	0.3	0.5

Wind Generation Daily Average - MWh (EIA)

	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	DoD	vs. 7D
CALI Wind	2601	2839	1645	2681	3843	1687	681	-1006	-1868
TEXAS Wind	4586	8035	9546	4741	6921	14461	15903	1442	7855
US Wind	30421	46466	37154	32631	47333	57480	49899	-7581	7985

Generation Daily Average - MWh (EIA)

	15-Sep	16-Sep	17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	DoD	vs. 7D
US Wind	30421	46466	37154	32631	47333	57480	49899	-7581	7985
US Solar	13256	12757	11260	12150	12798	12291	10605	-1686	-1814
US Petroleum	2644	2257	2897	2356	2542	3067	2618	-449	-9
US Other	9594	9021	9153	9164	9122	8907	8970	64	-190
US Coal	125026	115063	118603	115190	106176	109686	110019	333	-4939
US Nuke	88913	88175	88162	86756	87697	88563	88652	89	608
US Hydro	20657	24427	25702	23362	22499	25572	24682	-891	978
US Gas	194478	182786	191964	183511	168609	176790	174738	-2052	-8285

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear Generation Weekly Average - GWh	Nι	ear Generatio	n Weekly	/ Average -	GWh	(NRC)	
---	----	---------------	----------	-------------	------------	-------	--

	13-Aug	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	91.5	92.4	91.9	90.2	90.3	86.7	-3.6	0.6
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	13.3	12.5	12.9	14.7	14.6	18.2	3.6	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

Wind Generation Weekly Average - MWh (EIA)

	13-Aug	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	WoW	WoW Bcf/d Impact
CALI Wind	2507	3210	2052	2247	1236	2083	847	-0.2
TEXAS Wind	16319	7171	12600	7534	7327	9541	2214	-0.4
US Wind	49696	29243	41912	35441	30659	42355	11696	-2.1
					-4781.5 -13%			

Generation Weekly Average - MWh (EIA)

	13-Aug	20-Aug	27-Aug	3-Sep	10-Sep	17-Sep	WoW	WoW Bcf/d Impact
US Wind	49696	29243	41912	35441	30659	42355	11696	-2.1
US Solar	14383	12828	14536	13410	14316	14068	-248	0.0
US Petroleum	4712	4466	5323	3135	2072	2470	398	-0.1
US Other	10070	10104	10131	9766	8934	9216	282	-0.1
US Coal	140524	138055	136177	136318	116993	115066	-1927	0.3
US Nuke	94302	95157	94358	92365	93162	89425	-3736	0.7
US Hydro	27035	28988	30621	28179	26944	24138	-2806	0.5
US Gas	208281	212106	215990	205486	181094	181919	825	-0.1

See National Wind and Nuclear daily charts



Monthly Average Generation Data

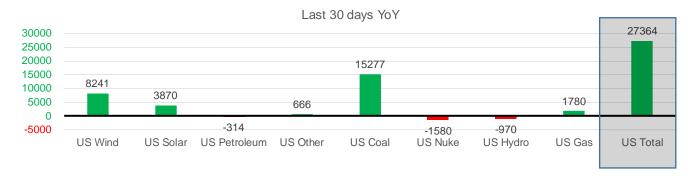
Nuclear Generation Monthly	Average -	GWh (Ni	RC)						
	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Jun-21	Jul-21	Aug-21	Sep-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
NRC Nuclear Daily Output	91.1	89.8	88.7	90.1	91.5	87.8	88.5	-3.7	-1.3
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0
NRC Nuclear Outage	13.8	15.1	16.2	14.8	13.4	17.0	16.4	3.7	1.3
NRC % Nuclear Cap Utilization	92.7	91.3	90.2	91.6	93.0	89.3	90.0	-3.7	-1.3

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	2187	1473	2881	2338	2442	1812	1856	-630	383
TEXAS Wind	7613	6620	9509	7217	9901	9755	9040	-146	2420
US Wind	30649	30281	36864	29217	35830	40154	38521	4324	8241

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	30649	30281	36864	29217	35830	40154	38521	▼-1632.6	8241
US Solar	8418	9549	14577	14195	13846	13318	13419	101.4	3870
US Petroleum	4381	3162	4155	4233	4484	2398	2847	450	▼ -314
US Other	8171	8661	8208	9327	9929	9057	9327	270	666
US Coal	115428	106346	122034	137228	137655	115385	121623	6239	15277
US Nuke	97785	92592	92180	92911	94062	90466	91012	546	▼ -1580
US Hydro	27925	27278	32566	29941	28532	25479	26308	829	▼ -970
US Gas	195604	188264	189395	207814	210803	180245	190044	6802	1780
US Total	490184	466099	500271	524889	534996	477047	493464	15237	27364



See National Wind and Nuclear daily charts



Regional S/D Models Storage Projection

Week Ending 17-Sep

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	9.6	1.1	10.7	75
East	2.6	1.1	3.7	26
Midwest	4.9	-0.4	4.5	32
Mountain	4.3	-3.5	8.0	5
South Central	-2.6	4.5	1.9	14
Pacific	0.3	-0.5	-0.2	-1

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

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



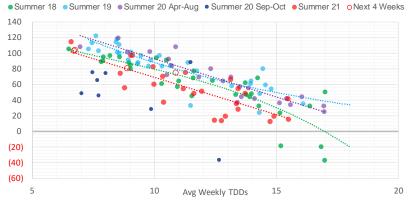


Weather Model Storage Projection

Next report and beyond

Week Ending	GWDDs	Week Storage Projection
17-Sep	10.9	75
24-Sep	8.9	81
01-Oct	6.7	103
08-Oct	6.8	104

Weather Storage Model - Next 4 Week Forecast



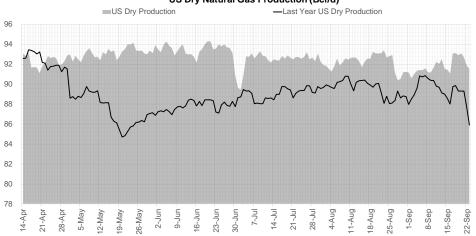
Go to larger image



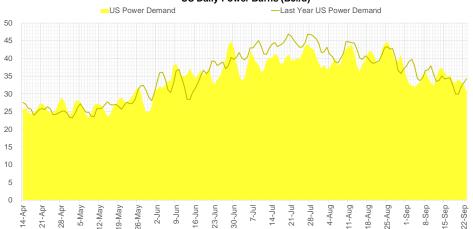


Supply - Demand Trends

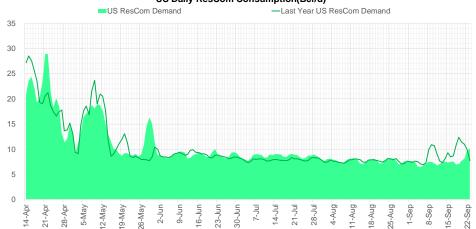
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



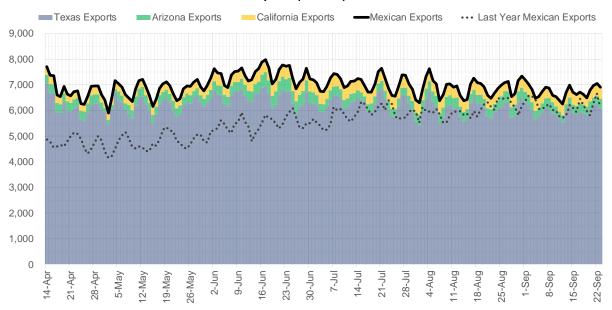
US Daily ResCom Consumption(Bcf/d)



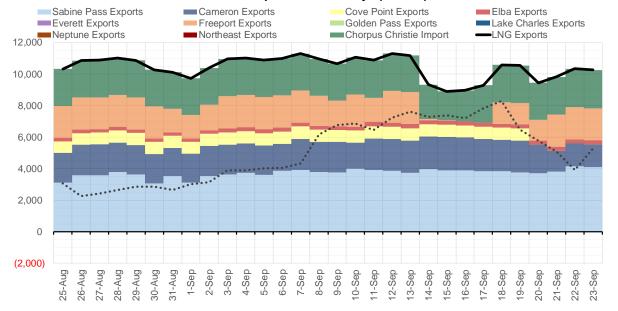
Source: Bloomberg



Mexican Exports (MMcf/d)







Source: Bloomberg



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

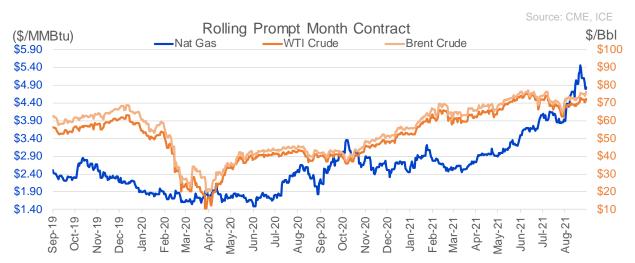
ONTRACT YEAR PUT/CALL STRIKE CUMULATIVE VOL 2021 P 3.75 7463 2021 P 4.00 6549 2021 P 4.75 5365 2021 C 5.00 5246
2021 P 4.00 6549 2021 P 4.75 5365
2021 P 4.00 6549 2021 P 4.75 5365
2021 P 4.75 5365
2021 C 5.00 5240
2021 P 3.50 4194
2021 P 4.25 4161
2021 P 4.50 3639
2021 C 7.00 3582
2022 C 5.00 3077
2022 P 3.00 3004
2022 C 5.00 3000
2021 P 4.30 2996
2021 C 4.95 2995
2021 C 6.50 2868
2022 P 4.00 2850 10
2021 P 4.50 2762 3
2021 C 5.45 2760 12
2021 P 4.75 2707
2021 C 5.25 2703
2022 P 3.50 2681
2021 P 3.25 2538 10 7
2021 P 4.75 2500
2021 C 6.00 2292 10 2021
2021 C 7.00 2282 10 2021
2021 P 3.00 2250 12 2021
2021 F 4.00 1925 10 2021 2021 C 5.50 1823 3 2023
3024 C 500 1724
2022 D 2.25 1701
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2022 C 6.00 1302 10 2021
2021 C 5.15 1284 10 2021
2021 P 3.20 1251 1 2022
2021 P 4.25 1233 1 2022
2021 P 3.70 1182 _{2 2022}
2022 P 5.00 1175 3 2022
2022 C 4.00 1175 10 2021
2022 P 4.00 1175 3 2022
2022
2022 C 6.00 1104 11 2024
2022 C 6.00 1104 11 2021 2021 P 4.60 1083 2 2022
2021 P 4.60 1083 2 2022
2021 P 4.60 1083 2 2022 2021 C 4.80 1032 11 2021
2021 P 4.60 1083 2 2022 2021 C 4.80 1032 11 2021 2021 C 5.20 1014 4 2022
2021 P 4.60 1083 2 2022 2021 C 4.80 1032 11 2021



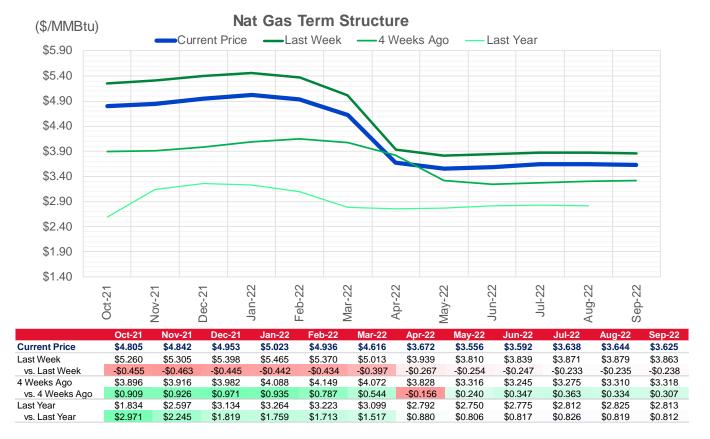
Nat Gas Futures Open Interest

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	41304	56796	-15492	OCT 21	89489	93817	-4328
NOV 21	275151	268191	6960	NOV 21	81142	78800	2342
DEC 21	91594	91302	292	DEC 21	76607	76749	-141
JAN 22	157533	155356	2177	JAN 22	95050	94493	557
FEB 22	57577	57505	72	FEB 22	70037	69667	370
MAR 22	122995	121605	1390	MAR 22	74881	74902	-21
APR 22	118816	118157	659	APR 22	72859	72887	-28
MAY 22	117435	116988	447	MAY 22	69997	69736	262
JUN 22	39055	37271	1784	JUN 22	53953	53693	260
JUL 22	36300	34573	1727	JUL 22	55961	55858	104
AUG 22	31994	31960	34	AUG 22	55176	55123	53
SEP 22	34452	34665	-213	SEP 22	55344	55455	-112
OCT 22	87241	87289	-48	OCT 22	62161	61928	232
NOV 22	32302	32194	108	NOV 22	47935	47965	-30
DEC 22	25714	25669	45	DEC 22	51197	51057	140
JAN 23	22756	22532	224	JAN 23	37461	37256	205
FEB 23	9250	9270	-20	FEB 23	30641	30454	187
MAR 23	11869	11456	413	MAR 23	32271	32066	205
APR 23	12003	11975	28	APR 23	30130	30014	116
MAY 23	6694	6930	-236	MAY 23	29973	29869	104
JUN 23	6125	6068	57	JUN 23	27809	27762	47
JUL 23	4206	4049	157	JUL 23	27965	27879	86
AUG 23	3191	3214	-23	AUG 23	27748	27714	35
SEP 23	4483	4472	11	SEP 23	27070	27023	47
OCT 23	5790	5789	1	OCT 23	29312	29233	79
NOV 23	2158	2165	-7	NOV 23	28063	28003	59
DEC 23	2142	2209	-67	DEC 23	27507	26746	761
JAN 24	1429	1369	60	JAN 24	14932	14971	-39
FEB 24	1089	891	198	FEB 24	12487	12502	-15
MAR 24	3192	3192	0	MAR 24	17421	16799	623







		Cash	Prompt	Cash to	
	Units	Settled	Settle	Prompt	
AGT Citygate	\$/MMBtu	4.40	5.04	0.64	
TETCO M3	\$/MMBtu	4.16	4.12	-0.04	
FGT Zone 3	\$/MMBtu	4.22	5.51	1.29	
Zone 6 NY	\$/MMBtu	4.22	3.96	-0.26	
Chicago Citygate	\$/MMBtu	4.64	5.26	0.62	
Michcon	\$/MMBtu	4.61	5.16	0.55	
Columbia TCO Pool	\$/MMBtu	4.04	4.25	0.21	
Ventura	\$/MMBtu	4.80	5.18	0.38	
Rockies/Opal	\$/MMBtu	5.54	5.18	-0.36	
El Paso Permian Basin	\$/MMBtu	4.52	5.13	0.61	
Socal Citygate	\$/MMBtu	6.40	6.38	-0.02	
Malin	\$/MMBtu	5.06	5.67	0.61	
Houston Ship Channel	\$/MMBtu	4.76	5.47	0.71	
Henry Hub Cash	\$/MMBtu	4.89	5.21	0.32	
AECO Cash	C\$/GJ	2.57	3.70	1.13	
Station2 Cash	C\$/GJ	2.42	5.86	3.44	
Dawn Cash	C\$/GJ	4.60	5.12	0.52	

Source: CME, Bloomberg



					VS	s. 4 Weeks		
	Units	Current Price	vs.	Last Week		Ago	VS	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	1.188		-0.655		0.880		1.158
NatGas Oct21/Nov21	\$/MMBtu	0.050		0.003	▼	-0.020		-0.004
NatGas Oct21/Jan22	\$/MMBtu	0.237		0.021	•	-0.004	•	-0.055
NatGas Apr22/Oct22	\$/MMBtu	-0.028		0.032	•	-0.042	•	-0.047
WTI Crude	\$/Bbl	72.23		-0.380		3.870		32.300
Brent Crude	\$/BbI	76.19		0.730		3.940		34.420
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	221.16		0.630		9.340		110.410
Propane, Mt. Bel	cents/Gallon	1.28		0.015		0.167		0.783
Ethane, Mt. Bel	cents/Gallon	0.38		-0.017		0.046		0.183
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						



