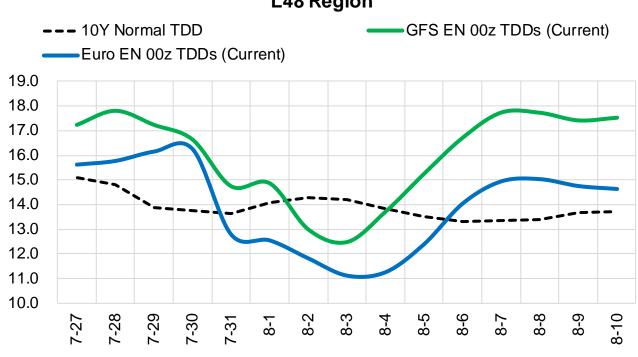


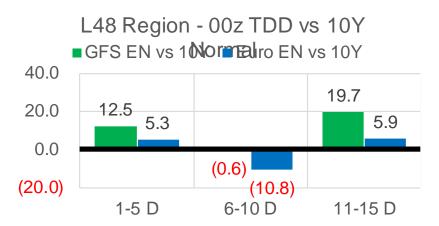


Short-term Weather Model Outlooks (00z)



L48 Region

Vs. 10Y Normal



Source: WSI, Bloomberg

Market Report

27 July 2021

Daily Balances

	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	27-Jul	DoD	vs.7D
Lower 48 Dry Production	91.3	92.4	92.4	92.1	92.3	92.2	90.7	-1.5	▼ -1.5
Canadian Imports	5.0	4.7	5.1	5.3	5.5	5.8	5.7	-0.1	0.5
L48 Power	39.5	39.6	40.1	40.0	41.4	43.0	43.0	▼ 0.0	2 .4
L48 Residential & Commercial	8.4	8.3	7.9	7.6	7.8	8.3	8.3	▼ 0.0	0.2
L48 Industrial	19.5	19.6	19.8	19.9	20.2	20.3	20.4	A 0.2	0.6
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	5.0	▼ -0.1	▼ -0.1
L48 Pipeline Distribution	2.3	2.3	2.3	2.3	2.3	2.4	2.4	▼ 0.0	a 0.1
L48 Regional Gas Consumption	74.7	74.8	75.2	74.9	76.9	79.1	79.2	0.0	3.2
Net LNG Delivered	9.79	10.86	10.60	10.88	10.82	10.68	10.74	0.1	0.1
Total Mexican Exports	6.9	7.4	7.1	6.6	6.5	6.9	7.2	0.3	0.3
Implied Daily Storage Activity EIA Reported Daily Storage Activity	4.9	3.9	4.6	4.9	3.6	1.2	-0.7		

Lower 48 Component Models

Daily Model Error

EIA Storage Week Balances

	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	WoW	vs. 4W
Lower 48 Dry Production	92.3	93.2	92.2	91.8	92.3	92.2	-0.1	▼-0.2
Canadian Imports	5.1	4.7	5.2	5.1	5.2	4.9	▼ -0.3	▼-0.1
L48 Power	34.8	34.4	39.7	37.1	38.7	39.7	1 .0	2 .2
L48 Residential & Commercial	8.3	8.4	8.3	7.9	8.2	8.3	0 .0	▲ 0.0
L48 Industrial	22.4	20.0	21.5	19.7	19.7	19.4	v -0.4	- 0.9
L48 Lease and Plant Fuel	5.1	5.2	5.1	5.1	5.1	5.1	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.1	2.1	2.4	2.1	2.2	2.3	▲ 0.0	a 0.1
L48 Regional Gas Consumption	72.7	70.1	77.0	72.0	74.0	74.7	0.7	1.5
Net LNG Exports	9.6	10.3	11.2	11.0	10.8	10.5	▼ -0.3	-0.3
Total Mexican Exports	7.5	7.6	7.2	7.1	7.1	7.0	▼ -0.1	▼-0.2
Implied Daily Storage Activity	7.6	9.9	2.0	6.8	5.6	4.9	-0.7	
EIA Reported Daily Storage Activity	7.9	10.9	2.3	7.9	7.0			
Daily Model Error	-0.2	-0.9	-0.2	-1.1	-1.4			

Monthly Balances

-	2Yr Ago	LY					MTD		
	Jul-19	Jul-20	Mar-21	Apr-21	May-21	Jun-21	Jul-21	MoM	vs. LY
Lower 48 Dry Production	91.9	89.1	91.5	92.3	92.2	92.8	92.0	— -0.8	2.9
Canadian Imports	5.0	4.4	4.8	4.7	4.5	4.9	5.2	0.3	0.8
L48 Power	40.8	43.7	24.3	25.0	27.1	35.3	39.1	3 .7	▼-4.6
L48 Residential & Commercial	8.0	7.9	29.3	19.7	13.4	8.4	8.1	T -0.3	a 0.2
L48 Industrial	21.6	20.4	19.3	21.2	19.2	21.0	19.7	T -1.3	▼ -0.7
L48 Lease and Plant Fuel	5.0	4.9	5.0	5.1	5.1	5.1	5.1	▼ 0.0	0.2
L48 Pipeline Distribution	2.3	2.4	2.5	2.3	2.1	2.2	2.2	0 .1	V -0.2
L48 Regional Gas Consumption	77.8	79.4	80.6	73.3	66.7	72.0	74.2	2.2	T -5.1
Net LNG Exports	6.0	3.3	11.1	11.5	10.8	10.2	10.8	0.6	7.5
Total Mexican Exports	5.3	5.9	6.5	6.7	6.8	7.4	7.0	▼ -0.4	1.2
Implied Daily Storage Activity	7.8	5.0	-2.0	5.5	12.4	8.0	5.0		
EIA Reported Daily Storage Activity Daily Model Error									

Source: Bloomberg, analytix.ai



27 July 2021

Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

ENERGY

	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	DoD	vs. 7D
NRC Nuclear Daily Output	91.8	90.3	88.2	88.1	88.1	88.1	90.2	2.0	1.1
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	13.1	14.6	16.7	16.8	16.8	16.8	14.7	-2.0	-1.1
NRC % Nuclear Cap Utilization	93.3	91.8	89.7	89.6	89.6	89.6	91.7	2.1	1.1

Wind Generation Daily Average - MWh (EIA)

	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	DoD	vs.7D
CALI Wind	2627	2516	2234	2083	2283	2561	2561	0	177
TEXAS Wind	4154	3557	8911	15356	12202	8893	8893	0	47
US Wind	21754	26199	36855	44311	35200	25745	25745	0	-5933

Generation Daily Average - MWh (EIA)

	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul	25-Jul	26-Jul	DoD	vs. 7D
US Wind	21754	26199	36855	44311	35200	25745	25745	0	-5933
US Solar	13229	13910	13963	13713	13420	13653	13653	0	6
US Petroleum	4887	3851	3859	4240	4458	4230	4230	0	-24
US Other	9037	8963	8944	8939	8889	8805	8805	0	-125
US Coal	140677	140467	132769	136904	136218	141491	141491	0	3404
US Nuke	93664	92831	88833	90641	91058	92840	92840	0	1196
US Hydro	31422	31536	29420	30221	27820	26804	26804	0	-2733
US Gas	216969	212350	198600	203302	202101	207232	207232	0	473

See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

Storage Week Average Generation Data

Nuclear Generation Weekly Average - GWh (NRC)

	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	86.7	89.9	89.1	89.5	90.7	90.7	0.1	0.0
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	18.1	15.0	15.7	15.4	14.2	14.2	-0.1	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

Wind Generation Weekly Average - MWh (EIA)

	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	WoW	WoW Bcf/d Impact
CALI Wind	2494	2568	2588	2604	3004	2064	-940	0.2
TEXAS Wind	7683	13415	8326	3739	10817	7162	-3655	0.6
US Wind	34128	49248	27216	25698	36364	26445	-9919	1.7

Generation Weekly Average - MWh (EIA)

								WoW
	18-Jun	25-Jun	2-Jul	9-Jul	16-Jul	23-Jul	WoW	Bcf/d
								Impact
US Wind	34128	49248	27216	25698	36364	26445	-9919	1.7
US Solar	15395	14070	14060	14162	14489	13855	-634	0.1
US Petroleum	3894	3331	5142	4035	4282	3892	-391	0.1
US Other	7784	8246	8886	9159	9554	9234	-321	0.1
US Coal	124096	118233	136480	131305	131524	137036	5512	-0.9
US Nuke	90270	93426	92257	92359	93735	93171	-563	0.1
US Hydro	31628	32185	33024	30127	30415	30030	-385	0.1
US Gas	193858	180182	208732	194610	199730	209066	9336	

See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai



Monthly Average Generation Data

Nuclear Generation Monthly Average - GWh (NRC)

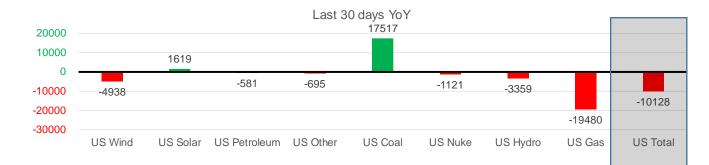
	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Apr-21	May-21	Jun-21	Jul-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
NRC Nuclear Daily Output	94.8	91.6	75.9	81.8	88.7	90.0	89.9	1.3	-1.6
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0
NRC Nuclear Outage	10.1	13.3	29.0	23.1	16.2	14.9	14.9	-1.3	1.6
NRC % Nuclear Cap Utilization	96.4	93.1	77.1	83.2	90.2	91.5	91.4	1.3	-1.7

Wind Generation Monthly Average - MWh (Genscape)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Apr-21	May-21	Jun-21	Jul-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	2722	2549	3113	3402	2913	2506	2477	-407	-73
TEXAS Wind	8246	10279	12104	12259	9675	7807	7442	-1868	-2838
US Wind	28485	33225	50706	46081	37299	29589	28287	-7710	-4938

Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Apr-21	May-21	Jun-21	Jul-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	28485	33225	50706	46081	37299	29589	28287	▼-1301.8	V -4938
US Solar	9621	12384	13194	14486	14564	14098	14003	- 94.9	🔺 1619
US Petroleum	5127	4948	2652	3012	4149	4118	4367	250	💌 -581
US Other	8841	9927	7154	7438	8157	9238	9232	-6	T -695
US Coal	131838	118431	75976	86422	121348	134778	135948	1170	A 17517
US Nuke	101571	93936	79237	85517	92175	92859	92815	- 44	💌 -1121
US Hydro	34299	33621	28444	30666	32574	29799	30261	462	▼ -3359
US Gas	210559	224610	133124	139477	188818	202119	205131	435	▼-19480
US Total	531907	530805	390883	413557	499432	517291	520677	A 2172	▼-10128



See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

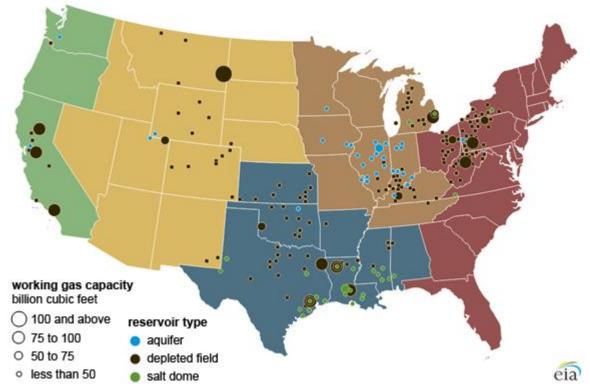


Regional S/D Models Storage Projection

Week Ending	23-Jul			
			Daily	
			Average	Weekly
		Daily	Storage	Adjusted
	Daily Raw	Adjustment	Activity	Storage
	Storage	Factor	(Adjusted) *	Activity
L48	4.5	1.3	5.8	41
East	1.7	1.3	3.1	22
Midwest	3.3	-0.4	2.9	21
Mountain	4.3	-4.1	0.3	2
South Central	-4.7	4.5	-0.3	-2
Pacific	-0.1	-0.1	-0.2	-1

*Adjustment Factor is calcuated based on historical regional deltas

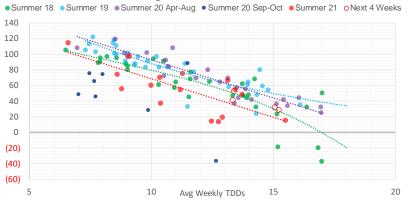
U.S. underground natural gas storage facilities by type (July 2015)



Weather Model Storage Projection

Next report and beyond		
Week Ending	GWDDs	Week Storage Projection
23-Jul	13.4	41
30-Jul	15.2	28
06-Aug	13.4	52
13-Aug	15.1	32

Weather Storage Model - Next 4 Week Forecast



Go to larger image



0 15-Feb

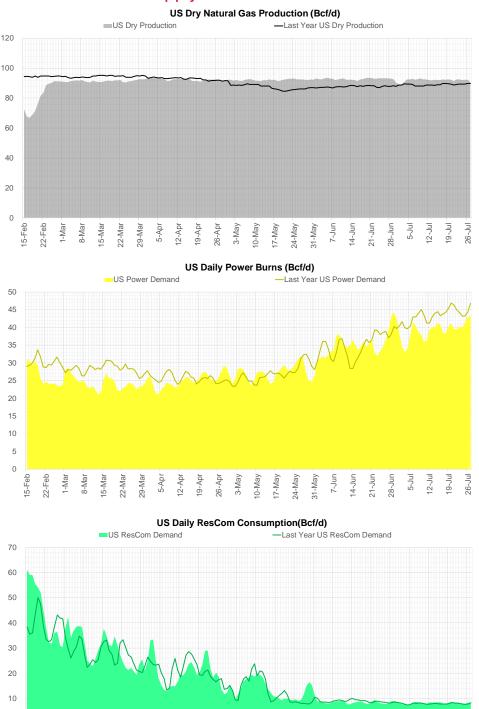
1-Mar

8-Mar

22-Mar 29-Mar

15-Mar

Supply – Demand Trends



Source: Bloomberg

12-Jul 19-Jul

5-Jul

26-Jul

14-Jun 21-Jun 28-Jun

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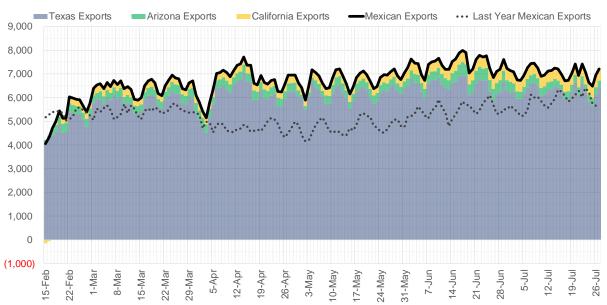
26-Apr

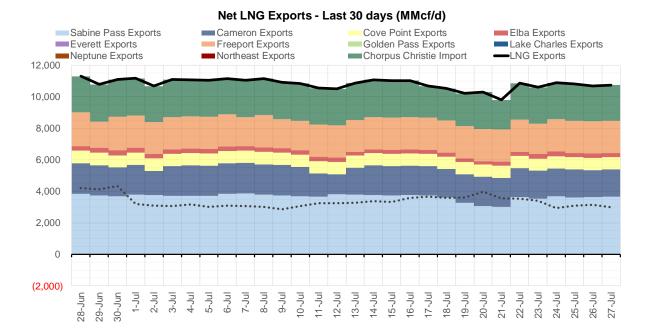
3-Mav

10-May 17-May 24-May 31-May 7-Jun

12-Apr 19-Apr

5-Apr





Mexican Exports (MMcf/d)

Source: Bloomberg

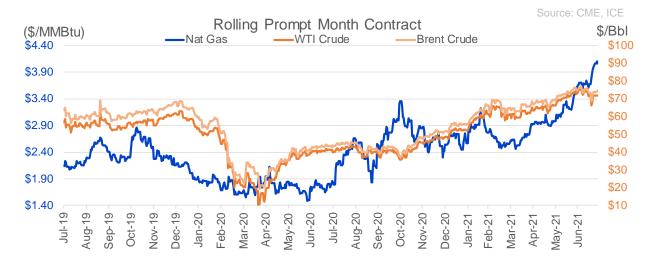


Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE	CONTRACT	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE OI
MONTH	YEAR			VOL	MONTH	YEAR			
12	2021	Р	2.75	20000	10	2021	С	4.00	42525
12	2021	Р	3.00	10603	8	2021	С	3.50	39970
12	2021	Р	2.50	10000	8	2021	С	4.00	37873
9	2021	P	3.50	9896	10	2021	С	5.00	34760
8	2021	С	4.25	7023	10	2021	С	3.50	33255
9	2021	P	3.75	6869	9	2021	С	4.00	32104
10	2021	Р	3.50	5274	10	2021	Р	2.50	30103
9	2021	С	4.25	4992	8	2021	Р	2.50	29350
8	2021	Р	4.00	4914	10	2021	С	3.25	28230
8	2021	С	4.10	3676	8	2021	Р	3.00	27649
9	2021	Р	3.00	3404	10	2021	Р	2.75	27245
8	2021	С	4.00	3213	10	2021	С	4.50	26800
9	2021	C	4.50	3197	10	2021	Р	2.00	26294
8	2021	C	4.15	2670	8	2021	Р	3.25	24786
9	2021	C	5.00	2562	8	2021	С	3.75	24472
9	2021	P	3.40	2543	12	2021	Р	2.75	24346
8	2021	C	4.20	2140	9	2021	Р	2.50	23377
8	2021	P	4.05	2122	10	2021	Р	3.00	23323
9	2021	P	4.00	2029	9	2021	С	3.50	23097
8	2021	C	4.35	1977	8	2021	С	3.25	23030
8	2021	P	4.35 3.95	1709	8	2021	Р	3.50	22675
8	2021	C	3.95 4.50	1705	11	2021	С	4.00	22648
8 9		P			8	2021	С	4.25	22380
	2021		3.25	1660	12	2021	С	4.00	21653
9	2021	C P	4.00	1358	12	2021	Р	2.50	21309
9	2021		3.70	1357	9	2021	Р	2.00	20427
9	2021	Р	3.60	1240	10	2021	Р	3.50	19944
8	2021	Р	3.90	1156	10	2021	Р	2.25	19800
9	2021	P	3.90	1136	8	2021	Р	2.00	19668
9	2021	С	5.50	1099	4	2022	С	3.00	19610
10	2021	Р	3.40	1094	8	2021	Р	2.90	19603
10	2021	Р	3.75	1086	8	2021	Р	2.25	19478
12	2021	С	4.50	1050	9	2021	С	3.25	18990
9	2021	С	4.75	1040	10	2021	C	3.00	18501
11	2021	С	4.25	1026	8	2021	Р	2.75	18483
2	2022	С	11.00	1017	11	2021	Р	3.00	18415
9	2021	С	4.10	1013	9	2021	Р	3.00	18307
10	2021	С	5.00	1010	8	2021	Р	3.40	17479
1	2022	Р	3.00	1001	8	2021	С	4.50	17095
3	2022	Р	3.00	1001	9	2021	С	4.50	17019
1	2022	С	11.00	1000	10	2021	С	3.75	16872
2	2022	Р	3.00	1000	12	2021	Р	3.00	16443
3	2022	С	11.00	1000	3	2022	С	5.00	16333
12	2021	С	5.00	965	10	2021	c	6.00	16104
8	2021	Р	4.10	950	9	2021	P	2.75	15821
12	2021	С	6.00	882	8	2021	C	3.00	15763
9	2021	С	5.25	877	9	2021	č	5.00	15501
10	2021	c	4.50	826	11	2021	č	3.75	15339
9	2021	c	4.05	775	8	2021	č	3.30	15266
10	2021	P	4.00	737	1	2022			
-	-			-	-		Source	: CME, ICE	

Nat Gas Futures Open Interest CME, and ICE Combined

Civil, and ICE Combined							
CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MI							
	Current	Prior	Daily Change	_	Current	Prior	Daily Change
AUG 21	17135	24581	-7446	AUG 21	89734	89057	678
SEP 21	341638	337507	4131	SEP 21	92699	92135	564
OCT 21	163977	163312	665	OCT 21	103899	103805	95
NOV 21	120569	114638	5931	NOV 21	73103	70762	2341
DEC 21	73085	72351	734	DEC 21	72667	72615	53
JAN 22	120263	120163	100	JAN 22	78788	78280	508
FEB 22	50437	49251	1186	FEB 22	68611	68192	419
MAR 22	98251	98743	-492	MAR 22	67968	67897	71
APR 22	102437	101803	634	APR 22	65567	65509	58
MAY 22	87483	87003	480	MAY 22	66840	66667	173
JUN 22	28975	28647	328	JUN 22	55324	55099	226
JUL 22	23081	22900	181	JUL 22	54667	54364	303
AUG 22	24324	23986	338	AUG 22	56108	55789	318
SEP 22	24641	24502	139	SEP 22	55723	55415	308
OCT 22	60509	60813	-304	OCT 22	59014	58721	293
NOV 22	25366	25114	252	NOV 22	48265	48025	240
DEC 22	21850	21419	431	DEC 22	50461	50205	256
JAN 23	15827	15782	45	JAN 23	30394	30176	218
FEB 23	5664	5504	160	FEB 23	26121	26002	120
MAR 23	7475	7196	279	MAR 23	28348	28200	148
APR 23	9418	9379	39	APR 23	22653	22544	109
MAY 23	5723	5750	-27	MAY 23	23688	23568	120
JUN 23	2375	2353	22	JUN 23	22019	21873	146
JUL 23	2569	2569	0	JUL 23	22283	22164	119
AUG 23	1770	1770	0	AUG 23	22161	22059	102
SEP 23	2014	2014	0	SEP 23	21666	21551	116
OCT 23	2651	2647	4	OCT 23	23156	23039	118
NOV 23	1113	1113	0	NOV 23	22305	22295	10
DEC 23	1742	1742	0	DEC 23	21749	21739	10
JAN 24	993	993	0	JAN 24	12901	12821	80



vs. Last Year

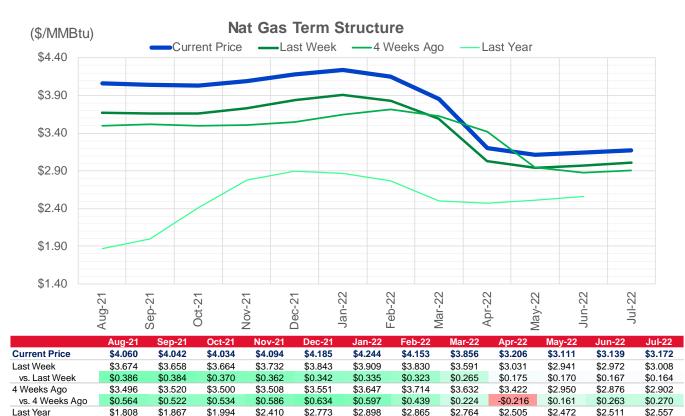
\$2.252

\$2.175

Market Report

\$2.040

\$1.684



		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	3.85	3.42	-0.44
TETCO M3	\$/MMBtu	3.88	3.36	-0.52
FGT Zone 3	\$/MMBtu	3.97	3.85	-0.12
Zone 6 NY	\$/MMBtu	3.97	3.32	-0.65
Chicago Citygate	\$/MMBtu	3.95	3.62	-0.33
Michcon	\$/MMBtu	3.88	3.59	-0.29
Columbia TCO Pool	\$/MMBtu	3.47	3.13	-0.34
Ventura	\$/MMBtu	3.62	3.55	-0.07
Rockies/Opal	\$/MMBtu	3.90	3.50	-0.40
El Paso Permian Basin	\$/MMBtu	3.87	3.58	-0.29
Socal Citygate	\$/MMBtu	6.53	5.46	-1.07
Malin	\$/MMBtu	4.05	4.04	-0.01
Houston Ship Channel	\$/MMBtu	4.08	3.73	-0.35
Henry Hub Cash	\$/MMBtu	4.09	3.53	-0.56
AECO Cash	C\$/GJ	3.40	2.92	-0.48
Station2 Cash	C\$/GJ	3.36	3.88	0.52
Dawn Cash	C\$/GJ	3.94	3.59	-0.35

\$1.412

\$1.346

\$1.288

Source: CME, Bloomberg

\$0.701

\$0.639

\$1.092

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\$0.615

\$0.628



						. 4 Weeks		
	Units	Current Price	vs.	Last Week		Ago	vs	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	0.459		0.325		0.500		0.446
NatGas Oct21/Nov21	\$/MMBtu	0.061		0.000		0.020		0.010
NatGas Oct21/Jan22	\$/MMBtu	0.217		-0.007		0.015	▼	-0.069
NatGas Apr22/Oct22	\$/MMBtu	-0.026		-0.015		-0.032	▼	-0.098
WTI Crude	\$/Bbl	71.91		5.490		-1.000		30.310
Brent Crude	\$/Bbl	74.50		5.880		-0.180		31.090
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	215.10		16.580		3.280		89.690
Propane, Mt. Bel	cents/Gallon	1.09		0.017		0.124		0.597
Ethane, Mt. Bel	cents/Gallon	0.31		0.005		0.037		0.098
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

Market Report

ENERGY

27 July 2021

