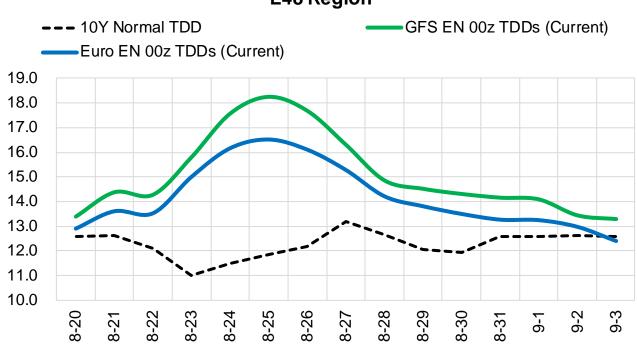


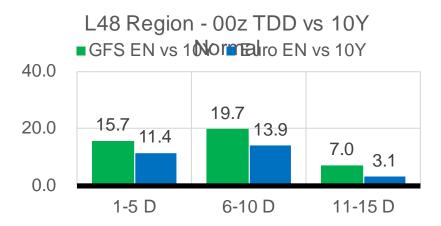


Short-term Weather Model Outlooks (00z)



L48 Region

Vs. 10Y Normal



Source: WSI, Bloomberg

Market Report

Daily Balances

	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	19-Aug	20-Aug	DoD	vs.7D
Lower 48 Dry Production	92.3	91.7	92.2	92.4	92.4	93.0	91.6	T -1.4	▼ -0.7
Canadian Imports	4.8	4.6	4.9	5.0	5.3	5.2	4.8	▼ -0.4	▼ -0.1
L48 Power	37.8	36.3	38.4	39.1	41.2	42.2	40.3	- 2.0	A 1.1
L48 Residential & Commercial	7.1	7.1	7.5	7.7	7.9	8.1	7.7	▼-0.4	a 0.2
L48 Industrial	20.0	20.3	20.4	20.3	20.2	20.0	19.6	▼-0.4	V -0.6
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	5.1	▼ -0.1	▼ 0.0
L48 Pipeline Distribution	2.2	2.1	2.2	2.3	2.4	2.4	2.3	▼-0.1	a 0.1
L48 Regional Gas Consumption	72.2	70.8	73.6	74.4	76.8	78.0	74.9	▼ -3.0	0.6
Net LNG Delivered	10.53	11.06	11.00	11.01	10.72	10.57	10.79	0.2	▼ 0.0
Total Mexican Exports	6.4	6.2	7.0	7.4	7.2	7.2	6.9	-0.3	▲ 0.0
Implied Daily Storage Activity EIA Reported Daily Storage Activity	7.9	8.3	5.5	4.5	3.0	2.5	3.8		

Lower 48 Component Models

Daily Model Error

EIA Storage Week Balances

	16-Jul	23-Jul	30-Jul	6-Aug	13-Aug	20-Aug	WoW	vs. 4W
Lower 48 Dry Production	92.5	92.6	92.6	92.0	92.5	92.4	T -0.1	▼ 0.0
Canadian Imports	5.2	4.9	5.5	5.1	5.2	5.0	▼ -0.2	▼-0.1
L48 Power	38.7	39.7	42.1	38.4	41.1	39.6	T -1.6	▼-0.8
L48 Residential & Commercial	8.4	8.4	8.3	7.8	7.7	7.6	V -0.1	V -0.5
L48 Industrial	19.6	19.7	20.8	20.3	19.9	20.2	0.2	▼ 0.0
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.1	5.1	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.2	2.3	2.4	2.2	2.4	2.3	T -0.1	▼ 0.0
L48 Regional Gas Consumption	74.1	75.2	78.7	73.8	76.2	74.7	T -1.5	▼-1.3
Net LNG Exports	10.8	10.5	10.8	10.6	9.9	10.9	A 0.9	0.4
Total Mexican Exports	7.1	7.1	7.0	6.9	6.8	6.9	▲ 0.0	▼-0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity	5.6 7.0	4.6 5.1	1.7 1.9	5.7 7.0	4.6 6.6	5.0	0.4	· · · · · · · · · · · · · · · · · · ·
Daily Model Error	-1.4	-0.5	-0.2	-1.3	-2.0			

Monthly Balances

	2Yr Ago	LY					MTD		
	Aug-18	Aug-18	Apr-21	May-21	Jun-21	Jul-21	Aug-21	MoM	vs. LY
Lower 48 Dry Production	85.0	85.0	92.3	92.7	93.0	92.3	92.2	▼ -0.1	7.2
Canadian Imports	5.0	5.0	4.6	4.5	4.8	5.2	5.1	-0.1	▲ 0.0
L48 Power	38.1	38.1	24.9	26.6	35.3	39.4	39.7	a 0.3	1.6
L48 Residential & Commercial	7.8	7.8	19.5	13.2	8.8	8.3	7.7	T -0.6	T -0.1
L48 Industrial	21.6	21.6	21.2	20.3	20.8	19.9	20.1	A 0.1	T -1.5
L48 Lease and Plant Fuel	4.7	4.7	5.1	5.1	5.1	5.1	5.1	▼ 0.0	0 .4
L48 Pipeline Distribution	2.2	2.2	2.3	2.1	2.2	2.3	2.3	0.0	a 0.1
L48 Regional Gas Consumption	74.4	74.4	73.0	67.2	72.3	75.0	74.9	▼ -0.2	0.5
Net LNG Exports	3.3	3.3	11.5	10.8	10.2	10.8	10.4	▼ -0.4	▲ 7.1
Total Mexican Exports	4.9	4.9	6.7	6.8	7.4	7.0	6.9	▼ -0.1	2.0
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	7.4	7.4	5.7	12.4	8.0	4.6	5.1		

Source: Bloomberg, analytix.ai

Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

ENERGY

	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	DoD	vs. 7D
NRC Nuclear Daily Output	92.7	92.7	92.3	92.3	92.3	92.6	92.8	0.2	0.4
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	12.2	12.2	12.6	12.6	12.6	12.3	12.0	-0.2	-0.4
NRC % Nuclear Cap Utilization	94.3	94.3	93.8	93.9	93.9	94.2	94.4	0.2	0.4

Wind Generation Daily Average - MWh (EIA)

	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	DoD	vs.7D
CALI Wind	3629	4191	2822	2623	3042	3553	3565	12	255
TEXAS Wind	14046	7789	4346	2507	5411	5691	9772	4081	3140
US Wind	48561	26370	22914	27068	31339	31829	31824	-6	477

Generation Daily Average - MWh (EIA)

	12-Aug	13-Aug	14-Aug	15-Aug	16-Aug	17-Aug	18-Aug	DoD	vs.7D
US Wind	48561	26370	22914	27068	31339	31829	31824	-6	477
US Solar	13885	13427	11447	12031	11810	12041	13099	1058	659
US Petroleum	5516	5347	3817	3268	3873	4700	4905	205	485
US Other	10196	10342	9383	8955	9168	10040	10608	568	928
US Coal	150898	152667	140750	128425	133603	136336	136612	276	-3834
US Nuke	95067	95166	94844	94943	95017	95330	95548	218	487
US Hydro	30033	31082	27408	24827	27865	28238	31305	3067	3063
US Gas	228739	230902	206041	184034	208222	210007	218846	8839	7522

See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

Storage Week Average Generation Data

Nuclear Generation Weekly Average - GWh (NRC)

	16-Jul	23-Jul	30-Jul	6-Aug	13-Aug	20-Aug	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	90.7	90.7	89.3	90.6	91.5	92.4	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	14.2	14.2	15.6	14.3	13.3	12.5	-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)

	16-Jul	23-Jul	30-Jul	6-Aug	13-Aug	20-Aug	WoW	WoW Bcf/d Impact
CALI Wind	3004	2064	1905	2237	2507	3337	830	-0.1
TEXAS Wind	10817	7162	7913	5180	16319	6470	-9849	1.7
US Wind	36364	26446	29735	22376	49585	29024	-20561	3.5

Generation Weekly Average - MWh (EIA)

								WoW
	16-Jul	23-Jul	30-Jul	6-Aug	13-Aug	20-Aug	WoW	Bcf/d
								Impact
US Wind	36364	26446	29735	22376	49585	29024	-20561	3.5
US Solar	14486	14023	13977	14130	14318	12422	-1896	0.3
US Petroleum	4282	3892	4729	4074	4709	4402	-307	0.1
US Other	9555	9336	9281	9058	10029	9872	-157	0.0
US Coal	131514	137623	146407	134740	140522	137858	-2665	0.4
US Nuke	93735	93488	92226	93269	94283	95199	916	-0.2
US Hydro	30422	30196	29209	27738	27022	28861	1839	-0.3
US Gas	199737	210463	224359	204525	208128	210986	2857	

See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai



Monthly Average Generation Data

Nuclear Generation Monthly Average - GWh (NRC)

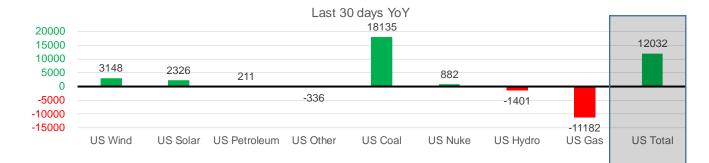
	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	May-21	Jun-21	Jul-21	Aug-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
NRC Nuclear Daily Output	94.2	90.6	81.8	88.7	90.0	91.6	90.9	1.7	0.2
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0
NRC Nuclear Outage	10.7	14.2	23.1	16.2	14.9	13.2	14.0	-1.7	-0.2
NRC % Nuclear Cap Utilization	95.8	92.2	83.2	90.2	91.5	93.2	92.4	1.7	0.2

Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	May-21	Jun-21	Jul-21	Aug-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	2199	2346	3402	2913	2338	2830	2523	491	177
TEXAS Wind	7960	8570	12259	9675	7217	9689	8995	2472	425
US Wind	25365	29642	46083	37299	29105	34338	32790	5233	3148

Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	May-21	Jun-21	Jul-21	Aug-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	25365	29642	46083	37299	29105	34338	32790	▼-1547.9	3148
US Solar	9163	11393	14489	14564	14195	13535	13719	4 184.3	2326
US Petroleum	5195	4261	3012	4150	4233	4443	4472	2 9	211
US Other	9265	9919	7439	8161	9324	9758	9583	T -175	-336
US Coal	128029	121536	86419	121357	137228	137239	139671	4 2432	A 18135
US Nuke	100479	92833	85517	92175	92897	94488	93715	-773	882
US Hydro	33037	29790	30681	32578	29939	28021	28389	368	T -1401
US Gas	220662	223260	139478	188815	207785	207670	212078	517	▼-11182
US Total	532404	522351	413549	499469	524889	529420	534384	2581	A 12032



See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

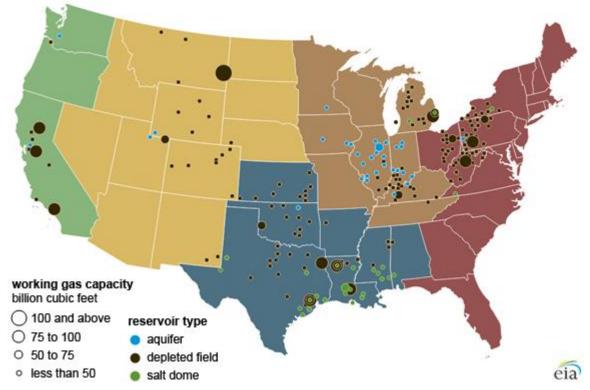


Regional S/D Models Storage Projection

Week Ending	20-Aug			
			Daily	
			Average	Weekly
		Daily	Storage	Adjusted
	Daily Raw	Adjustment	Activity	Storage
	Storage	Factor	(Adjusted) *	Activity
L48	4.6	1.7	6.3	44
East	2.0	1.2	3.1	22
Midwest	3.8	-0.2	3.6	25
Mountain	4.0	-4.0	0.0	0
South Central	-5.4	4.9	-0.5	-4
Pacific	0.4	-0.2	0.2	1

*Adjustment Factor is calcuated based on historical regional deltas

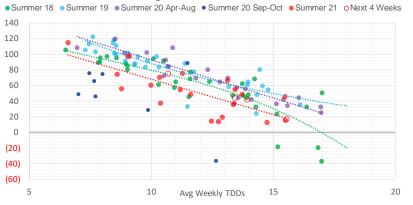
U.S. underground natural gas storage facilities by type (July 2015)



Weather Model Storage Projection

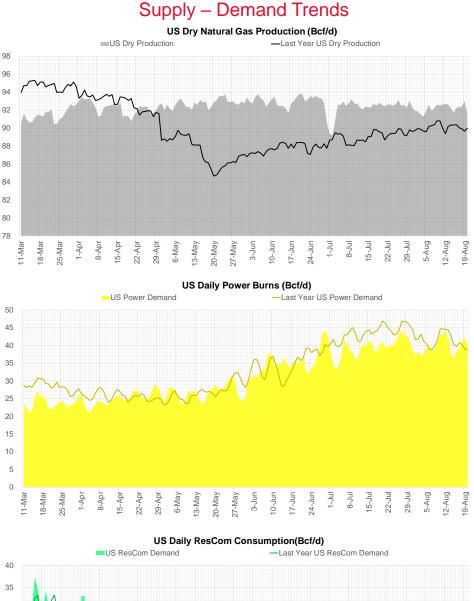
Next report and beyond		
Week Ending	GWDDs	Week Storage Projection
20-Aug	13.4	44
27-Aug	15.6	17
03-Sep	13.9	42
10-Sep	10.7	75

Weather Storage Model - Next 4 Week Forecast



Go to larger image

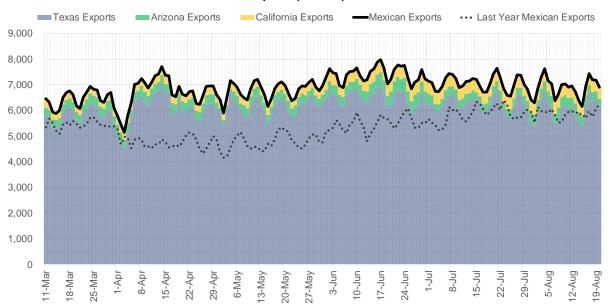




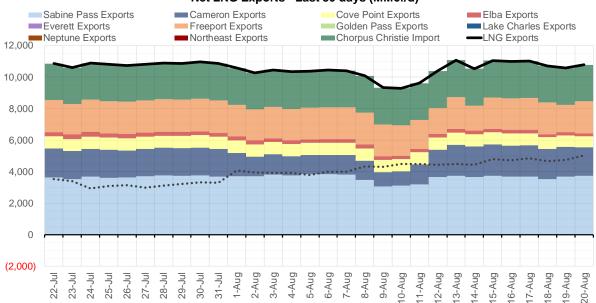
30 25 20 15 10 5 0 10-Jun 17-Jun 24-Jun 5-Aug 12-Aug 19-Aug 11-Mar 18-Mar 25-Mar 8-Apr 15-Apr 22-Apr 29-Apr I3-May 20-May 27-May 3-Jun 1-Jul 8-Jul 15-Jul 22-Jul 1-Apr 6-May 29-Jul

Source: Bloomberg





Mexican Exports (MMcf/d)



Net LNG Exports - Last 30 days (MMcf/d)

Source: Bloomberg

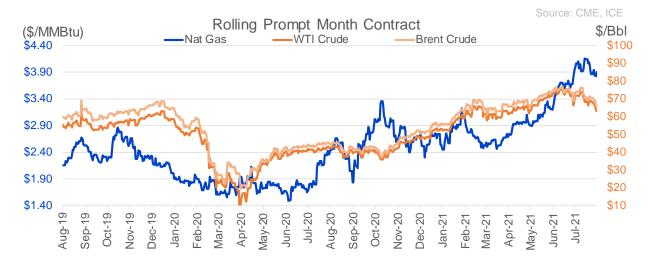


Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

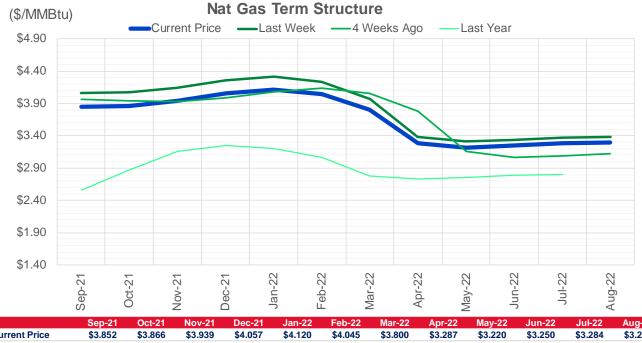
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
10	2021	С	4.50	16448	10	2021	С	5.00	50656
10	2021	С	5.00	14619	12	2021	Р	2.75	41830
9	2021	С	3.90	11622	10	2021	С	4.50	40865
9	2021	С	4.00	10672	10	2021	С	4.00	39712
9	2021	Р	3.70	9825	10	2021	Р	3.50	38722
10	2021	Р	3.50	7602	12	2021	Р	2.50	38528
10	2021	С	4.00	7268	10	2021	С	3.50	33004
10	2021	Р	3.70	6702	9	2021	С	4.00	31887
9	2021	С	4.20	5038	10	2021	Р	3.00	31712
9	2021	Р	3.50	4057	10	2021	Р	2.50	29844
9	2021	Р	3.75	3623	9	2021	С	4.25	29719
9	2021	С	3.80	3254	10	2021	Р	2.00	28650
10	2021	C	4.25	3218	10	2021	С	3.25	28195
4	2022	Р	3.00	3200	10	2021	Р	2.75	27144
9	2021	С	4.15	3115	10	2021	С	4.25	26821
10	2021	Р	3.25	3017	9	2021	С	5.00	26586
4	2022	Р	2.50	2850	10	2021	С	6.00	25479
9	2021	Р	3.60	2742	12	2021	Р	3.00	24697
9	2021	Р	3.80	2658	9	2021	Р	2.50	23385
9	2021	С	4.25	2600	11	2021	Р	3.00	23071
11	2021	Р	3.50	2358	11	2021	С	4.00	22723
9	2021	Р	3.65	2271	9	2021	С	3.50	22611
11	2021	С	4.50	2215	9	2021	Р	3.00	22432
9	2021	C	4.10	2155	9	2021	Р	3.50	22129
10	2021	C	6.00	2103	12	2021	С	4.00	22092
9	2021	С	3.95	1818	9	2021	Р	2.00	20427
11	2021	С	4.00	1772	9	2021	С	4.75	20402
12	2021	P	3.50	1758	9	2021	P P	3.25	20089
11	2021	С	5.25	1583	10	2021		2.25	19900
9	2021	P	3.40	1530	4	2022	С	3.00	19810
3	2022	Р	2.75	1500	9	2021	С	3.25	18994
3	2022	P	3.25	1500	10	2021	С	3.00	18502
2	2022	C	4.50	1469	9 11	2021 2021	C C	4.50 5.00	17972 17831
12	2021	P	4.00	1360	10	2021	P	3.25	16846
10	2021	С	5.25	1335	10	2021	F C	3.25	16812
11	2021	C	6.00	1334	1	2021	c	5.00	16285
9	2021	C	4.30	1331	9	2022	P	4.00	16268
2	2022	P	3.25	1300	9	2021	P	2.75	15816
3	2022	C	4.00	1245	3	2021	C	5.00	15473
1	2022	C	3.50	1225	2	2022	c	5.00	15419
1	2022	C	4.00	1225	3	2022	P	2.50	15394
3	2022	C	3.50	1225	11	2022	P	3.50	15098
12	2021	c	7.00	1224	9	2021	P	3.50	14835
2	2022	c	4.00	1169	9 11	2021	C	3.75	14835
2	2022	P	4.00	1166	3	2021	c	3.00	14448
1	2023	C	3.50	1150		2022	P	2.50	14399
2	2023	c	3.50	1150	3	2021	C	4.00	14399
3	2023	c	3.50	1150	3	2022	c	4.00 8.00	14178
9	2020	č	4.05	1147	1	2022	č		
č		2					Source	e: CME, ICE	

Nat Gas Futures Open Interest CME, and ICE Combined

Civil, and ICE Combined								
CME Henry H	Hub Futures (1)			ICE Henry	Hub Futures Con			
	Current	Prior	Daily Change		Current	Prior	Daily Change	
SEP 21	70913	83921	-13008	SEP 21	84957	81887	3070	
OCT 21	228219	223441	4778	OCT 21	107367	107602	-235	
NOV 21	194629	194059	570	NOV 21	70040	69167	872	
DEC 21	84433	84447	-14	DEC 21	75711	75658	53	
JAN 22	140182	137876	2306	JAN 22	79210	78899	310	
FEB 22	55204	55220	-16	FEB 22	68410	69347	-937	
MAR 22	104066	104606	-540	MAR 22	73015	73887	-872	
APR 22	111455	111533	-78	APR 22	68363	69873	-1511	
MAY 22	100925	100453	472	MAY 22	66978	68284	-1306	
JUN 22	31464	31226	238	JUN 22	52004	53158	-1154	
JUL 22	26885	26695	190	JUL 22	53457	54179	-722	
AUG 22	25242	25457	-215	AUG 22	53197	54407	-1210	
SEP 22	26851	26754	97	SEP 22	53164	54114	-950	
OCT 22	68885	67073	1812	OCT 22	60688	61703	-1016	
NOV 22	28022	27853	169	NOV 22	46898	48058	-1160	
DEC 22	24935	24618	317	DEC 22	50344	51511	-1168	
JAN 23	18398	18436	-38	JAN 23	33430	33329	102	
FEB 23	6436	6496	-60	FEB 23	28196	28099	97	
MAR 23	9027	9011	16	MAR 23	30016	29924	92	
APR 23	11015	10785	230	APR 23	24921	24722	198	
MAY 23	6366	6459	-93	MAY 23	25962	25760	203	
JUN 23	5128	5101	27	JUN 23	24171	23975	196	
JUL 23	3904	3904	0	JUL 23	24189	23991	198	
AUG 23	3162	3157	5	AUG 23	24061	23863	198	
SEP 23	4096	3887	209	SEP 23	23505	23309	196	
OCT 23	4710	4913	-203	OCT 23	25286	25084	202	
NOV 23	1722	1722	0	NOV 23	25564	25382	182	
DEC 23	1766	1741	25	DEC 23	23874	23694	180	
JAN 24	989	985	4	JAN 24	13239	13236	4	
FEB 24	879	872	7	FEB 24	11242	11322	-80	



Market Report



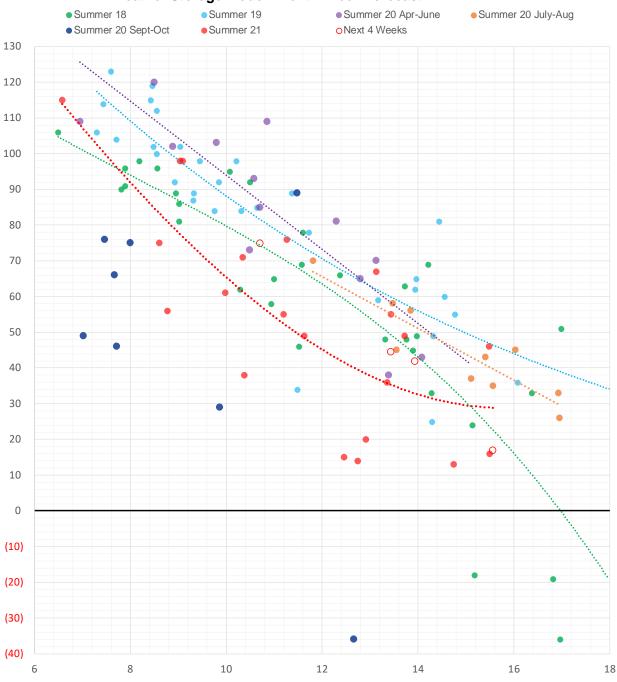
	Sep-21	Oct-21	NOV-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
Current Price	\$3.852	\$3.866	\$3.939	\$4.057	\$4.120	\$4.045	\$3.800	\$3.287	\$3.220	\$3.250	\$3.284	\$3.292
Last Week	\$4.059	\$4.071	\$4.143	\$4.256	\$4.319	\$4.237	\$3.967	\$3.385	\$3.309	\$3.338	\$3.371	\$3.378
vs. Last Week	-\$0.207	-\$0.205	-\$0.204	-\$0.199	-\$0.199	-\$0.192	-\$0.167	-\$0.098	-\$0.089	-\$0.088	-\$0.087	-\$0.086
4 Weeks Ago	\$3.959	\$3.938	\$3.935	\$3.990	\$4.084	\$4.141	\$4.053	\$3.781	\$3.157	\$3.064	\$3.092	\$3.126
vs. 4 Weeks Ago	-\$0.107	-\$0.072	\$0.004	\$0.067	\$0.036	-\$0.096	-\$0.253	-\$0.494	\$0.063	\$0.186	\$0.192	\$0.166
Last Year	\$2.426	\$2.563	\$2.868	\$3.152	\$3.255	\$3.203	\$3.065	\$2.777	\$2.733	\$2.759	\$2.791	\$2.799
vs. Last Year	\$1.426	\$1.303	\$1.071	\$0.905	\$0.865	\$0.842	\$0.735	\$0.510	\$0.487	\$0.491	\$0.493	\$0.493

		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	4.07	3.26	-0.81
TETCO M3	\$/MMBtu	3.68	2.99	-0.69
FGT Zone 3	\$/MMBtu	3.71	3.99	0.28
Zone 6 NY	\$/MMBtu	3.71	2.94	-0.77
Chicago Citygate	\$/MMBtu	3.65	3.77	0.12
Michcon	\$/MMBtu	3.63	3.74	0.11
Columbia TCO Pool	\$/MMBtu	3.55	3.13	-0.42
Ventura	\$/MMBtu	3.67	3.70	0.03
Rockies/Opal	\$/MMBtu	3.60	3.63	0.04
El Paso Permian Basin	\$/MMBtu	3.44	3.67	0.23
Socal Citygate	\$/MMBtu	4.18	4.59	0.41
Malin	\$/MMBtu	3.94	3.90	-0.04
Houston Ship Channel	\$/MMBtu	3.76	3.87	0.11
Henry Hub Cash	\$/MMBtu	3.83	3.68	-0.15
AECO Cash	C\$/GJ	2.13	2.62	0.49
Station2 Cash	C\$/GJ	1.96	3.78	1.82
Dawn Cash	C\$/GJ	3.66	3.73	0.07

Source: CME, Bloomberg

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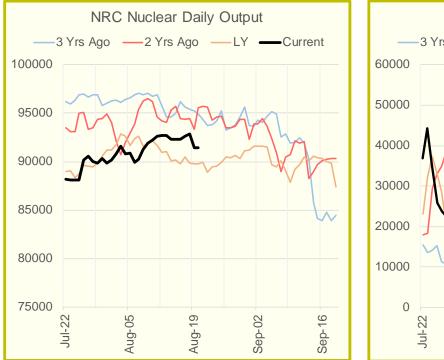
				vs. 4 Weeks	
	Units	Current Price	vs. Last Week	c Ago	vs. Last Year
NatGas Jul21/Oct21	\$/MMBtu	0.227	- 0.104	-0.132	a 0.207
NatGas Oct21/Nov21	\$/MMBtu	0.065	-0.008	a 0.008	0.015
NatGas Oct21/Jan22	\$/MMBtu	0.237	-0.023	a 0.032	-0.037
NatGas Apr22/Oct22	\$/MMBtu	0.017	a 0.010	a 0.036	-0.022
WTI Crude	\$/Bbl	63.69	-5.400	-8.220	2 1.110
Brent Crude	\$/Bbl	66.45	-4.860	-7.340	a 21.550
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	0.000	a 0.000	0.000
Heating Oil	cents/Gallon	196.90	- 13.490	- 16.360	A 72.230
Propane, Mt. Bel	cents/Gallon	1.11	-0.010	a 0.021	a 0.607
Ethane, Mt. Bel	cents/Gallon	0.34	-0.002	a 0.023	a 0.092
Coal, PRB	\$/MTon	12.30	0.000	a 0.000	0.000
Coal, PRB	\$/MMBtu	0.70			
Coal, ILB	\$/MTon	31.05	0.000	a 0.000	0.000
Coal, ILB	\$/MMBtu	1.32			



Weather Storage Model - Next 4 Week Forecast

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