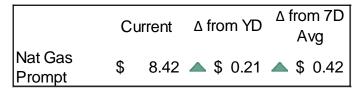


11 August 2022



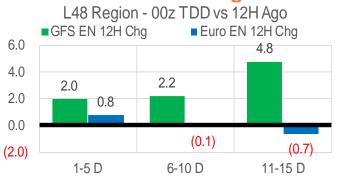
	Current		Δfr	OI	m YD	Δ from 7D Avg		
WTI Prompt	\$ 9	93.16	<u></u>	\$	1.23	\$	3.3	

	_	urront	Λ fr	·^ ·	~ VD	∆ fror	n 7D
	C	urrent	ΔΠ	UI	טו וו	A۱	vg
Brent Prompt	\$	98.50		\$	1.10	\$	2.9

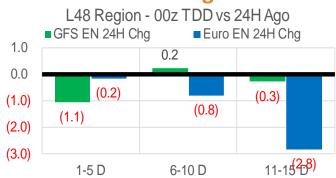
Page Menu

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	95.9	▼ -1.53	▼ -2.27

	Current	Δ from YD	Δ from 7D Avg
US ResComm	8.4	- 0.09	- 0.07

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	11.4	a 0.11	a 0.61

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	42.3	▼ -3.37	▼ -3.69

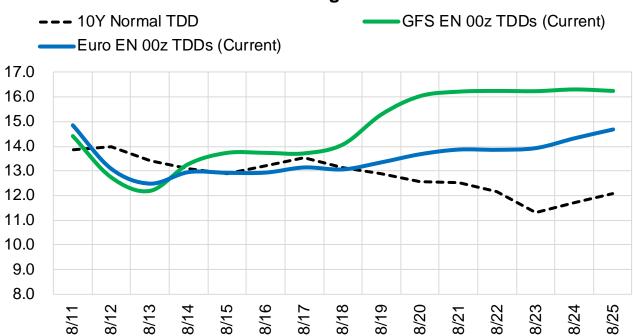
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	5.1	a 0.12	▼ -0.37

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	5.8	▼ -0.81	▼ -0.98

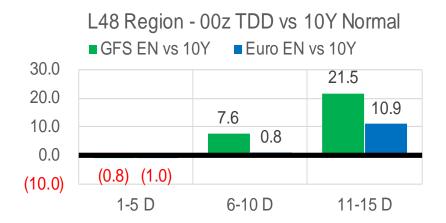


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	10-Aug	11-Aug	DoD	vs. 7D
Lower 48 Dry Production	98.8	98.4	98.5	98.4	97.7	97.5	95.9	▼-1.5	▼ -2.2
Canadian Imports	5.7	5.4	5.6	5.4	5.4	4.9	5.1	▲ 0.1	▼ -0.3
L48 Power	46.1	43.9	44.6	47.3	47.5	45.6	42.3	▼-3.4	▼ -3.6
L48 Residential & Commercial	8.4	8.1	8.2	8.6	8.7	8.5	8.4	▼ -0.1	▼ 0.0
L48 Industrial	20.5	20.6	20.4	20.7	20.9	20.8	21.0	0.2	0.4
L48 Lease and Plant Fuel	5.4	5.4	5.4	5.4	5.3	5.3	5.2	▼ -0.1	▼ -0.2
L48 Pipeline Distribution	2.9	2.8	2.8	3.0	3.0	2.9	2.7	▼ -0.2	▼ -0.2
L48 Regional Gas Consumption	83.3	80.7	81.3	85.0	85.3	83.1	79.5	▼ -3.5	▼ -3.6
Net LNG Delivered	10.46	10.52	10.30	10.85	11.19	11.30	11.41	▲ 0.1	0.6
Total Mexican Exports	7.2	6.7	6.7	6.9	6.3	6.6	5.8	▼ -0.8	▼ -0.9
Implied Daily Storage Activity EIA Reported Daily Storage Activity	3.6	5.9	5.8	1.0	0.2	1.5	4.3		
Daily Model Error									

EIA Storage Week Balances

	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug	WoW	vs. 4W
Lower 48 Dry Production	97.1	97.0	96.3	96.9	97.2	98.5	1.2	1.6
Canadian Imports	5.7	5.6	6.0	6.2	5.9	5.7	▼ -0.3	▼-0.3
L48 Power	39.7	41.0	42.9	45.5	44.7	44.0	▼-0.7	0.5
L48 Residential & Commercial	8.5	8.4	8.4	8.7	8.6	8.3	▼-0.3	▼-0.2
L48 Industrial	20.3	20.1	20.5	21.0	19.4	20.2	8.0	▼ 0.0
L48 Lease and Plant Fuel	5.3	5.3	5.2	5.3	5.3	5.4	0.1	0.1
L48 Pipeline Distribution	2.6	2.6	2.7	2.9	2.8	2.8	▼ -0.1	0.0
L48 Regional Gas Consumption	76.3	77.4	79.7	83.3	80.7	80.6	▼ -0.1	0.3
Net LNG Exports	10.6	11.2	11.1	10.8	10.7	10.9	0.2	▼ 0.0
Total Mexican Exports	7.0	6.9	7.0	7.1	6.9	6.9	▼ 0.0	▼-0.1
Implied Daily Storage Activity	8.8	7.2	4.5	1.9	4.8	5.8	1.0	
EIA Reported Daily Storage Activity	8.6	8.3	4.6	2.1	5.9			
Daily Model Error	0.2	-1.1	0.0	-0.2	-1.1			

Monthly Balances									
•	2Yr Ago	LY	Apr 22	May 22	Jun-22	Jul-22	MTD	MoM	ve IV
	Aug-20	Aug-21	Apr-22	May-22			Aug-22		vs. LY
Lower 48 Dry Production	88.8	93.8	94.9	95.8	97.0	97.1	98.2	1.2	4.5
Canadian Imports	4.9	5.1	5.8	5.1	5.7	5.9	5.5	▼-0.4	0.4
L48 Power	41.0	40.4	25.1	29.7	36.8	43.4	45.6	2.2	5.3
L48 Residential & Commercial	7.7	7.9	22.3	12.4	9.0	8.5	8.4	▼-0.1	a 0.5
L48 Industrial	20.8	21.0	20.1	19.8	20.6	20.3	20.8	0.5	▼ -0.2
L48 Lease and Plant Fuel	4.8	5.1	5.2	5.3	5.2	5.3	5.3	0.1	a 0.2
L48 Pipeline Distribution	2.5	2.6	2.6	2.4	2.5	2.8	2.9	0.1	a 0.3
L48 Regional Gas Consumption	76.9	77.0	75.3	69.6	74.2	80.1	83.1	2.9	▲ 6.1
Net LNG Exports	4.0	10.5	12.3	12.5	11.2	10.9	10.9	▼-0.1	0.4
Total Mexican Exports	6.0	6.9	6.7	7.0	7.1	7.0	6.8	▼-0.2	▼ -0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity	6.7	4.6	6.4	11.9	10.2	4.9	3.0		
Daily Model Error									



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	DoD	vs. 7D
NRC Nuclear Daily Output	91.0	90.1	90.0	89.2	90.2	90.5	91.6	1.0	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	13.9	14.8	14.9	15.7	14.7	14.4	13.3	-1.0	-1.4
NRC % Nuclear Cap Utilization	92.5	91.6	91.5	90.7	91.7	92.0	93.1	1.1	1.4

Wind Generation Daily Average - MWh (EIA)

	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	DoD	vs. 7D
CALI Wind	2464	2183	1797	2326	1986	1755	1916	161	-169
TEXAS Wind	18368	13700	10997	13426	12477	8846	6643	-2202	-6326
US Wind	57385	44326	40558	48433	40025	32618	22814	-9803	-21077

Generation Daily Average - MWh (EIA)

	3-Aug	4-Aug	5-Aug	6-Aug	7-Aug	8-Aug	9-Aug	DoD	vs. 7D
US Wind	57385	44326	40558	48433	40025	32618	22814	-9803	-21077
US Solar	17718	15309	16842	18287	18115	17107	15941	-1167	-1289
US Petroleum	1415	1545	1159	989	1118	2977	3319	341	1785
US Other	10493	10664	10123	10143	10345	10863	11010	147	571
US Coal	126333	129340	127195	117986	121325	126377	125498	-880	738
US Nuke	92626	92009	91949	91531	92304	92765	93697	932	1500
US Hydro	32448	31503	31507	27970	28074	32116	29805	-2311	-799
US Gas	244106	254550	252940	235195	236485	263644	262763	-881	14943

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear Generation Weekly Average - GWh (NRC)	Nuclear	Generation	Weekly	Average -	GWh	(NRC)
---	---------	------------	--------	-----------	-----	-------

	29-Jul	5-Aug	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	90.1	90.6	0.5	-0.1
NRC Nuclear Max Capacity	104.9	104.9	0.0	
NRC Nuclear Outage	14.8	14.3	-0.5	
NRC % Nuclear Cap Utilization	91.6	92.1	0.5	

Wind Generation Weekly Average - MWh (EIA)

	29-Jul	5-Aug	WoW	WoW Bcf/d Impact
CALI Wind	3049	1933	-1115	0.2
TEXAS Wind	14533	14443	-90	0.0
US Wind	44004	43886	-118	0.0
			0%	
		0.0		

Generation Weekly Average - MWh (EIA)

est.

	29-Jul	5-Aug	WoW	WoW Bcf/d
				Impact
US Wind	44004	43886	-118	0.0
US Solar	18097	17412	-686	0.1
US Petroleum	1465	1131	-334	0.1
US Other	10690	10395	-295	0.1
US Coal	128742	122297	-6445	1.2
US Nuke	92281	92607	326	-0.1
US Hydro	32210	31336	-874	0.2
US Gas	238163	235824	-2339	-0.4

See National Wind and Nuclear daily charts

-0.2



NRC % Nuclear Cap Utilization

Market Report

92.2

92.6

Monthly Average Generation Data

Nuclear Generation Monthly Average - GWh (NRC)										
	2Yr Ago	LY		MTD						
	Same 30 days	Same 30 days	May-22	Jun-22	Jul-22	Aug-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY	
NRC Nuclear Daily Output	91.1	90.7	81.7	88.5	90.6	90.7	90.4	0.1	-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	13.8	14.2	23.2	16.3	14.3	14.2	14.4	-0.1	0.2	

83.0

90.0

92.1

92.2

92.0

Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	May-22	Jun-22	Jul-22	Aug-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	2661	2183	3361	2840	2719	2001	2327	-718	145
TEXAS Wind	9610	9456	16756	13441	11765	11848	12031	83	2575
US Wind	32109	32537	56649	47099	39701	39722	39812	22	7274

Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	May-22	Jun-22	Jul-22	Aug-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	32109	32537	56649	47099	39701	39722	39812	89.5	~ 7274
US Solar	12107	14160	18211	18718	18593	17019	17747	~ 727.7	3586
US Petroleum	1586	1055	518	998	1252	1951	1609	▼ -342	555
US Other	9964	9467	7724	7717	9961	10582	10498	▼ -84	1031
US Coal	121043	138949	85695	104718	119791	125109	123961	▼ -1148	▼-14988
US Nuke	93271	93420	85496	88305	92882	92712	92569	▼ -144	▼ -851
US Hydro	30679	28876	31811	37485	34186	30513	32101	1588	3225
US Gas	228427	214050	157670	193810	235777	249695	244534	687	30485
US Total	526997	532423	443969	498401	548763	567087	559378	1284	26956



See National Wind and Nuclear daily charts



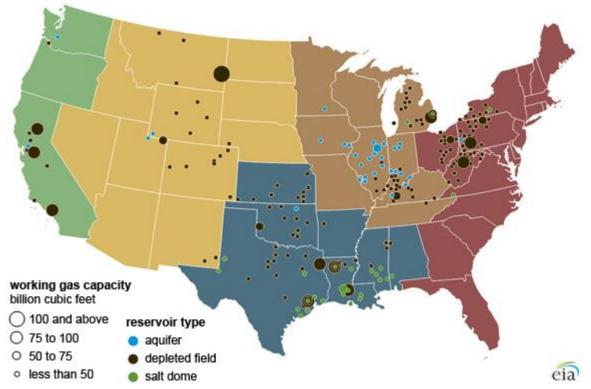
Regional S/D Models Storage Projection

Week Ending 5-Aug

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	6.8	-0.3	6.5	45
East	0.6	2.5	3.0	21
Midwest	3.9	-0.7	3.3	23
Mountain	4.6	-4.1	0.4	3
South Central	-2.7	2.9	0.2	1
Pacific	0.5	-0.9	-0.4	-3

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

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



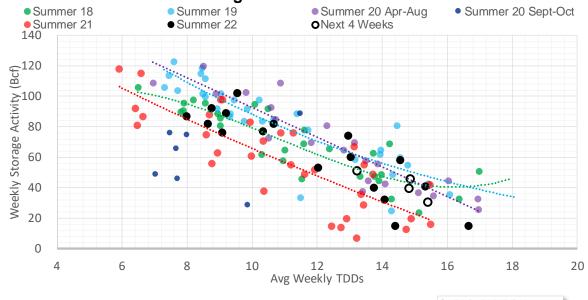


Weather Model Storage Projection

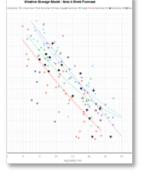
Next report and beyond

Week Ending	GWDDs	Week Storage Projection
05-Aug	14.9	45
12-Aug	15.4	30
19-Aug	13.2	51
26-Aug	14.8	39

Weather Storage Model - Next 4 Week Forecast



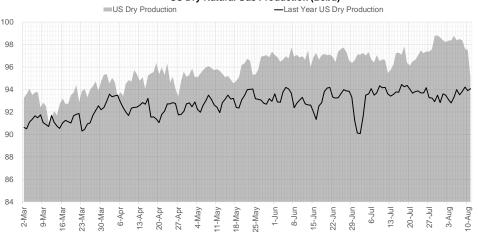
Go to larger image



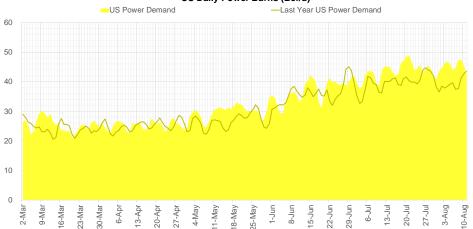


Supply - Demand Trends

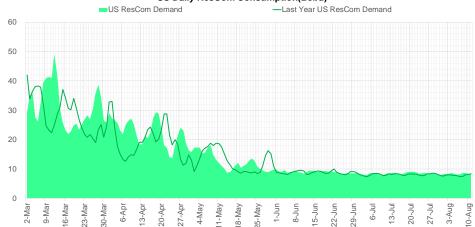
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



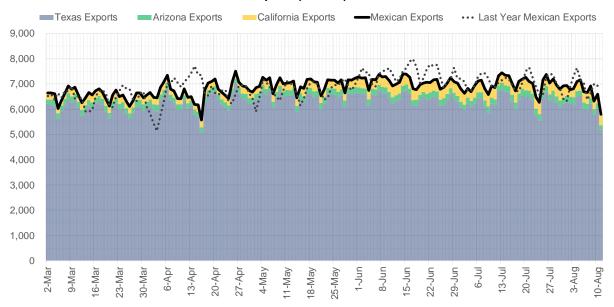
US Daily ResCom Consumption(Bcf/d)



Source: Bloomberg



Mexican Exports (MMcf/d)



Net LNG Exports - Last 30 days (MMcf/d) Cameron Exports Elba Exports Sabine Pass Exports Cove Point Exports Everett Exports Golden Pass Exports Lake Charles Exports Freeport Exports Chorpus Christie Import LNG Exports ■ Northeast Exports ■Neptune Exports 12,000 10,000 8,000 6,000 4,000 2,000 0 (2,000)27-Jul

Source: Bloomberg



Nat Gas Options Volume and Open Interest CME and ICE Combined

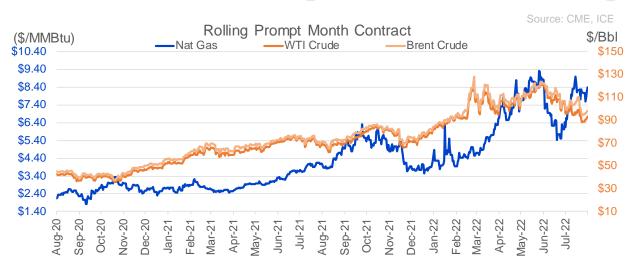
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
9	2022	P	7.00	3214	10	2022	Р	3.00	36597
9	2022	Ċ	10.00	3184	10	2022	Ċ	6.00	36016
10	2022	P	6.00	3151	10	2022	P	2.50	28111
11	2022	P	6.00	3124	10	2022	P	6.00	28008
9	2022	Ċ	9.00	3059	10	2022	P	5.00	25002
11	2022	P	5.00	2763	9	2022	C	6.00	24368
11	2022	Ċ	8.50	2700	9	2022	Č	10.00	23999
9	2022	Ċ	9.50	2624	10	2022	С	5.00	23268
9	2022	P	7.50	2563	3	2023	С	10.00	22867
10	2022	C	8.00	2542	10	2022	Р	3.50	22088
11	2022	P	5.50	2505	10	2022	С	10.00	21499
11	2022	C	9.00	2002	10	2022	Р	4.00	21470
10	2022	Ċ	9.00	1925	5	2023	Р	2.00	20747
11	2022	P	6.50	1563	9	2022	Р	4.00	20452
10	2022	C	12.00	1550	9	2022	Р	6.00	19836
4	2023	P	2.50	1550	9	2022	С	7.00	19545
5	2023	Р	2.50	1550	10	2022	С	12.00	19132
6	2023	P	2.50	1550	11	2022	Р	4.00	18984
7	2023	P	2.50	1550	12	2022	Р	5.00	18457
8	2023	P	2.50	1550	12	2022	С	5.00	18218
9	2023	P	2.50	1550	10	2022	С	8.00	18003
10	2023	P	2.50	1550	3	2023	Р	3.00	17912
11	2022	Р	7.00	1541	1	2023	С	10.00	17478
9	2022	С	8.50	1487	9	2022	С	9.00	16992
11	2022	С	10.00	1485	10	2022	P	2.00	16759
9	2022	C	12.00	1431	9	2022	P	3.00	16612
9	2022	Р	6.75	1374	10	2023	P	2.50	16375
12	2022	С	10.00	1318	9 4	2022 2023	C P	4.00	15970
9	2022	Р	6.00	1215		2023		3.00	15909
12	2022	С	12.00	1174	2 9	2023	C P	10.00 2.50	15873 15478
11	2022	С	11.00	1150	9 10	2022	P P	2.50 3.25	15350
10	2022	С	11.00	1124	10	2022	C	7.00	15089
12	2022	С	11.00	1050	10	2022	P	2.00	14980
4	2023	С	5.50	1028	9	2023	P	2.75	14887
5	2023	С	5.50	1028	3	2023	Ċ	20.00	14749
6	2023	С	5.50	1028	11	2023	Č	8.00	14691
7	2023	С	5.50	1028	10	2023	P	3.00	14630
8	2023	С	5.50	1028	9	2022	P	5.00	14581
9	2023	С	5.50	1028	9	2022	P	3.50	14018
10	2023	С	5.50	1028	12	2022	C	6.00	13987
11	2022	С	15.00	1002	2	2023	Č	9.00	13860
12	2022	С	9.00	1000	4	2023	P	2.75	13745
3	2023	Р	5.00	1000	11	2022	С	10.00	13678
3	2023	Р	4.00	950	9	2022	P	6.50	13483
9	2022	Р	6.50	813	9	2022	С	9.50	13430
12	2022	Р	6.00	800	10	2022	C	4.00	13309
5	2023	С	6.00	757	10	2022	P	2.75	13286
6	2023	С	6.00	757	3	2023	Р	4.00	13259
7	2023	С	6.00	757	12	2022	C	10	13254
							Source	e: CME, ICE	



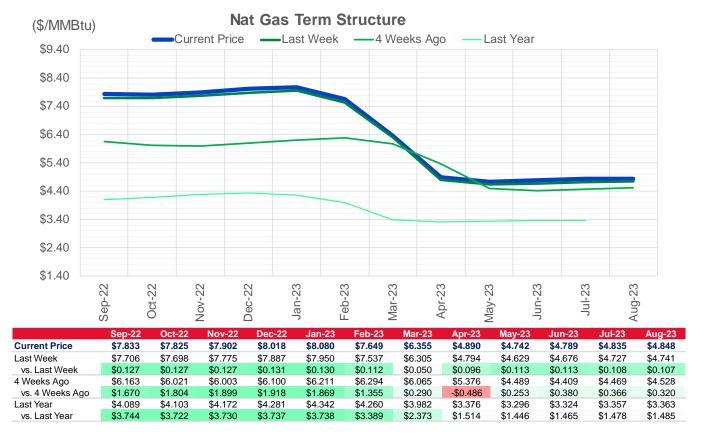
Nat Gas Futures Open Interest

CME and ICE Combined

CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MM										
CME Henry H				ICE Henry Hub Futures Contract Equivalent (10,000 MM						
	Current	Prior	Daily Change		Current	Prior	Daily Change			
SEP 22	91207	103652	-12445	SEP 22	81250	81463	-213			
OCT 22	95085	92673	2412	OCT 22	77424	77342	81			
NOV 22	104979	98955	6024	NOV 22	64019	62912	1107			
DEC 22	61757	60968	789	DEC 22	66257	65841	417			
JAN 23	78709	78263	446	JAN 23	65535	65564	-29			
FEB 23	36720	36728	-8	FEB 23	61024	60550	474			
MAR 23	53933	53540	393	MAR 23	53943	53822	121			
APR 23	69856	69970	-114	APR 23	54018	53793	225			
MAY 23	71644	70183	1461	MAY 23	53251	52932	319			
JUN 23	23422	23306	116	JUN 23	46734	46495	239			
JUL 23	23418	24046	-628	JUL 23	44912	44798	114			
AUG 23	19469	19487	-18	AUG 23	43984	43858	126			
SEP 23	19400	18910	490	SEP 23	43158	42970	188			
OCT 23	47744	47465	279	OCT 23	50070	50083	-13			
NOV 23	13055	13156	-101	NOV 23	44920	44937	-17			
DEC 23	12422	12302	120	DEC 23	40974	40993	-19			
JAN 24	17909	17731	178	JAN 24	39891	39845	46			
FEB 24	7742	7706	36	FEB 24	30259	30224	35			
MAR 24	17647	17625	22	MAR 24	34940	34810	131			
APR 24	14006	13954	52	APR 24	28442	28386	56			
MAY 24	6864	6903	-39	MAY 24	27102	27052	50			
JUN 24	2534	2509	25	JUN 24	24113	24064	49			
JUL 24	2419	2419	0	JUL 24	23763	23717	46			
AUG 24	3333	3309	24	AUG 24	23652	23607	45			
SEP 24	1920	1893	27	SEP 24	23594	23545	49			
OCT 24	8514	8509	5	OCT 24	26846	26756	90			
NOV 24	4782	4757	25	NOV 24	24941	24915	26			
DEC 24	7673	7663	10	DEC 24	27970	27951	19			
JAN 25	16003	15977	26	JAN 25	20901	20837	64			
FEB 25	892	877	15	FEB 25	14006	13979	27			







		Cash	Prompt	Cash to	
	Units	Settled	Settle	Prompt	
AGT Citygate	\$/MMBtu	7.63	7.84	0.21	
TETCO M3	\$/MMBtu	7.41	7.21	-0.20	
FGT Zone 3	\$/MMBtu	7.42	9.90	2.48	
Zone 6 NY	\$/MMBtu	7.42	7.19	-0.23	
Chicago Citygate	\$/MMBtu	7.76	7.95	0.19	
Michcon	\$/MMBtu	7.75	7.88	0.13	
Columbia TCO Pool	\$/MMBtu	7.23	7.24	0.01	
Ventura	\$/MMBtu	5.95	7.86	1.91	
Rockies/Opal	\$/MMBtu	7.67	7.68	0.01	
El Paso Permian Basin	\$/MMBtu	7.21	7.20	-0.01	
Socal Citygate	\$/MMBtu	10.33	8.56	-1.78	
Malin	\$/MMBtu	7.64	7.84	0.20	
Houston Ship Channel	\$/MMBtu	7.58	7.81	0.23	
Henry Hub Cash	\$/MMBtu	7.86	7.71	-0.15	
AECO Cash	C\$/GJ	3.38	4.87	1.49	
Station2 Cash	C\$/GJ	3.08	7.63	4.55	
Dawn Cash	C\$/GJ	7.73	7.95	0.22	

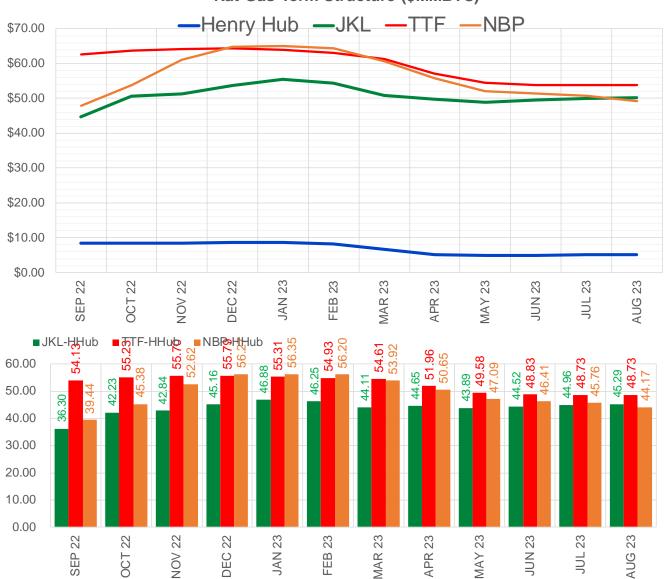
Source: CME, Bloomberg



) / C	s. 4 Weeks		
	Units	Current Price	vs.	Last Week		Ago	VS	s. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224		0.000		0.000		1.770
NatGas Oct21/Nov21	\$/MMBtu	0.361		0.000		0.000		0.289
NatGas Oct21/Jan22	\$/MMBtu	-1.817		0.000		0.000		-2.065
NatGas Apr22/Oct22	\$/MMBtu	2.857		-0.069		1.619		2.857
WTI Crude	\$/Bbl	91.93		1.270		-4.370		22.680
Brent Crude	\$/Bbl	97.40		0.620		-2.170		25.960
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	341.03	•	-0.450		-25.560		130.450
Propane, Mt. Bel	cents/Gallon	1.07	•	-0.026	•	-0.070		-0.044
Ethane, Mt. Bel	cents/Gallon	0.57		-0.001		0.054		0.232
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						

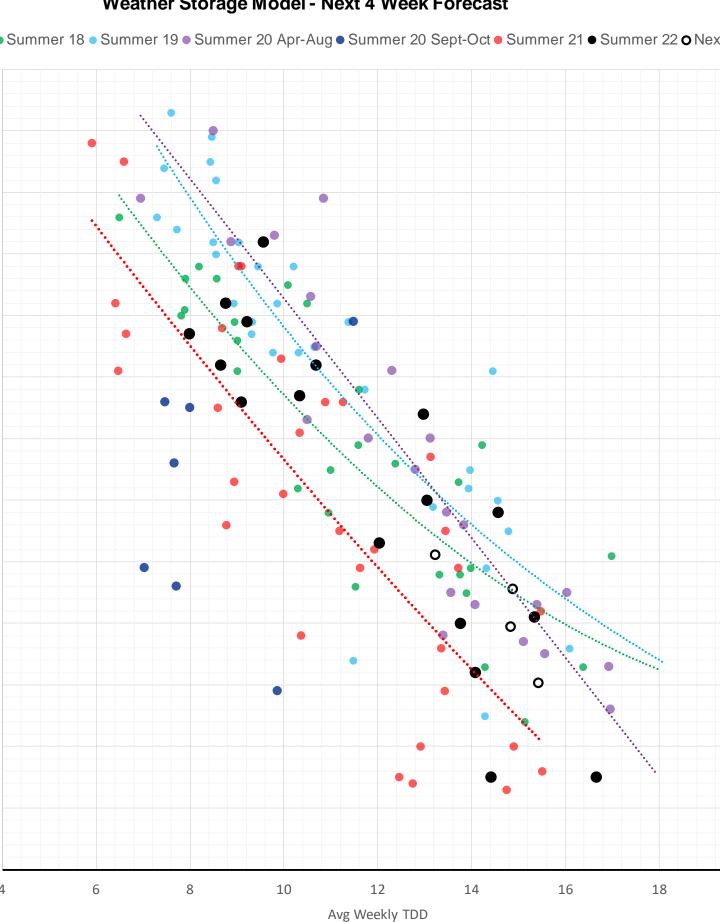


Nat Gas Term Structure (\$MMBTU)



	SEP 22	OCT 22	NOV 22	DEC 22	JAN 23	FEB 23	MAR 23	APR 23	MAY 23	JUN 23	JUL 23	AUG 23
Henry Hub	\$8.415	\$8.398	\$8.496	\$8.590	\$8.655	\$8.183	\$6.739	\$5.082	\$4.913	\$4.957	\$5.003	\$5.017
JKL	\$44.710	\$50.630	\$51.335	\$53.750	\$55.535	\$54.435	\$50.850	\$49.735	\$48.805	\$49.480	\$49.965	\$50.305
JKL-HHub	\$36.295	\$42.232	\$42.839	\$45.160	\$46.880	\$46.252	\$44.111	\$44.653	\$43.892	\$44.523	\$44.962	\$45.288
TTF	\$62.541	\$63.628	\$64.199	\$64.384	\$63.967	\$63.108	\$61.353	\$57.042	\$54.494	\$53.783	\$53.735	\$53.745
TTF-HHub	\$54.126	\$55.230	\$55.703	\$55.794	\$55.312	\$54.925	\$54.614	\$51.960	\$49.581	\$48.826	\$48.732	\$48.728
NBP	\$47.853	\$53.774	\$61.120	\$64.861	\$65.008	\$64.386	\$60.663	\$55.728	\$52.002	\$51.363	\$50.764	\$49.190
NBP-HHub	\$39.438	\$45.376	\$52.624	\$56.271	\$56.353	\$56.203	\$53.924	\$50.646	\$47.089	\$46.406	\$45.761	\$44.173

Weather Storage Model - Next 4 Week Forecast



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