

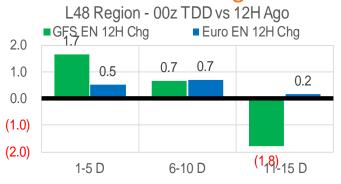
	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 104.00	\$ (1.71)	* \$ (2.6)

	Current	Δ from YD	Δ froi	m 7D
			A	vg
Brent Prompt	¢ 105.60	* \$ (1.82)	— ¢	(3.4)
Prompt	φ 105.09	Ψ ψ (1.02)	ΨΨ	(3.4)

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Price Summary

Vs. 12H Ago



Vs. 24H Ago

L48 Region - 00z TDD vs 24H Ago GFS EN 24H Chg ■ Euro EN 24H Chg 2.0 1.1 1.0 0.2 0.1 0.0 (0.1)(0.1)(1.0)(2.0)11-15 D 1-5 D 6-10 D

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	95.2	▼ -0.82	▼ -0.88

	Current	Δ from YD	Δ from 7D Avg			
US Power Burns	28.2	▼ -0.69	1.64			

	Current	Δ from YD	Δ from 7D Avg
US ResComm	11.2	- 0.67	▼ -3.69

	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	5.1	a 0.37	▼ -0.16

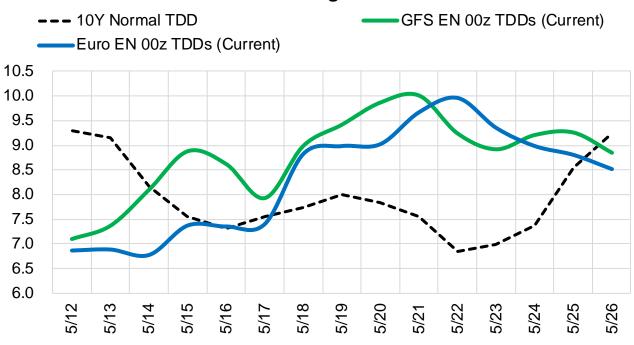
	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	11.6	▼ -0.63	▼ -0.66

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.8	▼ -0.27	▼ -0.21

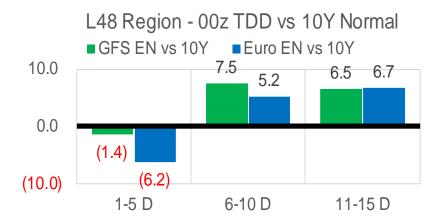


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	6-May	7-May	8-May	9-May	10-May	11-May	12-May	DoD	vs. 7D
Lower 48 Dry Production	96.1	96.2	95.9	96.2	96.1	96.0	95.6	▼-0.4	▼ -0.5
Canadian Imports	5.7	5.1	5.1	5.2	5.2	4.8	5.1	0.4	▼ 0.0
L48 Power	27.4	24.0	23.2	25.5	28.0	28.9	28.2	▼-0.7	2.0
L48 Residential & Commercial	15.3	17.0	17.7	14.4	12.7	11.8	11.2	▼-0.7	▼ -3.7
L48 Industrial	21.7	21.8	22.0	21.7	21.5	21.2	21.0	▼-0.2	- 0.7
L48 Lease and Plant Fuel	5.2	5.2	5.2	5.2	5.2	5.2	5.1	▼-0.1	▼ -0.1
L48 Pipeline Distribution	2.4	2.3	2.3	2.3	2.3	2.3	2.2	▼-0.1	- 0.1
L48 Regional Gas Consumption	72.1	70.3	70.4	69.0	69.8	69.4	67.6	▼-1.7	▼ -2.5
Net LNG Delivered	11.95	12.12	12.34	12.29	12.51	12.23	11.60	▼-0.6	▼ -0.6
Total Mexican Exports	7.2	6.9	6.6	7.0	7.2	7.1	6.8	▼-0.3	▼ -0.2
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	10.6	11.9	11.7	13.1	11.8	12.1	14.6		

EIA Storage Week Balances

	1-Apr	8-Apr	15-Apr	22-Apr	29-Apr	6-May	WoW	vs. 4W
Lower 48 Dry Production	96.1	95.8	96.4	96.7	95.8	95.8	▼ 0.0	▼-0.4
Canadian Imports	5.7	5.8	5.6	5.8	6.1	5.9	▼-0.2	0.1
L48 Power	25.5	25.0	24.6	25.1	25.0	26.5	1.5	1.6
L48 Residential & Commercial	30.8	25.2	22.4	24.1	18.5	16.5	▼ -2.0	▼ -6.0
L48 Industrial	22.9	22.5	21.7	21.8	21.9	21.4	▼ -0.5	▼ -0.5
L48 Lease and Plant Fuel	5.2	5.2	5.3	5.3	5.2	5.2	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.9	2.8	2.6	2.7	2.4	2.4	0.0	▼ -0.2
L48 Regional Gas Consumption	87.3	80.7	76.5	79.0	73.1	72.1	▼ -1.0	▼ -5.2
Net LNG Exports	13.1	12.4	12.5	12.1	12.2	12.2	▼ 0.0	▼-0.1
Total Mexican Exports	6.4	6.8	6.6	6.7	6.9	6.9	▲ 0.0	0.2
Implied Daily Storage Activity	-5.1	1.7	6.5	4.7	9.7	10.6	0.9	
EIA Reported Daily Storage Activity	-4.7	2.1	7.6	5.7	11.0			
Daily Model Error	-0.4	-0.4	-1.1	-1.0	-1.3			

Monthly Balances									
•	2Yr Ago	LY					MTD		
	May-20	May-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	MoM	vs. LY
Lower 48 Dry Production	87.0	93.0	93.4	92.7	95.0	96.2	95.9	▼-0.3	3.0
Canadian Imports	3.9	4.5	6.7	6.6	5.2	5.8	5.5	▼-0.3	1.0
L48 Power	26.9	26.5	31.5	28.9	25.6	24.8	26.9	2.1	0.4
L48 Residential & Commercial	12.8	12.8	49.1	44.4	30.7	22.2	15.5	▼ -6.7	2.7
L48 Industrial	19.4	20.9	24.7	22.5	21.8	21.9	21.6	- 0.4	0.7
L48 Lease and Plant Fuel	4.7	5.0	5.1	5.1	5.2	5.2	5.2	▼ -0.1	0.2
L48 Pipeline Distribution	2.2	2.2	3.8	3.6	2.9	2.6	2.4	▼ -0.2	0.2
L48 Regional Gas Consumption	65.9	67.5	114.3	104.4	86.2	76.8	71.5	▼ -5.3	4.0
Net LNG Exports	6.7	10.8	12.4	12.4	12.9	12.3	12.2	▼ 0.0	1.4
Total Mexican Exports	4.8	6.8	6.3	6.2	6.5	6.7	7.0	0.3	▲ 0.2
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	13.6	12.4	-32.9	-23.7	-5.4	6.2	10.7		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	4-May	5-May	6-May	7-May	8-May	9-May	10-May	DoD	vs. 7D
NRC Nuclear Daily Output	77.7	77.8	78.2	78.6	78.0	79.2	79.9	0.8	1.7
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	27.1	27.1	26.6	26.3	26.9	25.7	24.9	-0.8	-1.7
NRC % Nuclear Cap Utilization	79.0	79.1	79.6	79.9	79.3	80.5	81.3	8.0	1.7

Wind Generation Daily Average - MWh (EIA)

	4-May	5-May	6-May	7-May	8-May	9-May	10-May	DoD	vs. 7D
CALI Wind	1322	2941	4342	4672	4621	3997	3684	-313	35
TEXAS Wind	16925	14500	8908	15424	20061	21168	20896	-271	4732
US Wind	39659	42897	40592	68633	67856	81110	65666	-15444	8875

Generation Daily Average - MWh (EIA)

	4-May	5-May	6-May	7-May	8-May	9-May	10-May	DoD	vs. 7D
US Wind	39659	42897	40592	68633	67856	81110	65666	-15444	8875
US Solar	16603	16197	17119	16372	17257	18101	17672	-429	730
US Petroleum	903	990	828	187	187	248	282	34	-275
US Other	7695	7693	7309	7188	7188	7053	7348	295	-6
US Coal	87450	88667	88525	74987	74092	75718	84643	8924	3069
US Nuke	81408	81629	82169	82325	82340	83649	84062	413	1808
US Hydro	29371	28851	28345	23661	24523	27816	31618	3802	4523
US Gas	167319	160830	159472	128594	121031	136601	154374	17774	8733

See National Wind and Nuclear daily charts



US Nuke

US Hydro

US Gas

Nuclear Generation Weekly Average - GWh (NRC)

Storage Week Average Generation Data

Nuclear Generation Weekly A	Average - G	wn (NRC	·)					
	1-Apr	8-Apr	15-Apr	22-Apr	29-Apr	6-May	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	79.3	75.0	71.9	72.3	73.5	76.7	3.1	-0.6
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	25.5	29.9	32.9	32.6	31.4	28.2	-3.1	
NRC % Nuclear Cap Utilization	80.7	76.3	73.2	73.5	74.8	78.0	3.2	
Wind Generation Weekly Ave	erage - MWI	h (EIA)						
	1-Apr	8-Apr	15-Apr	22-Apr	29-Apr	6-May	WoW	WoW Bcf/d Impact
CALI Wind	2643	2611	3434	3613	3153	2929	-225	0.0
TEXAS Wind	14530	14468	16530	15612	18327	16902	-1425	0.3
US Wind	61679	59878	66240	61556	66986	57256	-9730	1.8
							-15%	
						-0.1		
Generation Weekly Average	- MWh (EIA)						
		,				est.		
								WoW
	1-Apr	8-Apr	15-Apr	22-Apr	29-Apr	6-May	WoW	Bcf/d
	•	•	•	•	•	•		Impact
US Wind	61679	59878	66240	61556	66986	57256	-9730	1.8
US Solar	15451	15518	16118	15897	16968	16720	-249	0.0
US Petroleum	1048	1015	964	984	992	931	-61	0.0
US Other	7481	7183	7154	7544	7717	7463	-254	0.0
US Coal	77743	77514	77087	79632	77532	78889	1357	-0.2

See National Wind and Nuclear daily charts

78807

32524

134633

75674

29415

134338

76478

28355

133367

77438

26722

131482

80545

26754

145429

3107

31

13946

-0.6

0.0

2.5

83506

33463

136004



Monthly Average Generation Data

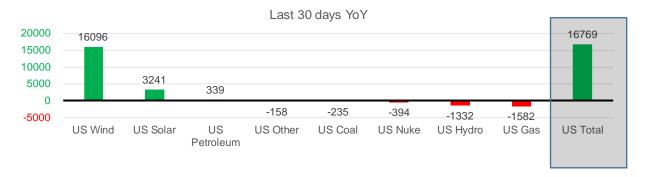
Nuclear Generation Monthly Average - GWh (NRC)											
	2Yr Ago	LY									
	Same 30 days	Same 30 days	Feb-22	Mar-22	Apr-22	May-22	Last 30 days	Last 30 days YoY			
NRC Nuclear Daily Output	79.0	76.1	87.3	81.3	73.3	78.5	75.2	-0.9			
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0			
NRC Nuclear Outage	25.9	28.8	17.5	23.6	31.6	26.4	29.7	0.9			
NRC % Nuclear Cap Utilization	80.3	77.4	88.8	82.7	74.5	79.8	76.5	-0.9			

Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD				
	Same 30 days	Same 30 days	Feb-22	Mar-22	Apr-22	May-22	Last 30 days	Last 30 days YoY		
CALI Wind	2678	3049	1495	2250	3186	3606	3427	378		
TEXAS Wind	10937	11693	11750	14837	16311	17651	17171	5478		
US Wind	40840	46894	54543	58528	64179	59435	62990	16096		

Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD		
	Same 30 days	Same 30 days	Feb-22	Mar-22	Apr-22	May-22	Last 30 days	Last 30 days YoY
US Wind	40840	46894	54543	58528	64179	59435	62990	16096
US Solar	10928	13427	12442	14058	16208	17015	16668	3241
US Petroleum	640	480	1331	985	985	580	819	339
US Other	7930	7651	8632	7206	7386	7387	7493	-158
US Coal	57013	79396	105631	82291	77558	81257	79162	▼ -235
US Nuke	83113	79592	92027	85256	77217	82395	79198	▼ -394
US Hydro	34235	29022	32284	33959	29023	27908	27689	▼ -1332
US Gas	136072	140372	153733	137232	133060	147647	138790	▼ -1582
US Total	369450	397043	461069	419842	406190	425312	413812	16769



See National Wind and Nuclear daily charts



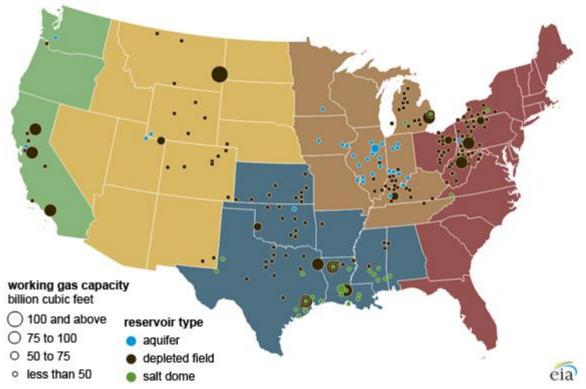
Regional S/D Models Storage Projection

Week Ending 6-May

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	11.2	0.5	11.8	82
East	0.2	2.3	2.5	18
Midwest	3.3	-0.3	3.0	21
Mountain	3.9	-3.5	0.4	3
South Central	2.1	2.7	4.8	34
Pacific	1.7	-0.7	1.0	7

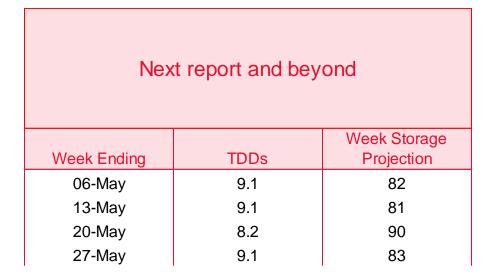
^{*}Adjustment Factor is calcuated based on historical regional deltas

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

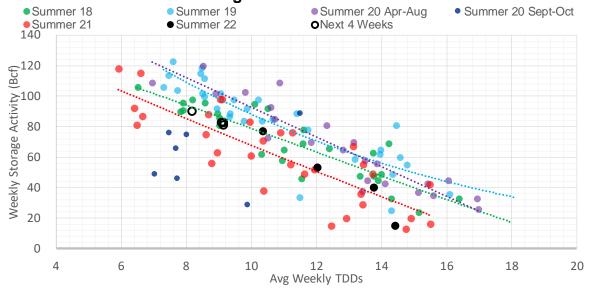




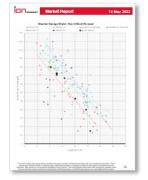
Weather Model Storage Projection



Weather Storage Model - Next 4 Week Forecast



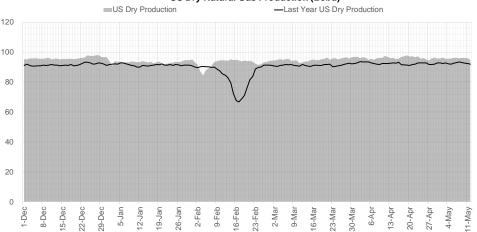
Go to larger image



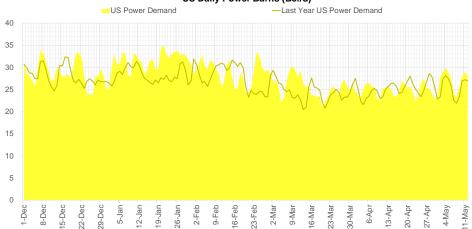


Supply - Demand Trends

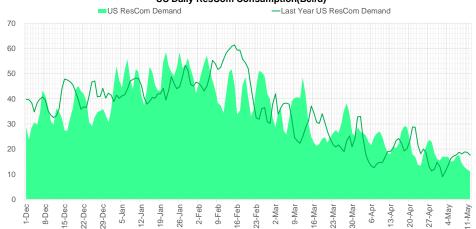
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



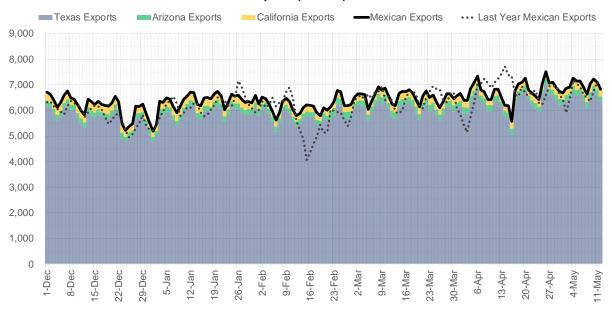
US Daily ResCom Consumption(Bcf/d)



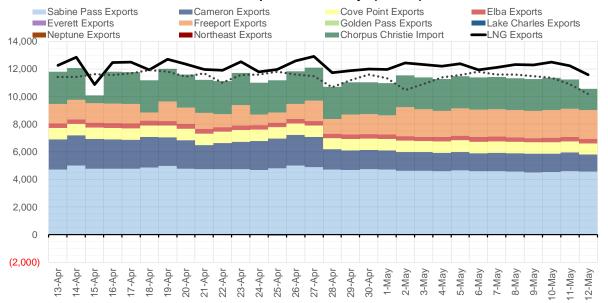
Source: Bloomberg



Mexican Exports (MMcf/d)







Source: Bloomberg



Nat Gas Options Volume and Open Interest CME and ICE Combined

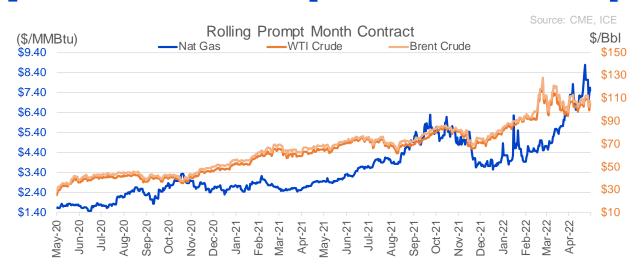
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
6	2022	Р	6.50	3290	8	2022	С	10.00	52908
6	2022	P	6.00	3212	8	2022	Č	10.50	44125
6	2022	C	10.00	3038	10	2022	Č	6.00	34882
6	2022	P	6.15	3008	6	2022	Č	6.00	25145
6	2022	C	9.00	2585	10	2022	Č	5.00	24289
					9	2022	Č	6.00	23730
6	2022	С	11.00	2051	10	2022	P	3.00	20917
6	2022	P	5.50	1846	10	2022	P	3.50	20780
6	2022	P	7.00	1750	8	2022	C	6.00	19667
7	2022	С	8.00	1724	10	2022	P	2.50	19630
6	2022	C	12.00	1700	7	2022	C	8.00	19598
10	2022	P	6.00	1575	6	2022	P	4.00	19544
10	2022	С	8.00	1459	6	2022	C	7.00	19464
7	2022	P	5.50	1297	6	2022	P	6.00	19286
6	2022	С	8.00	1229	7	2022	C	6.00	19029
7	2022	Р	5.25	1089	7 12	2022	C	5.00	18221
7	2022	С	10.00	1059	8		C	7.00	
6	2022	Р	5.75	1000		2022			18213
6	2022	С	8.50	984	6	2022	С	10.00	18077
6	2022	Р	7.50	958	9	2022	С	7.00	17849
12	2022	С	15.00	860	6	2022	С	5.00	17747
9	2022	Р	5.00	855	9	2022	С	10.00	17687
10	2022	Р	3.25	850	10	2022	P	6.00	17506
12	2022	Р	6.00	850	7	2022	С	7.00	17388
10	2022	Р	5.00	801	7	2022	P	3.25	17344
3	2023	Р	3.50	800	10	2022	P	2.00	17320
7	2022	Р	6.00	782	6	2022	P	7.00	17312
8	2022	C	8.00	700	6	2022	P	3.00	17223
11	2022	P	3.00	700	6	2022	P	4.75	17218
7	2022	C	11.00	653	6	2022	С	12.00	17149
6	2022	Č	8.75	650	10	2022	P	4.00	17014
7	2022	P	3.25	650	7	2022	С	9.00	16631
8	2022	P	3.25	650	7	2022	C	10.00	16378
9	2022	P	3.25	650	6	2022	P	5.50	16354
11	2022	P	6.00	620	1	2023	C	10.00	16019
8	2022	C	12.00	615	6	2022	P -	3.50	15958
11	2022	C	8.00	600	6	2022	P	5.00	15952
11	2022	C	11.00	600	6	2022	С	9.00	15763
8	2022	C	10.00	574	5	2023	P	2.00	15736
		P			2	2023	С	10.00	15594
6	2022		5.00	570	11	2022	Р	4.00	15571
7	2022	P	7.00	567	9	2022	Р	2.50	15291
9	2022	С	12.00	565	7	2022	Р	3.50	14978
7	2022	С	9.00	555	9	2022	Р	2.75	14933
10	2023	С	6.00	550	10	2022	P	3.25	14717
1	2025	С	5.00	550	8	2022	С	9.00	14690
1	2025	С	6.00	550	7	2022	Р	3.00	14641
2	2025	С	5.00	550	8	2022	Р	3.00	14603
2	2025	С	6.00	550	6	2022	С	8.00	14556
3	2025	С	5.00	550	9	2022	Р	3.00	14491
3	2025	С	6.00	550	6	2022	P Source	3.75 : CME, ICE	14259.5

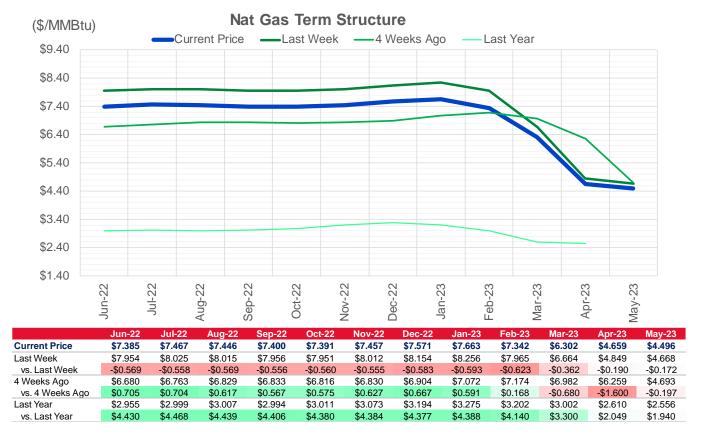


Nat Gas Futures Open Interest

CME and ICE Combined

CME Henry I	Hub Futures (10		u)		Hub Futures Con	tract Equiva	alent (10,000 MM
	Current	Prior	Daily Change		Current	Prior	Daily Change
JUN 22	73102	84397	-11295	JUN 22	82622	81733	889
JUL 22	182814	177584	5230	JUL 22	76469	73366	3104
AUG 22	58923	58783	140	AUG 22	59490	59580	-89
SEP 22	85415	85028	387	SEP 22	64409	65694	-1286
OCT 22	94719	95136	-417	OCT 22	77487	77398	88
NOV 22	51198	49977	1221	NOV 22	58334	58561	-227
DEC 22	48790	48504	286	DEC 22	62453	62410	42
JAN 23	62759	62652	107	JAN 23	66028	65487	542
FEB 23	27443	26948	495	FEB 23	56036	56403	-368
MAR 23	38874	38522	352	MAR 23	55435	55743	-308
APR 23	57849	57812	37	APR 23	53626	53849	-223
MAY 23	60841	60719	122	MAY 23	52508	52508	0
JUN 23	25188	24636	552	JUN 23	44742	44780	-38
JUL 23	20870	20820	50	JUL 23	44102	44164	-62
AUG 23	13349	13314	35	AUG 23	43891	43953	-62
SEP 23	18050	18070	-20	SEP 23	43360	43450	-90
OCT 23	32138	33226	-1088	OCT 23	50580	50246	334
NOV 23	12893	12750	143	NOV 23	44212	44167	45
DEC 23	14003	13926	77	DEC 23	40252	40212	41
JAN 24	20267	20115	152	JAN 24	38778	38492	286
FEB 24	5869	5752	117	FEB 24	26149	26134	16
MAR 24	14366	14364	2	MAR 24	30431	30563	-132
APR 24	11685	11660	25	APR 24	26200	26158	42
MAY 24	6319	6252	67	MAY 24	25597	25567	30
JUN 24	1734	1716	18	JUN 24	22067	22052	15
JUL 24	1992	1980	12	JUL 24	22187	22148	39
AUG 24	2961	2949	12	AUG 24	22291	22252	39
SEP 24	1366	1367	-1	SEP 24	21652	21637	15
OCT 24	6690	6690	0	OCT 24	24010	24050	-41
NOV 24	4676	4672	4	NOV 24	22454	22441	13





		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	8.15	7.91	-0.24
TETCO M3	\$/MMBtu	6.80	7.74	0.94
FGT Zone 3	\$/MMBtu	6.37	8.41	2.04
Zone 6 NY	\$/MMBtu	6.37	7.64	1.27
Chicago Citygate	\$/MMBtu	7.42	8.16	0.74
Michcon	\$/MMBtu	7.43	8.13	0.70
Columbia TCO Pool	\$/MMBtu	6.97	7.72	0.75
Ventura	\$/MMBtu	8.03	8.05	0.02
Rockies/Opal	\$/MMBtu	6.53	7.87	1.33
El Paso Permian Basin	\$/MMBtu	6.95	7.58	0.63
Socal Citygate	\$/MMBtu	7.65	8.38	0.73
Malin	\$/MMBtu	7.28	8.09	0.81
Houston Ship Channel	\$/MMBtu	7.35	8.25	0.90
Henry Hub Cash	\$/MMBtu	7.48	8.03	0.55
AECO Cash	C\$/GJ	6.03	6.42	0.39
Station2 Cash	C\$/GJ	5.91	7.77	1.86
Dawn Cash	C\$/GJ	7.38	8.11	0.73

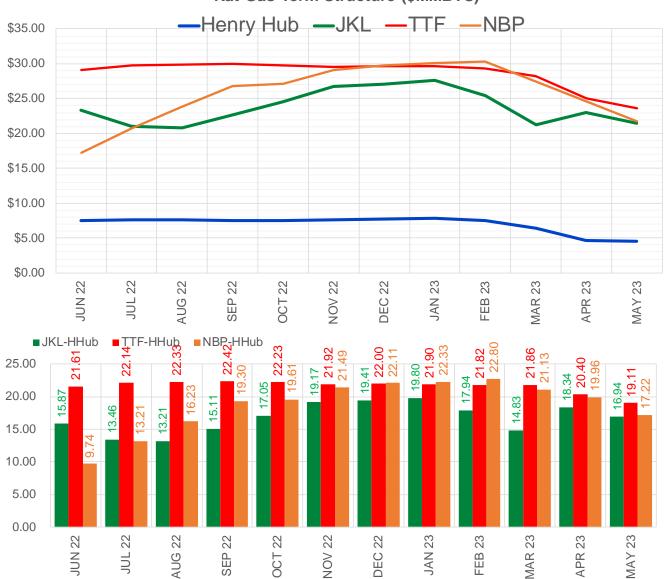
Source: CME, Bloomberg



					V	s. 4 Weeks		
	Units	Current Price	VS.	. Last Week		Ago	VS	. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224		0.000		0.000		2.212
NatGas Oct21/Nov21	\$/MMBtu	0.361		0.000		0.000		0.302
NatGas Oct21/Jan22	\$/MMBtu	-1.817		0.000		0.000		-2.074
NatGas Apr22/Oct22	\$/MMBtu	2.314		-0.757		0.487		2.289
WTI Crude	\$/Bbl	105.71		-2.100		1.460		39.630
Brent Crude	\$/Bbl	107.51		-2.630		-1.270		38.190
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	395.12		-24.580		23.280		188.170
Propane, Mt. Bel	cents/Gallon	1.25		-0.030		-0.081		0.442
Ethane, Mt. Bel	cents/Gallon	0.58		-0.038		0.075		0.320
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						

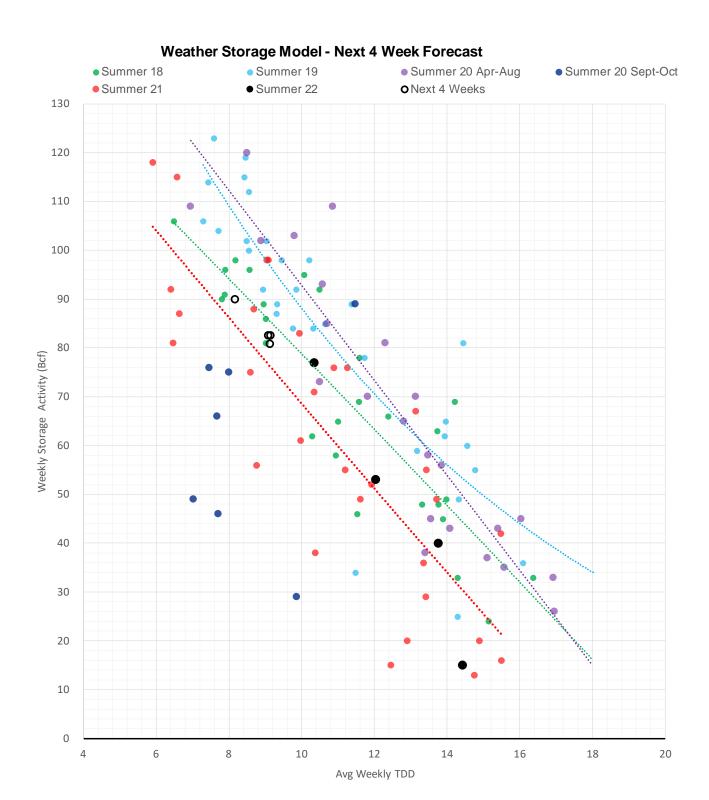


Nat Gas Term Structure (\$MMBTU)



	JUN 22	JUL 22	AUG 22	SEP 22	OCT 22	NOV 22	DEC 22	JAN 23	FEB 23	MAR 23	APR 23	MAY 23
Henry Hub	\$7.503	\$7.582	\$7.569	\$7.542	\$7.522	\$7.586	\$7.691	\$7.787	\$7.495	\$6.385	\$4.630	\$4.501
JKL	\$23.375	\$21.040	\$20.775	\$22.655	\$24.570	\$26.755	\$27.105	\$27.585	\$25.430	\$21.210	\$22.970	\$21.440
JKL-HHub	\$15.872	\$13.458	\$13.206	\$15.113	\$17.048	\$19.169	\$19.414	\$19.798	\$17.935	\$14.825	\$18.340	\$16.939
TTF	\$29.117	\$29.726	\$29.902	\$29.966	\$29.754	\$29.509	\$29.693	\$29.687	\$29.310	\$28.244	\$25.034	\$23.606
TTF-HHub	\$21.614	\$22.144	\$22.333	\$22.424	\$22.232	\$21.923	\$22.002	\$21.900	\$21.815	\$21.859	\$20.404	\$19.105
NBP	\$17.246	\$20.792	\$23.799	\$26.839	\$27.128	\$29.080	\$29.803	\$30.118	\$30.299	\$27.512	\$24.593	\$21.721
NBP-HHub	\$9.743	\$13.210	\$16.230	\$19.297	\$19.606	\$21.494	\$22.112	\$22.331	\$22.804	\$21.127	\$19.963	\$17.220







Weather Storage Model for Summer 2021 & 2022

