

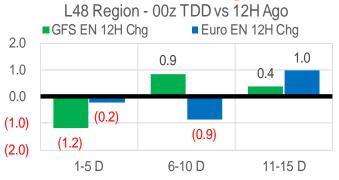
	Current	Δ from YD		m 7D vg
WTI Prompt	\$ 102.00	\$ (1.09)	▼\$	(5.3)

	Curront	Δ from YD	∆ fror	m 7D
	Current	ם ווטוו זם	A۱	vg
Brent	¢ 10465	* \$ (1.29)	— ¢	(F 2)
Prompt	φ 104.05	▼ \$ (1.29)	• ф	(3.2)

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Short-term Weather Model Outlooks
Lower 48 Component Models
Regional S/D Models Storage Projection
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Supply – Demand Trends
Nat Gas Options Volume and Open Interest
Nat Gas Futures Open Interest
Price Summary

Vs. 12H Ago



Vs. 24H Ago

L48 Region - 00z TDD vs 24H Ago GFS EN 24H Chg ■ Euro EN 24H Chg 3.0 2.1 2.0 1.2 1.0 (0.0)0.0 (0.1)(0.2)(1.0)(2.0)(1.3)1-5 D 6-10 D 11-15 D

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	95.3	- 0.87	▼ -0.53

D		Current	Δ from YD	Δ from 7D Avg
3	US Power Burns	27.0	a 0.90	a 0.16

	Current	Δ from YD	Δ from 7D Avg
US ResComm	13.3	▼ -1.29	▼ -2.93

	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	5.1	a 0.06	▼ -0.59

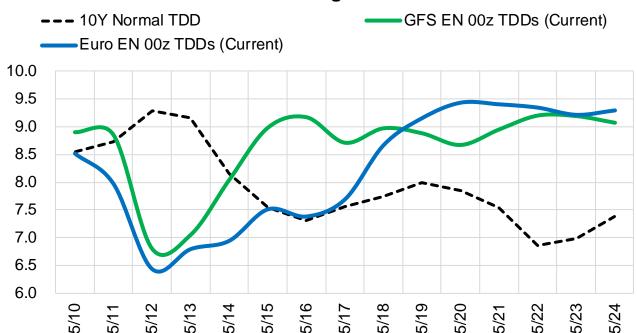
	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	12.6	0.23	a 0.32

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.9	▼ -0.13	-0.08

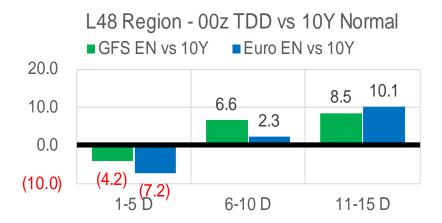


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	4-May	5-May	6-May	7-May	8-May	9-May	10-May	DoD	vs. 7D
Lower 48 Dry Production	95.5	95.8	96.1	96.1	96.0	96.2	95.3	▼-0.9	▼ -0.6
Canadian Imports	6.5	6.1	5.7	5.1	5.1	5.0	5.1	▲ 0.1	▼ -0.5
L48 Power	29.9	28.9	27.4	24.0	23.2	26.1	27.0	▲ 0.9	0.5
L48 Residential & Commercial	17.0	15.0	15.3	16.9	17.7	14.6	13.3	▼ -1.3	▼ -2.8
L48 Industrial	21.7	22.0	21.9	22.1	22.3	22.0	21.8	▼-0.2	- 0.2
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	2.7	2.5	2.4	2.3	2.3	2.3	2.3	▼ 0.0	- 0.1
L48 Regional Gas Consumption	76.3	73.5	72.2	70.5	70.7	70.2	69.5	▼-0.6	▼ -2.7
Net LNG Delivered	12.20	12.39	11.95	12.12	12.37	12.32	12.56	0.2	0.3
Total Mexican Exports	7.2	7.1	7.2	6.9	6.6	7.0	6.9	▼ -0.1	▼ -0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	6.2	8.9	10.5	11.7	11.4	11.7	11.4		

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	26.4	1.5	1.6
L48 Residential & Commercial	30.8	25.2	22.4	24.1	18.5	16.6	▼ -2.0	▼ -6.0
L48 Industrial	22.9	22.5	21.7	21.8	22.0	21.5	▼-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 EIA Reported Daily Storage Activity Daily Model Error	-5.1 -4.7 -0.4	1.7 2.1 -0.4	6.5 7.6 -1.1	4.7 5.7 -1.0	9.7 11.0 -1.3	10.6	0.9	

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	2.9
Canadian Imports	3.9	4.5	6.7	6.6	5.2	5.8	5.6	▼-0.2	1.1
L48 Power	26.9	26.5	31.5	28.9	25.6	24.8	26.6	1.8	0.1
L48 Residential & Commercial	12.8	12.8	49.1	44.4	30.7	22.2	16.2	▼-6.0	3.4
L48 Industrial	19.4	20.9	24.7	22.5	21.8	21.9	21.8	▼-0.2	8.0
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	72.1	▼ -4.6	4.7
Net LNG Exports	6.7	10.8	12.4	12.4	12.9	12.3	12.2	▼-0.1	1.4
Total Mexican Exports	4.8	6.8	6.3	6.2	6.5	6.7	6.9	0.2	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	10.2		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	2-May	3-May	4-May	5-May	6-May	7-May	8-May	DoD	vs. 7D
NRC Nuclear Daily Output	77.4	78.3	77.7	77.8	78.2	78.2	78.2	0.0	0.3
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	27.5	26.6	27.1	27.1	26.6	26.6	26.6	0.0	-0.3
NRC % Nuclear Cap Utilization	78.7	79.6	79.0	79.1	79.6	79.6	79.6	0.0	0.3

Wind Generation Daily Average - MWh (EIA)

	2-May	3-May	4-May	5-May	6-May	7-May	8-May	DoD	vs. 7D
CALI Wind	3505	2655	1322	2941	4342	4672	4621	-51	1382
TEXAS Wind	20925	12638	16925	14500	8908	15424	20061	4638	5175
US Wind	60334	49015	39659	42897	40592	68633	68220	-413	18032

Generation Daily Average - MWh (EIA)

	2-May	3-May	4-May	5-May	6-May	7-May	8-May	DoD	vs. 7D
US Wind	60334	49015	39659	42897	40592	68633	68220	-413	18032
US Solar	16912	16046	16603	16197	17119	16372	17283	912	742
US Petroleum	985	985	903	990	828	187	187	0	-626
US Other	7655	7394	7687	7693	7309	7188	7187	-1	-301
US Coal	77211	81083	87450	88667	88525	74987	76151	1164	-6836
US Nuke	81648	81088	81408	81629	82169	82325	82340	15	628
US Hydro	27631	25750	29371	28851	28344	23660	25108	1448	-2160
US Gas	150424	161208	167274	160830	159472	128594	121078	-7516	-33556

See National Wind and Nuclear daily charts



US Coal

US Nuke

US Hydro

US Gas

Storage Week Average Generation Data

Nuclear Generation Weekly Average - GWh (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 Average - MWh (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	-9731	1.8			
							-15%				
						-0.1					
Generation Weekly Average	- MWh (EIA)									
						est.					
			4- 4				147 147	WoW			
	1-Apr	8-Apr	15-Apr	22-Apr	29-Apr	6-May	WoW	Bcf/d			
LIC Mind	04070	50070	00040	04550	00000	F70F0	0704	Impact			
US Wind	61679	59878	66240	61556	66986	57256	-9731	1.8			
US Solar	15451	15518	16118	15897	16968	16521	-447	0.1			
US Petroleum	1048	1015	964	984	992	931	-61	0.0			
US Other	7481	7183	7154	7544	7717	7401	-316	0.1			

See National Wind and Nuclear daily charts

-0.2

-0.6

0.0

2.4



Monthly Average Generation Data

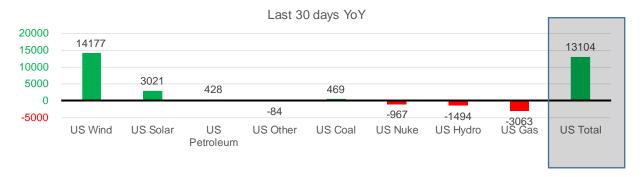
Nuclear Generation Monthly Average - GWh (NRC) 2Yr Ago LY MTD											
	3					WIID					
	Same 30 days	Same 30 days	Feb-22	Mar-22	Apr-22	May-22	Last 30 days	Last 30 days YoY			
NRC Nuclear Daily Output	78.5	75.9	87.3	81.3	73.3	78.1	74.6	-1.4			
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0			
NRC Nuclear Outage	26.4	29.0	17.5	23.6	31.6	26.8	30.3	1.4			
NRC % Nuclear Cap Utilization	79.8	77.2	88.8	82.7	74.5	79.4	75.8	-1.4			

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	2631	3132	1495	2250	3186	3747	3495	363
TEXAS Wind	11146	11902	11750	14837	16311	16807	16873	4971
US Wind	41904	48482	54541	58515	64179	57192	62659	14177

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	41904	48482	54541	58515	64179	57192	62659	14177
US Solar	10715	13426	12442	14054	16208	16627	16447	3021
US Petroleum	598	432	1328	981	985	623	860	428
US Other	7901	7560	8629	7187	7386	7349	7476	▼ -84
US Coal	56286	78030	105630	82291	77526	79865	78499	469
US Nuke	82697	79441	92013	85157	77217	81759	78474	▼ -967
US Hydro	33543	28780	32280	33927	29023	26302	27287	▼ -1494
US Gas	135103	139075	153708	137092	133030	141123	136012	▼ -3063
US Total	367419	395402	461067	419866	406146	412118	408506	13104



See National Wind and Nuclear daily charts



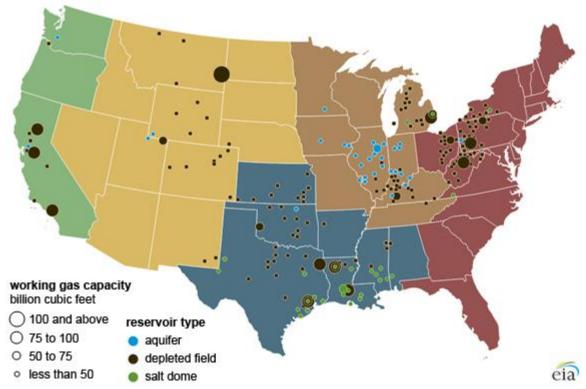
Regional S/D Models Storage Projection

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	0.3	2.3	2.5	18
Midwest	3.2	-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

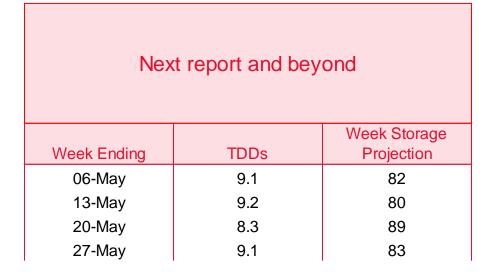
^{*}Adjustment Factor is calcuated based on historical regional deltas

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

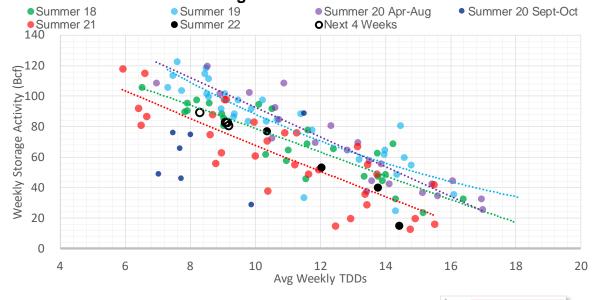




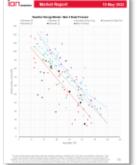
Weather Model Storage Projection



Weather Storage Model - Next 4 Week Forecast



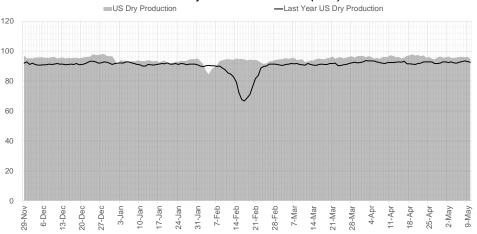
Go to larger image



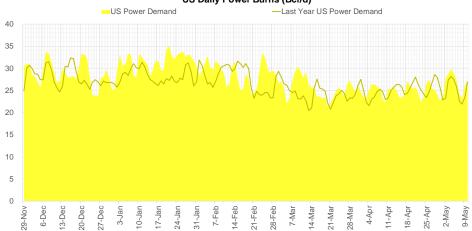


Supply - Demand Trends

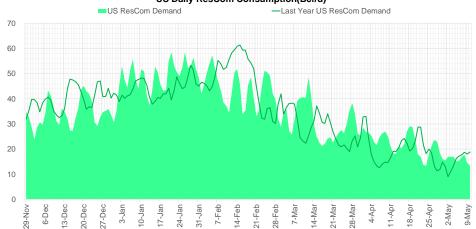
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



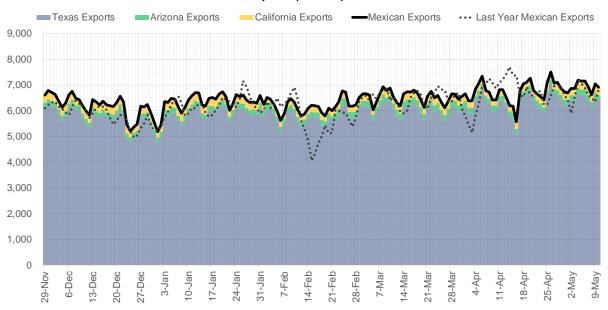
US Daily ResCom Consumption(Bcf/d)



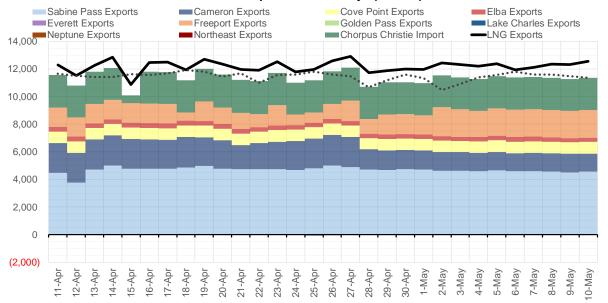
Source: Bloomberg



Mexican Exports (MMcf/d)







Source: Bloomberg



Nat Gas Options Volume and Open Interest CME and ICE Combined

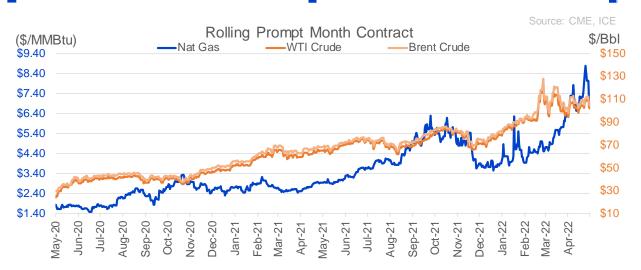
	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
MONTH	YEAR			VOL	WONTH	TEAR			
6	2022	С	10.00	7786	8	2022	С	10.00	52676
6	2022	С	12.00	7672	8	2022	С	10.50	44125
6	2022	Р	6.00	3439	10	2022	С	6.00	34882
6	2022	С	9.00	2777	6	2022	С	6.00	25146
6	2022	Р	7.00	2730	10	2022	С	5.00	25024
7	2022	Р	7.00	2518	9	2022	С	6.00	23730
6	2022	Р	8.00	2088	10	2022	Р	3.00	20977
6	2022	Р	5.50	2058	6	2022	Р	4.00	20397
6	2022	С	8.00	1842	10	2022	Р	3.50	20205
6	2022	Р	6.50	1801	6	2022	P	6.00	19838
6	2022	С	20.00	1451	8	2022	C	6.00	19667
6	2022	С	9.50	1408	10	2022	P	2.50	19254
8	2022	С	7.00	1361	6	2022	С	7.00	19176
6	2022	С	8.50	1344	7	2022	С	8.00	19090
6	2022	Р	6.25	1317	7	2022	C	6.00	19029
9	2022	Р	6.00	1302	6	2022	С	10.00	18694
10	2022	Р	5.00	1143	8	2022	С	7.00	18243
7	2022	С	10.00	980	12	2022	С	5.00	18221
8	2022	P	6.00	973	6	2022	Р	4.75	18144
7	2022	C	9.00	918	9	2022	С	7.00	17849
6	2022	P	7.50	771	6	2022	С	5.00	17847
7	2022	P	5.50	725	7	2022	С	7.00	17769
12	2022	P	6.00	711	7	2022	Р	3.25	17645
7	2022	P	5.00	680	9	2022	С	10.00	17457
7	2022	Р	4.75	659	10	2022	Р	6.00	17374
7	2022	Р	6.00	642	6	2022	Р	7.00	17280
7	2022	P	6.40	623	10	2022	Р	2.00	17263
7	2022	P	6.25	622	6	2022	Р	3.00	17223
8	2022	Ċ	10.00	598	6	2022	С	9.00	16717
6	2022	P	6.75	588	6	2022	Р	5.50	16498
8	2022	C	9.00	574	6	2022	Р	5.00	16441
10	2022	P	4.50	503	10	2022	Р	4.00	16409
12	2022	P	5.00	500	1	2023	С	10.00	16154
12	2022	P	5.25	500	6	2022	Р	3.50	15957
6	2022	P	5.00	487	5	2023	P	2.00	15636
6	2022	P	7.15	483	2	2023	С	10.00	15594
6	2022	P	6.40	410	7	2022	С	9.00	15565
9	2022	C	8.50	409	7	2022	С	10.00	15500
10	2022	C	12.00	409	11	2022	P	4.00	15371
					6	2022	С	12.00	15351
7	2022	C P	15.00	407	9	2022	Р	2.50	15291
6	2022		7.20	401	9	2022	Р	2.75	14933
10	2022	С	6.40	401	7	2022	P	3.50	14931
6	2022	С	6.40	400	7	2022	P	3.00	14550
7	2022	С	6.40	400	8	2022	P	3.00	14503
7	2022	P	5.25	400	7	2022	P -	5.00	14417
8	2022	С	6.40	400	9	2022	P -	3.00	14391
8	2022	P	6.40	400	6	2022	P	3.75	14266
8	2022	P	7.00	400	10	2022	P	3.25	14249
9	2022	С	6.40	400	8	2022	C Source	: CME, ICE	14041

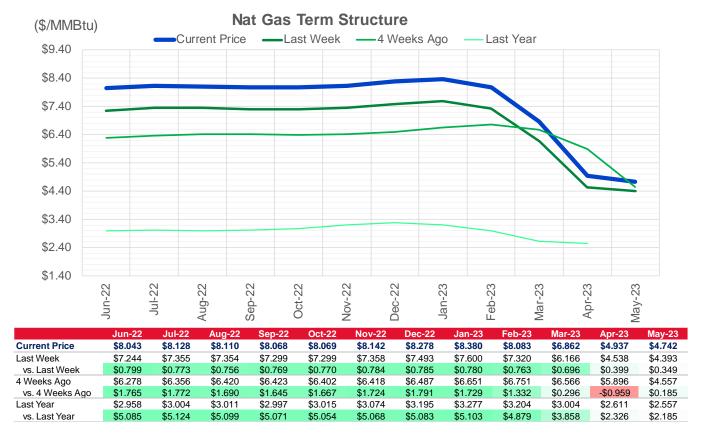


Nat Gas Futures Open Interest

CME and ICE Combined

CME Henry I	ME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MM										
	Current	Prior	Daily Change		Current	Prior	Daily Change				
JUN 22	95652	106262	-10610	JUN 22	84556	84910	-354				
JUL 22	175120	171249	3871	JUL 22	72567	73779	-1212				
AUG 22	58878	57727	1151	AUG 22	59757	59155	602				
SEP 22	86645	83825	2820	SEP 22	65669	65725	-56				
OCT 22	94728	95881	-1153	OCT 22	76998	77110	-112				
NOV 22	48056	46988	1068	NOV 22	58649	58997	-347				
DEC 22	48260	48388	-128	DEC 22	62584	62434	150				
JAN 23	63072	63598	-526	JAN 23	65703	65515	188				
FEB 23	27260	26638	622	FEB 23	56708	56744	-36				
MAR 23	39219	40017	-798	MAR 23	56253	55676	578				
APR 23	57937	57941	-4	APR 23	53474	53432	42				
MAY 23	61026	61312	-286	MAY 23	52401	52096	305				
JUN 23	24364	24201	163	JUN 23	44751	44606	145				
JUL 23	20883	20429	454	JUL 23	44029	43816	213				
AUG 23	13461	13301	160	AUG 23	43888	43691	197				
SEP 23	17994	18223	-229	SEP 23	43327	43127	200				
OCT 23	32981	33041	-60	OCT 23	50206	49653	554				
NOV 23	12708	12847	-139	NOV 23	43815	43553	262				
DEC 23	13804	13479	325	DEC 23	40067	39801	266				
JAN 24	20054	20197	-143	JAN 24	38052	38079	-27				
FEB 24	5992	5929	63	FEB 24	26074	25968	106				
MAR 24	14755	14636	119	MAR 24	30604	30512	92				
APR 24	11558	11231	327	APR 24	26035	26025	11				
MAY 24	6345	6393	-48	MAY 24	25558	25548	11				
JUN 24	1815	1861	-46	JUN 24	22022	22011	11				
JUL 24	1892	1928	-36	JUL 24	22117	22090	26				
AUG 24	3062	3116	-54	AUG 24	22221	22203	19				
SEP 24	1371	1398	-27	SEP 24	21607	21589	18				
OCT 24	6730	6682	48	OCT 24	23984	23995	-11				
NOV 24	4812	4843	-31	NOV 24	22391	22358	33				





		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	8.15	7.06	-1.09
TETCO M3	\$/MMBtu	6.97	6.87	-0.10
FGT Zone 3	\$/MMBtu	7.85	7.59	-0.26
Zone 6 NY	\$/MMBtu	7.85	6.78	-1.07
Chicago Citygate	\$/MMBtu	7.26	7.34	0.08
Michcon	\$/MMBtu	7.35	7.31	-0.04
Columbia TCO Pool	\$/MMBtu	6.90	6.91	0.01
Ventura	\$/MMBtu	8.03	7.23	-0.80
Rockies/Opal	\$/MMBtu	7.20	7.02	-0.18
El Paso Permian Basin	\$/MMBtu	6.89	6.71	-0.18
Socal Citygate	\$/MMBtu	7.60	7.37	-0.23
Malin	\$/MMBtu	7.05	7.13	80.0
Houston Ship Channel	\$/MMBtu	7.26	7.40	0.14
Henry Hub Cash	\$/MMBtu	8.03	7.22	-0.81
AECO Cash	C\$/GJ	5.98	5.59	-0.39
Station2 Cash	C\$/GJ	5.62	6.73	1.11
Dawn Cash	C\$/GJ	7.32	7.31	-0.02

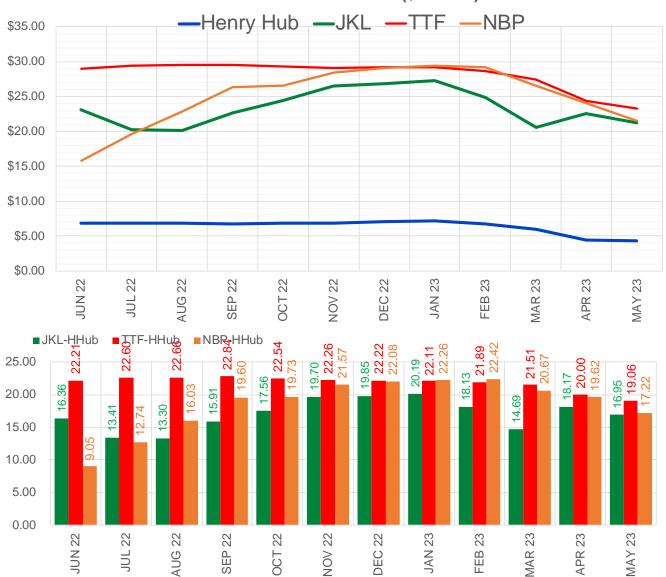
Source: CME, Bloomberg



					VS	s. 4 Weeks		
	Units	Current Price	VS.	Last Week		Ago	VS	s. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224		0.000		0.000		2.212
NatGas Oct21/Nov21	\$/MMBtu	0.361		0.000		0.000		0.299
NatGas Oct21/Jan22	\$/MMBtu	-1.817		0.000		0.000		-2.084
NatGas Apr22/Oct22	\$/MMBtu	1.716		-0.454		0.267		1.692
WTI Crude	\$/Bbl	103.09		-2.080		8.800		38.170
Brent Crude	\$/Bbl	105.94	\blacksquare	-1.640		7.460		37.620
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	383.49	\blacksquare	-37.000		56.720		181.830
Propane, Mt. Bel	cents/Gallon	1.24		-0.039		-0.040		0.438
Ethane, Mt. Bel	cents/Gallon	0.56		0.001		0.068		0.303
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						

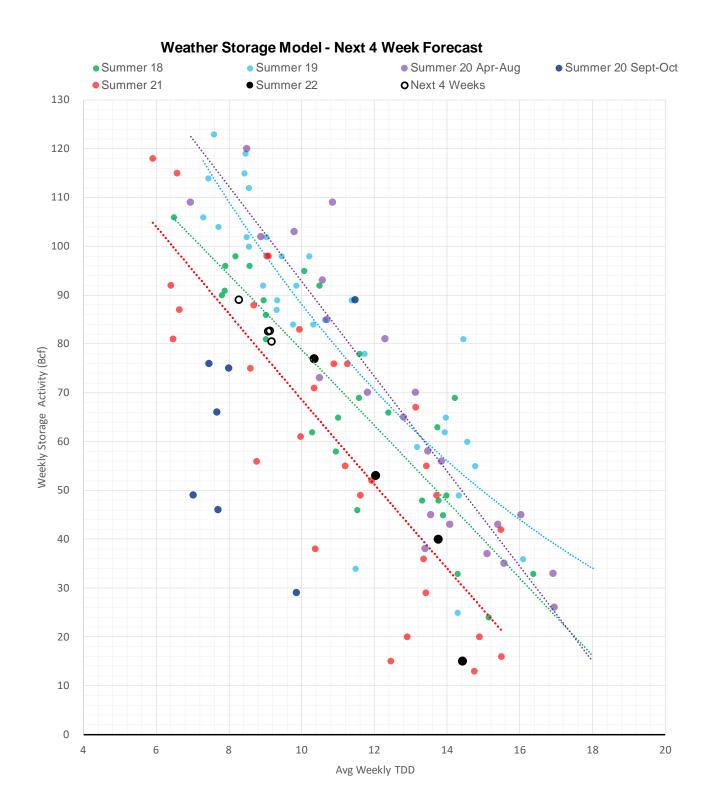


Nat Gas Term Structure (\$MMBTU)



	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	\$6.795	\$6.871	\$6.857	\$6.766	\$6.823	\$6.841	\$7.032	\$7.133	\$6.788	\$5.936	\$4.421	\$4.274
JKL	\$23.155	\$20.280	\$20.155	\$22.680	\$24.385	\$26.545	\$26.880	\$27.320	\$24.920	\$20.625	\$22.590	\$21.220
JKL-HHub	\$16.360	\$13.409	\$13.298	\$15.914	\$17.562	\$19.704	\$19.848	\$20.187	\$18.132	\$14.689	\$18.169	\$16.946
TTF	\$29.009	\$29.468	\$29.521	\$29.602	\$29.358	\$29.098	\$29.248	\$29.238	\$28.678	\$27.444	\$24.422	\$23.333
TTF-HHub	\$22.214	\$22.597	\$22.664	\$22.836	\$22.535	\$22.257	\$22.216	\$22.105	\$21.890	\$21.508	\$20.001	\$19.059
NBP	\$15.843	\$19.610	\$22.883	\$26.361	\$26.552	\$28.414	\$29.114	\$29.395	\$29.205	\$26.602	\$24.044	\$21.489
NBP-HHub	\$9.048	\$12.739	\$16.026	\$19.595	\$19.729	\$21.573	\$22.082	\$22.262	\$22.417	\$20.666	\$19.623	\$17.215







Weather Storage Model for Summer 2021 & 2022

