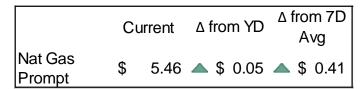


25 March 2022



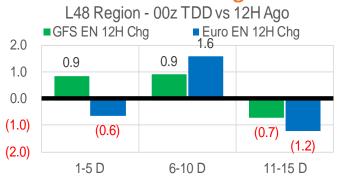
	Current	Δ from YD	Δ fron Αν	
WTI Prompt	\$ 110.09	\$ (2.25)	\$	0.8

	Current	Δ from YD	Δ from 7D			
	Current		Αv	g		
Brent Prompt	\$ 116.73	\$ (2.30)	\$	3.1		
Prompt		, ,				

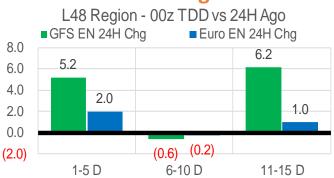
Page Menu

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	95.4	a 0.22	0.15

	Current	Δ from YD	Δ from 7D Avg
US ResComm	24.7	▼ -1.70	1.32

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	13.4	▼ -0.08	0.45

	Current	Δ from YD	Δ from 7D Avg		
US Power Burns	26.9	▼ -0.23	1 .32		

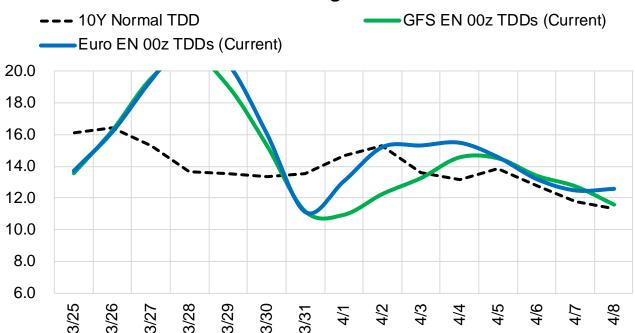
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.9	- 0.41	0.04

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.3	▼ -0.27	▼ -0.21

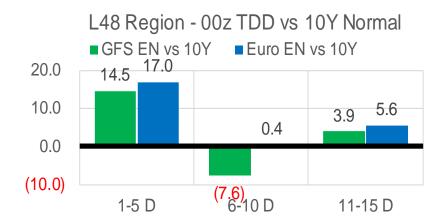


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	24-Mar	25-Mar	DoD	vs. 7D
Lower 48 Dry Production	95.2	95.5	96.1	95.0	95.3	95.2	95.4	0.2	a 0.0
Canadian Imports	4.7	4.7	4.6	4.5	5.3	5.3	4.9	▼-0.4	0.0
L48 Power	24.9	23.6	24.8	25.8	27.6	27.1	26.9	▼-0.2	1.2
L48 Residential & Commercial	23.1	23.5	21.4	23.4	25.1	26.4	24.7	▼ -1.7	0.9
L48 Industrial	19.9	19.7	19.6	20.2	20.6	21.2	21.5	0.3	1.3
L48 Lease and Plant Fuel	5.2	5.2	5.2	5.2	5.2	5.2	5.2	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.5	2.5	2.4	2.6	2.7	2.8	2.7	▼ -0.1	0.1
L48 Regional Gas Consumption	75.6	74.5	73.3	77.1	81.2	82.7	81.0	▼-1.7	3.6
Net LNG Delivered	13.75	13.40	12.53	12.15	13.20	13.51	13.43	▼ -0.1	a 0.3
Total Mexican Exports	6.4	6.1	6.3	6.8	6.7	6.6	6.3	▼ -0.3	▼ -0.2
Implied Daily Storage Activity EIA Reported Daily Storage Activity	4.2	6.2	8.6	3.5	-0.5	-2.3	-0.4		
Daily Model Error									

EIA Storage Week Balances

	18-Feb	25-Feb	4-Mar	11-Mar	18-Mar	25-Mar	WoW	vs. 4W
Lower 48 Dry Production	95.8	94.4	94.4	95.0	94.0	95.3	1.2	▲ 0.8
Canadian Imports	6.2	6.4	5.9	5.2	5.2	4.8	▼-0.4	▼-0.8
L48 Power	26.8	27.3	28.8	27.7	27.4	25.5	▼ -1.9	▼ -2.2
L48 Residential & Commercial	40.3	41.4	38.7	33.3	31.6	23.4	▼ -8.1	▼- 12.8
L48 Industrial	26.1	26.2	23.1	22.6	20.6	21.2	0.6	▼ -1.9
L48 Lease and Plant Fuel	5.2	5.1	5.1	5.2	5.1	5.2	0.1	0.0
L48 Pipeline Distribution	3.2	3.2	3.3	3.2	3.1	2.6	▼ -0.5	▼ -0.6
L48 Regional Gas Consumption	101.6	103.2	99.0	91.9	87.8	77.9	▼ -9.9	▼-17.6
Net LNG Exports	13.0	11.7	12.5	12.8	12.9	13.0	0.1	0.5
Total Mexican Exports	6.1	6.1	6.4	6.6	6.6	6.5	▼ -0.1	▲ 0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity	-18.6 -18.4	-20.2 -19.9	-17.6 -17.7	-11.1 -11.3	-7.9 -7.3	2.7	10.6	
Daily Model Error	-0.2	-0.4	0.1	0.2	-0.6			

Monthly Balances									
•	2Yr Ago	LY					MTD		
	Mar-20	Mar-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	MoM	vs. LY
Lower 48 Dry Production	94.2	91.3	95.7	96.2	94.5	93.7	94.8	1.1	3.5
Canadian Imports	4.1	4.8	5.3	4.8	6.7	6.6	5.1	▼ -1.5	0.4
L48 Power	28.3	24.5	29.2	28.5	30.7	28.2	27.0	▼ -1.2	2.5
L48 Residential & Commercial	27.6	28.9	28.4	33.8	49.1	43.1	29.6	▼ -13.4	0.7
L48 Industrial	22.3	19.3	23.0	22.9	26.4	25.6	21.1	-4.4	1.9
L48 Lease and Plant Fuel	5.1	5.0	5.3	5.3	5.2	5.1	5.2	0.1	0.2
L48 Pipeline Distribution	2.9	2.8	2.9	3.2	3.9	3.4	2.9	▼ -0.4	0.2
L48 Regional Gas Consumption	86.2	80.4	88.8	93.7	115.2	105.3	85.8	▼-19.4	5.4
Net LNG Exports	8.5	11.1	11.4	12.1	12.4	12.4	12.8	0.4	1.7
Total Mexican Exports	5.4	6.5	6.1	6.2	6.3	6.2	6.5	0.4	▲ 0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity	-1.9	-2.0	-5.3	-11.0	-32.6	-23.5	-5.3		
Daily Model Error									



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	DoD	vs. 7D
NRC Nuclear Daily Output	80.9	80.3	81.2	80.7	80.9	81.1	81.1	0.1	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	24.0	24.6	23.7	24.1	23.9	23.8	23.8	-0.1	-0.3
NRC % Nuclear Cap Utilization	82.3	81.7	82.6	82.1	82.3	82.4	82.5	0.1	0.3

Wind Generation Daily Average - MWh (EIA)

	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	DoD	vs. 7D
CALI Wind	2133	1205	2389	4439	2310	1350	1248	-102	-1056
TEXAS Wind	21634	13520	9277	21826	20711	21413	16027	-5387	-2037
US Wind	64962	56281	42567	71136	73186	73358	70966	-2392	7384

Generation Daily Average - MWh (EIA)

	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar	23-Mar	DoD	vs. 7D
US Wind	64962	56281	42567	71136	73186	73358	70966	-2392	7384
US Solar	12249	14530	11837	12003	14866	12892	12626	-266	-437
US Petroleum	690	894	566	689	832	950	1125	176	355
US Other	7150	6545	7467	8432	8263	6778	7327	548	-113
US Coal	74033	73254	78356	65922	67888	70833	70912	79	-802
US Nuke	84398	82584	84704	84317	82890	83996	85017	1021	1202
US Hydro	36331	34453	31637	29910	34734	34245	33951	-294	399
US Gas	122527	124405	125630	104762	117930	121008	131374	10366	11997

See National Wind and Nuclear daily charts

16.7

89.7



NRC Nuclear Outage

NRC % Nuclear Cap Utilization

Storage Week Average Generation Data

		•						
	18-Feb	25-Feb	4-Mar	11 -M ar	18-Mar	25-Mar	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output NRC Nuclear Max Capacity	88.2 104.9	86.9 104.9	85.8 104.9	82.3 104.9	80.9 104.9	80.9 104.9	0.0 0.0	0.0

19.1

87.2

22.5

83.7

23.9

82.3

24.0

82.3

18.0

88.3

Wind Generation Weekly Average - MWh (EIA)

Nuclear Generation Weekly Average - GWh (NRC)

	18-Feb	25-Feb	4-Mar	11-Mar	18-Mar	25-Mar	WoW	WoW Bcf/d Impact	
CALI Wind	1900	2049	815	2602	2297	2027	-270	0.0	
TEXAS Wind	16874	13068	6269	14469	17742	16972	-770	0.1	
US Wind	63118	60313	36019	56828	63173	65494	2321	-0.4	
							4%		
						0.0			
Generation Weekly Average - MWh (EIA)									

					est.				
	18-Feb	25-Feb	4-Mar	11-Mar	18-Mar	25-Mar	WoW	WoW Bcf/d	
								Impact	
US Wind	63118	60313	36019	56828	63173	65494	2321	-0.4	
US Solar	12313	11899	13919	12582	13773	13054	-719	0.1	
US Petroleum	4135	2961	3130	1742	961	883	-78	0.0	
US Other	9138	8211	7510	6621	7064	7448	385	-0.1	
US Coal	101701	99888	103399	86717	86015	71154	-14862	2.7	
US Nuke	92778	91458	90165	86462	84792	84075	-716	0.1	
US Hydro	31957	33214	32196	34570	34884	33269	-1615	0.3	
US Gas	137980	147276	158688	140400	137027	122355	-14672	2.6	

See National Wind and Nuclear daily charts



Monthly Average Generation Data

Nuclear Generation Monthly Average -	GWh (Ni	RC)						
2Yr Ago	LY	,			MTD			
Same 30 days	Same 30 days	Dec-21	Jan-22	Feb-22	Mar-22	Last 30 days	MoM (MTD vs LY)	La day

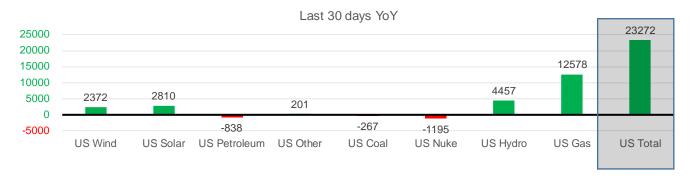
	Same 30 days	Same 30 days	Dec-21	Jan-22	Feb-22	Mar-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
NRC Nuclear Daily Output	83.5	83.2	90.3	90.2	87.6	81.9	82.6	-5.7	-0.6
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0
NRC Nuclear Outage	21.4	21.7	14.6	14.7	17.3	23.0	22.3	5.7	0.6
NRC % Nuclear Cap Utilization	84.9	84.6	91.8	91.7	89.0	83.2	84.0	-5.8	-0.6

Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD				
	Same 30 days	Same 30 days	Dec-21	Jan-22	Feb-22	Mar-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY	
CALI Wind	1226	2383	1482	1244	1559	2097	1876	539	-508	
TEXAS Wind	9793	13591	12927	11355	12294	15212	13571	2918	-19	
US Wind	38400	52441	54708	51045	56539	59078	54813	2539	2372	

Generation Monthly Average - MWh (EIA)

Ocheration monthly Average		~)							
	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Dec-21	Jan-22	Feb-22	Mar-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	38400	52441	54708	51045	56539	59078	54813	▼ -4264.9	2372
US Solar	7332	10434	7375	9476	12088	13301	13244	▼ -56.4	2810
US Petroleum	3382	2591	3135	5021	3451	1412	1754	342	▼ -838
US Other	7091	7028	8222	8792	8832	7011	7228	218	201
US Coal	72343	87626	81462	117971	106588	82711	87359	4648	▼ -267
US Nuke	85157	87683	95449	95259	92280	85637	86488	850	▼ -1195
US Hydro	32770	29270	30824	34040	32213	34069	33727	▼ -342	4457
US Gas	156038	128751	152639	164024	152058	134895	141330	1395	12578
US Total	400792	404298	433931	485812	464578	419981	427570	~ 7054	23272



See National Wind and Nuclear daily charts



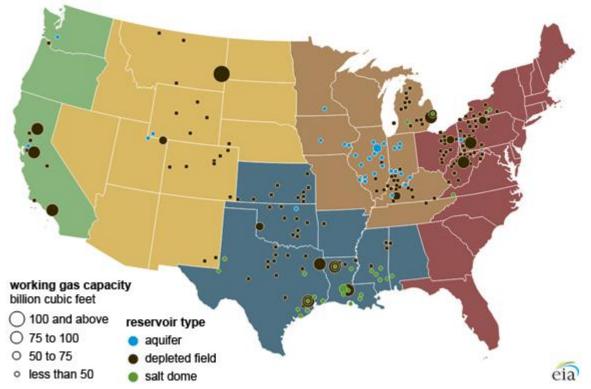
Regional S/D Models Storage Projection

Week Ending 25-Mar

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	3.1	0.0	3.1	22
East	-2.4	2.1	-0.2	-2
Midwest	1.1	-0.4	0.7	5
Mountain	3.5	-3.7	-0.2	-2
South Central	0.4	1.9	2.3	16
Pacific	0.5	0.2	0.7	5

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

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



15-Apr



Weather Model Storage Projection

Next report and beyond		
Week Ending	GWDDs	Week Storage Projection
25-Mar	11	22
01-Apr	16	-44
08-Apr	We will switch	to the

Weather Storage Model - Next 4 Week Forecast

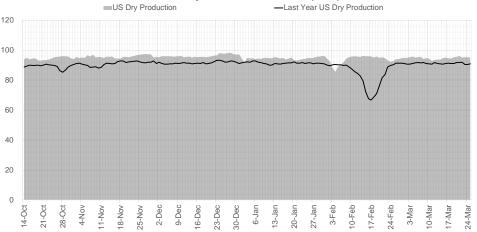
summer model next week



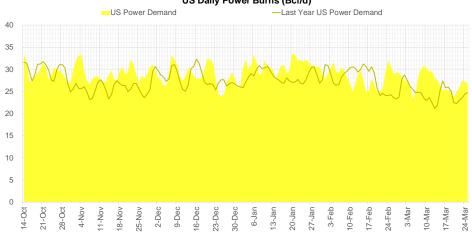


Supply - Demand Trends

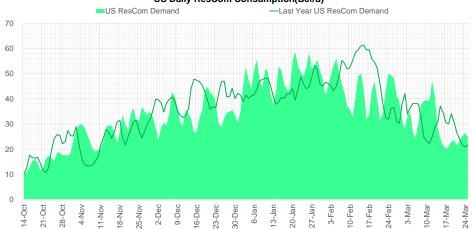
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



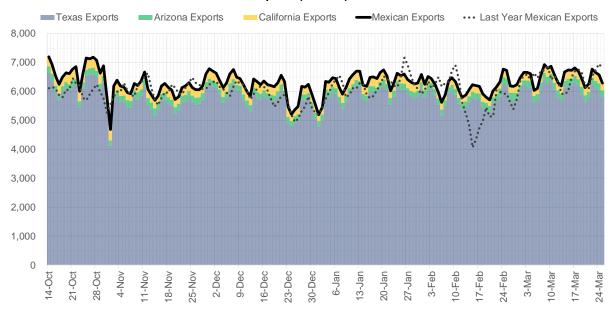
US Daily ResCom Consumption(Bcf/d)



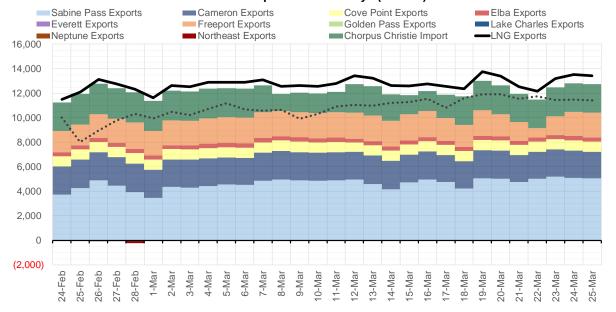
Source: Bloomberg



Mexican Exports (MMcf/d)



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



Source: Bloomberg





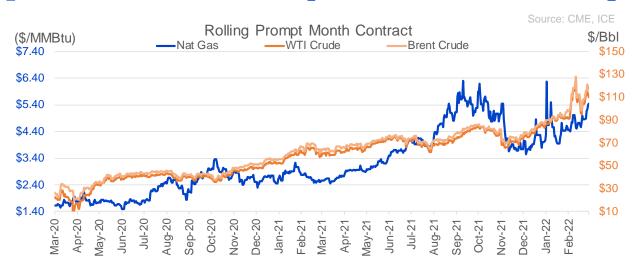
Nat Gas Options Volume and Open Interest CME and ICE Combined

	CONTRACT	PUT/CALL	STRIKE	CUMULATIVE	C	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
MONTH	YEAR			VOL		WONTH	TEAR			
4	2022	С	6.00	6869		4	2022	Р	3.50	34160
4	2022	С	5.50	6034		4	2022	С	4.75	30105
7	2022	С	6.00	5253		10	2022	С	6.00	29179
9	2022	С	7.00	4501		4	2022	Р	3.00	28297
7	2022	С	6.50	4423		4	2022	С	5.00	27926
10	2022	Р	3.00	4216		4	2022	С	6.00	26084
9	2022	С	6.00	4185		10	2022	С	5.00	26039
8	2022	С	6.00	3933		4	2022	Р	4.00	24926
4	2022	С	5.75	3401		5	2022	Р	4.00	24719
4	2022	Р	5.00	3361		4	2022	P	3.75	23646
6	2022	С	6.00	2921		6	2022	С	6.00	23378
5	2022	Р	4.25	2865		5	2022	С	6.00	23312
8	2022	С	7.00	2859		4	2022	P	4.50	23110
5	2022	С	6.00	2349		5	2022	P	3.00	22913
5	2022	Р	4.50	2085		5	2022	С	5.00	22347
10	2022	Р	3.50	2084		7	2022	С	6.00	21742
10	2022	С	6.00	2001		9	2022	С	6.00	21300
4	2022	С	5.25	1989		6	2022	P	4.00	21262
5	2022	Р	4.00	1844		8	2022	С	6.00	20959
5	2022	Р	4.90	1779		10	2022	P	3.00	20950
4	2022	Р	4.75	1761		5	2022	P	2.50	19874
5	2022	Р	3.50	1712		5	2022	P	3.50	19460
5	2022	Р	4.75	1632		4	2022	С	5.50	19242
4	2022	С	5.00	1551		5	2022	С	7.00	17984
4	2022	P	5.10	1504		6	2022	С	5.00	17885
4	2022	P	4.90	1399		12	2022	C	5.00	17768
4	2022	P	5.25	1301		5	2022	P	2.75	17685
8	2022	C	8.00	1282		4	2022	С	4.50	17621
1	2023	Č	10.00	1280		7	2022	P	3.25	17613
7	2022	P	4.00	1279		4	2022	С	3.00	17511
7	2022	C	7.50	1250		6	2022	P	3.00	17505
6	2022	P	4.75	1239		4	2022	P	2.50	17245
5	2022	Ċ	5.50	1202		4	2022	P	4.25	17140
10	2022	Č	7.00	1197		10	2022	P	2.50	16881
6	2022	Č	7.00	1151		4	2022	P	3.25	15846
6	2022	P	4.00	1133		10	2022	P	4.00	15754
6	2022	C	5.50	1104		6	2022	P	3.50	15567
6	2022	C	5.75	1104		10	2022	С	7.00	15556
9	2022	P	5.00	1078		4	2022	С	8.00	15546
5	2022	P	3.75	1078		9	2022	P	2.50	15136
5	2022	P	5.25	1039		10	2022	P	3.50	15041
9	2022	C	8.00	1023		9	2022	P	2.75	14933
						6	2022	P	3.75	14860
6 7	2022 2022	C C	5.90	1016		5	2022	P	3.75	14852
9		P	8.00	1012		8	2022	С	7.00	14765
	2022	P P	2.50	1000		10	2022	P	2.00	14571
9	2022		2.75	1000		8	2022	P	3.00	14497
4	2022	P	4.85	980		4	2022	С	7.00	14331
4	2022	P	4.50	948		7	2022	P	3.00	14149
5	2022	С	5.25	902		6	2022	Source	: CME, ICE	14045

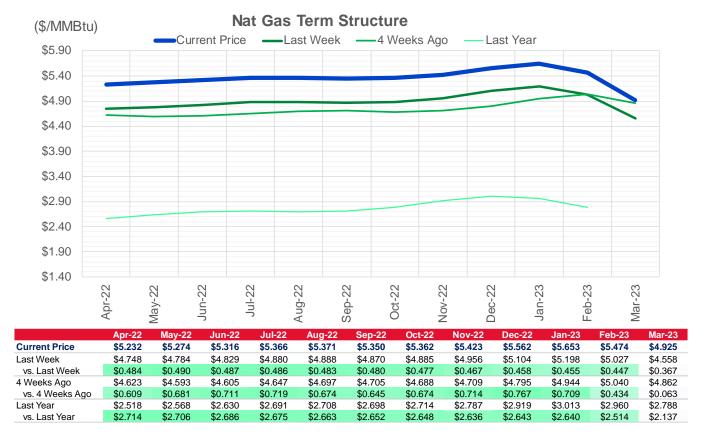
Nat Gas Futures Open Interest

CME and ICE Combined

CME Henry I	Hub Futures (10	u)	ICE Henry Hub Futures Contract Equivalent (10,000 MM					
	Current	Prior	Daily Change		Current	Prior	Daily Change	
APR 22	19344	28764	-9420	APR 22	75775	76403	-629	
MAY 22	232058	229048	3010	MAY 22	84546	83541	1005	
JUN 22	72216	71762	454	JUN 22	70934	71244	-310	
JUL 22	93184	91543	1641	JUL 22	67543	67084	459	
AUG 22	45162	43914	1248	AUG 22	60719	60682	37	
SEP 22	77208	76461	747	SEP 22	64718	64840	-123	
OCT 22	81314	79642	1672	OCT 22	69351	69176	176	
NOV 22	42708	42996	-288	NOV 22	53694	53862	-168	
DEC 22	46233	46346	-113	DEC 22	63118	63171	-52	
JAN 23	63600	62379	1221	JAN 23	66073	65006	1067	
FEB 23	20606	20393	213	FEB 23	46033	45669	365	
MAR 23	37543	38023	-480	MAR 23	50817	50742	75	
APR 23	47123	46553	570	APR 23	49851	49274	577	
MAY 23	28255	27902	353	MAY 23	43959	44001	-42	
JUN 23	15734	15665	69	JUN 23	41252	41005	247	
JUL 23	13884	13676	208	JUL 23	40484	40257	228	
AUG 23	10925	10996	-71	AUG 23	40106	39777	328	
SEP 23	13910	13616	294	SEP 23	39973	39740	233	
OCT 23	25673	24702	971	OCT 23	44266	44138	128	
NOV 23	10509	10518	-9	NOV 23	40928	40925	3	
DEC 23	14240	14219	21	DEC 23	36200	36194	6	
JAN 24	18668	18511	157	JAN 24	32487	32287	201	
FEB 24	4183	4169	14	FEB 24	22821	22727	94	
MAR 24	15051	14568	483	MAR 24	27930	27674	256	
APR 24	7881	7896	-15	APR 24	21163	20959	204	
MAY 24	2280	2356	-76	MAY 24	19709	19642	67	
JUN 24	1304	1199	105	JUN 24	19913	19770	143	
JUL 24	1489	1489	0	JUL 24	20312	20164	147	
AUG 24	1556	1576	-20	AUG 24	20478	20330	147	
SEP 24	1204	1204	0	SEP 24	19610	19538	72	







		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	4.71	4.89	0.18
TETCO M3	\$/MMBtu	4.42	4.23	-0.19
FGT Zone 3	\$/MMBtu	4.37	5.00	0.63
Zone 6 NY	\$/MMBtu	4.37	4.19	-0.18
Chicago Citygate	\$/MMBtu	4.81	4.74	-0.07
Michcon	\$/MMBtu	4.85	4.75	-0.10
Columbia TCO Pool	\$/MMBtu	4.29	4.32	0.03
Ventura	\$/MMBtu	4.62	4.66	0.04
Rockies/Opal	\$/MMBtu	4.53	4.44	-0.09
El Paso Permian Basin	\$/MMBtu	4.50	4.20	-0.30
Socal Citygate	\$/MMBtu	4.75	4.49	-0.27
Malin	\$/MMBtu	4.28	4.50	0.22
Houston Ship Channel	\$/MMBtu	5.00	4.73	-0.27
Henry Hub Cash	\$/MMBtu	5.26	4.68	-0.58
AECO Cash	C\$/GJ	4.20	3.87	-0.33
Station2 Cash	C\$/GJ	4.02	4.30	0.28
Dawn Cash	C\$/GJ	4.88	4.79	-0.09

Source: CME, Bloomberg

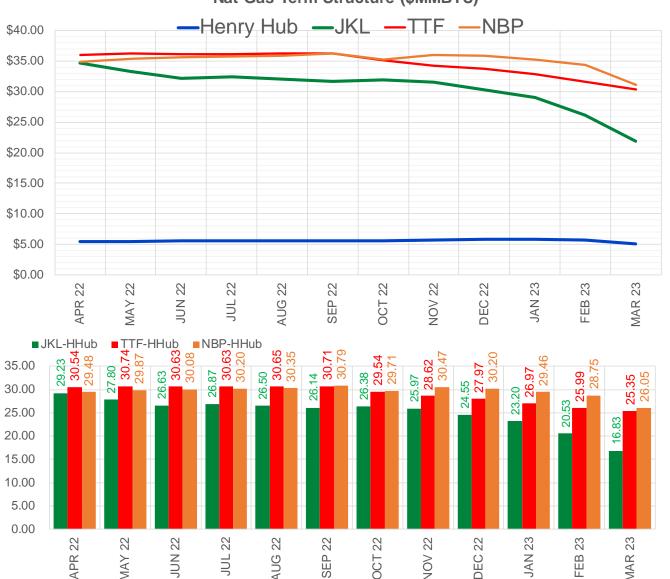




				vs. 4 Weeks	
	Units	Current Price	vs. Last Week	Ago	vs. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224	0.000	0.000	2.208
NatGas Oct21/Nov21	\$/MMBtu	0.361	0.000	0.000	a 0.290
NatGas Oct21/Jan22	\$/MMBtu	-1.817	0.000	0.000	▼ -2.107
NatGas Apr22/Oct22	\$/MMBtu	0.128	0.003	2 0.008	a 0.083
WTI Crude	\$/Bbl	112.34	9.360	19.530	53.780
Brent Crude	\$/BbI	119.03	12.390	19.950	57.080
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	0.000	0.000	0.000
Heating Oil	cents/Gallon	415.34	66.600	125.650	240.560
Propane, Mt. Bel	cents/Gallon	1.45	0.043	0.129	a 0.527
Ethane, Mt. Bel	cents/Gallon	0.43	0.004	0.027	a 0.210
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)



	APR 22	MAY 22	JUN 22	JUL 22	AUG 22	SEP 22	OCT 22	NOV 22	DEC 22	JAN 23	FEB 23	MAR 23
Henry Hub	\$5.455	\$5.495	\$5.534	\$5.582	\$5.596	\$5.559	\$5.584	\$5.625	\$5.771	\$5.866	\$5.664	\$5.073
JKL	\$34.680	\$33.295	\$32.165	\$32.450	\$32.100	\$31.700	\$31.960	\$31.595	\$30.325	\$29.070	\$26.195	\$21.905
JKL-HHub	\$29.225	\$27.800	\$26.631	\$26.868	\$26.504	\$26.141	\$26.376	\$25.970	\$24.554	\$23.204	\$20.531	\$16.832
TTF	\$35.998	\$36.234	\$36.161	\$36.209	\$36.244	\$36.265	\$35.121	\$34.248	\$33.742	\$32.836	\$31.658	\$30.427
TTF-HHub	\$30.543	\$30.739	\$30.627	\$30.627	\$30.648	\$30.706	\$29.537	\$28.623	\$27.971	\$26.970	\$25.994	\$25.354
NBP	\$34.939	\$35.366	\$35.616	\$35.784	\$35.941	\$36.345	\$35.294	\$36.095	\$35.970	\$35.326	\$34.415	\$31.127
NBP-HHub	\$29.484	\$29.871	\$30.082	\$30.202	\$30.345	\$30.786	\$29.710	\$30.470	\$30.199	\$29.460	\$28.751	\$26.054



Weather Storage Model - Next 4 Week Forecast

