

14 January 2022



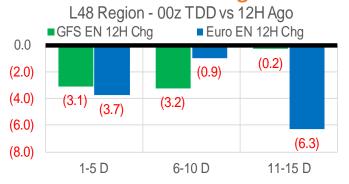
	Current	Δ from YD	Δ from Avg	7D
WTI Prompt	\$ 82.2	5 📤 \$ 0.13	\$ 2	2.1

	_	urrant	Λ fr	m VD	∆ fror	n 7D
	Current	Δ 110	טו וווע	Avg		
Brent Prompt	\$	84.88	4	0.41	\$	2.2

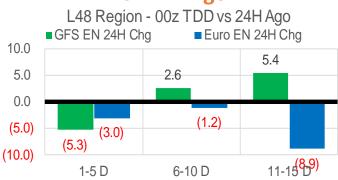
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Nat Gas Futures Open Interest
Price Summary

Vs. 12H Ago



Vs. 24H Ago



	Current	Δ from YD	Δ from 7D Avg
US Dry Production	95.1	- 0.69	▼ -0.33

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	27.8	▼ -1.95	▼ -2.56

	Current	Δ from YD	Δ from 7D Avg
US ResComm	41.8	4.48	▼ -5.34

	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	6.8	a 0.27	a 0.20

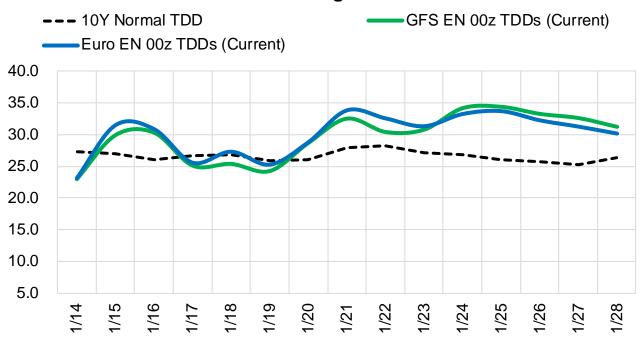
	Current	Δ from YD	Δ from 7D Avg		
Net LNG Exports	13.0	0.48	a 0.66		

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.5	▼ -0.23	0.16

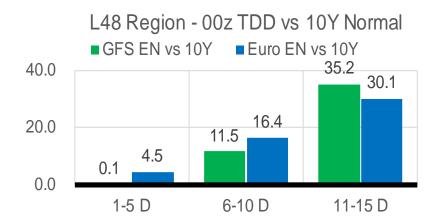


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	14-Jan	DoD	vs. 7D
Lower 48 Dry Production	95.1	95.7	95.5	95.3	95.2	95.8	95.1	-0.7	-0.4
Canadian Imports	6.5	6.5	7.0	6.7	6.4	6.5	6.8	0.3	0.2
L48 Power	28.8	29.6	31.9	30.5	30.3	29.7	27.8	-2.0	-2.3
L48 Residential & Commercial	48.0	44.4	52.2	50.9	41.4	37.4	41.8	4.5	-3.8
L48 Industrial	25.8	25.5	26.2	25.6	24.5	24.0	24.0	0.0	-1.3
L48 Lease and Plant Fuel	5.2	5.2	5.2	5.2	5.2	5.2	5.2	-0.1	0.0
L48 Pipeline Distribution	3.7	3.6	4.1	3.9	3.5	3.3	3.4	0.1	-0.3
L48 Regional Gas Consumption	111.4	108.3	119.5	116.1	104.9	99.5	102.2	2.6	-7.8
Net LNG Delivered	12.07	12.17	12.29	12.07	12.95	12.51	12.99	0.5	0.6
Total Mexican Exports	5.9	6.0	6.3	6.7	6.6	6.7	6.5	-0.2	0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	-27.7	-24.3	-35.6	-32.9	-22.7	-16.5	-19.8		
Daily Model Lift									

EIA Storage Week Balances

	10-Dec	17-Dec	24-Dec	31-Dec	7-Jan	14-Jan	WoW	vs. 4W
Lower 48 Dry Production	96.6	96.4	96.7	98.7	95.4	95.4	▼ 0.0	▼-1.4
Canadian Imports	5.3	4.6	5.0	4.2	5.7	6.6	▲ 0.9	1.7
L48 Power	29.1	28.4	29.9	26.4	29.9	30.3	0.4	1.6
L48 Residential & Commercial	35.4	31.4	40.3	33.4	44.3	47.2	2.9	9 .9
L48 Industrial	23.7	23.7	24.0	22.2	26.1	25.6	▼ -0.6	1.6
L48 Lease and Plant Fuel	5.2	5.2	5.2	5.4	5.2	5.2	0.0	▼ 0.0
L48 Pipeline Distribution	3.2	3.0	3.5	3.0	3.6	3.8	0.1	0.5
L48 Regional Gas Consumption	96.7	91.7	103.0	90.4	109.1	112.0	2.9	▲13.5
Net LNG Exports	12.0	11.9	12.7	12.3	11.9	12.3	0.4	0.2
Total Mexican Exports	6.4	6.2	6.1	5.8	5.9	6.3	0.4	0.3
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	-13.2 -12.6 -0.6	-8.8 -7.9 -0.9	-20.0 -19.4 -0.5	-5.5 -4.4 -1.1	-25.9 -25.6 -0.3	-28.8	-2.9	

Monthly Balances									
•	2Yr Ago	LY					MTD		
	Jan-20	Jan-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	MoM	vs. LY
Lower 48 Dry Production	94.6	91.4	93.4	94.3	95.9	97.1	95.2	▼ -1.9	3.8
Canadian Imports	4.8	6.3	5.1	5.4	5.3	4.8	6.3	1.5	▼ 0.0
L48 Power	29.9	28.3	33.1	30.5	28.8	28.4	30.5	2.1	2.2
L48 Residential & Commercial	41.7	44.0	8.8	12.5	29.4	34.4	46.9	12.4	2 .9
L48 Industrial	24.5	23.8	20.2	21.0	22.4	23.3	26.0	2.7	2.2
L48 Lease and Plant Fuel	5.1	5.0	5.1	5.2	5.2	5.3	5.2	▼ -0.1	0.2
L48 Pipeline Distribution	3.6	3.5	2.3	2.4	3.1	3.1	3.8	0.6	0.2
L48 Regional Gas Consumption	104.8	104.6	69.4	71.5	88.9	94.5	112.3	▲17.8	7.7
Net LNG Exports	8.4	10.5	10.3	10.6	11.4	12.1	12.1	▲ 0.0	1.6
Total Mexican Exports	5.1	6.2	6.7	6.6	6.1	6.1	6.2	▲ 0.0	▲ 0.0
Implied Daily Storage Activity EIA Reported Daily Storage Activity	-18.9	-23.5	12.1	11.0	-5.2	-11.0	-29.2		
	-18.9	-23.5	12.1	11.0	-5.2	-11.0	-29.2		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	DoD	vs. 7D
NRC Nuclear Daily Output	91.3	90.8	89.8	89.9	90.1	90.6	91.5	0.9	1.1
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	13.6	14.1	15.0	15.0	14.7	14.3	13.4	-0.9	-1.1
NRC % Nuclear Cap Utilization	92.8	92.3	91.4	91.4	91.7	92.1	93.1	0.9	1.1

Wind Generation Daily Average - MWh (EIA)

	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	DoD	vs. 7D
CALI Wind	531	2678	1616	1229	885	906	640	-266	-667
TEXAS Wind	13037	11809	16261	17906	7450	10479	4804	-5675	-8019
US Wind	52508	53629	72018	62716	35807	60522	41284	-19238	-14916

Generation Daily Average - MWh (EIA)

	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	DoD	vs. 7D
US Wind	52508	53629	72018	62716	35807	60522	41284	-19238	-14916
US Solar	9100	9385	9072	7742	8376	9830	9452	-378	535
US Petroleum	4404	6080	4176	3920	5593	5655	4536	-1119	-436
US Other	8486	8780	8915	8462	9254	7621	7503	-117	-1083
US Coal	109891	122329	111336	102491	121431	117540	116879	-661	2709
US Nuke	96549	95542	95132	94745	95413	96120	96705	585	1121
US Hydro	35264	35865	34488	31854	35281	34949	33647	-1302	-970
US Gas	171322	178489	141233	130575	172632	171160	167218	-3942	6316

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear Ge	neration	Weekly	Average -	GW h	(NRC)
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	10-Dec	17-Dec	24-Dec	31-Dec	7-Jan	14-Jan	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	88.0	90.0	92.1	92.1	91.3	90.6	-0.7	0.1
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	16.9	14.9	12.8	12.8	13.6	14.3	0.7	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

Wind Generation Weekly Average - MWh (EIA)

	10-Dec	17-Dec	24-Dec	31-Dec	7-Jan	14-Jan	WoW	Bcf/d Impact
CALI Wind	1263	1709	943	2591	1603	1228	-375	0.1
TEXAS Wind	12216	16176	11007	13891	13603	10502	-3101	0.6
US Wind	51470	68412	48727	53102	57155	52466	-4689	8.0
					4052.9			
					8%			

Generation Weekly Average - MWh (EIA)

	10-Dec	17-Dec	24-Dec	31-Dec	7-Jan	14-Jan	WoW	WoW Bcf/d Impact
US Wind	51470	68412	48727	53102	57155	52466	-4689	0.8
US Solar	7413	7570	7098	6957	8405	9044	639	-0.1
US Petroleum	3440	2700	3581	3084	3038	4928	1890	-0.3
US Other	8398	8301	8532	7584	8269	8291	22	0.0
US Coal	82743	76931	87373	80019	94990	115555	20565	-3.7
US Nuke	92983	95054	97422	97083	96342	95766	-576	0.1
US Hydro	29626	30257	32560	31279	34498	34247	-251	0.0
US Gas	159457	148807	166457	135613	154208	161218	7009	

See National Wind and Nuclear daily charts



Monthly Average Generation Data

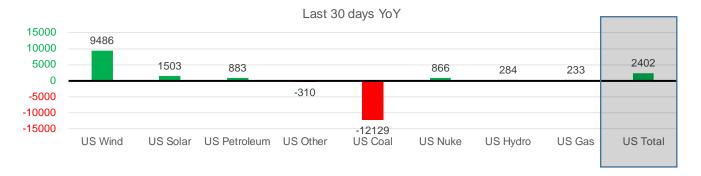
Nuclear Generation Monthly Average - GWh (NRC)									
	2Yr Ago	2Yr Ago LY					MTD		
	Same 30 days	Same 30 days	Oct-21	Nov-21	Dec-21	Jan-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
NRC Nuclear Daily Output	94.1	90.6	75.5	82.7	90.3	90.9	91.5	0.6	1.0
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0
NRC Nuclear Outage	10.8	14.3	29.4	22.2	14.6	13.0	12.9	-1.6	-1.4
NRC % Nuclear Cap Utilization	95.7	92.1	76.8	84.1	91.8	92.5	93.1	0.7	1.0

Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Oct-21	Nov-21	Dec-21	Jan-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	1236	935	1765	1252	1585	1250	1568	-335	633
TEXAS Wind	10214	11413	11565	11869	12927	11405	11933	-1522	520
US Wind	40966	43168	43142	49974	54822	53867	52653	-956	9486

Generation Monthly Average - MWh (EIA)

Concration monthly fiverage	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Oct-21	Nov-21	Dec-21	Jan-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	40966	43168	43142	49974	54822	53867	52653	▼-1213.3	9486
US Solar	4688	6417	11059	9690	7376	8988	7920	▼- 1068.2	1503
US Petroleum	3594	2777	3239	3045	3134	4146	3661	-485	883
US Other	8530	8464	11109	8435	8214	8267	8154	▼ -113	▼ -310
US Coal	81164	106789	84432	80848	81680	107804	94661	▼- 13144	▼-12129
US Nuke	97365	95796	77089	87404	95408	96075	96662	587	866
US Hydro	30106	32805	24078	26593	30805	34373	33089	▼ -1284	284
US Gas	147471	154520	159049	151462	152400	160252	154753	▼- 16720	233
US Total	423441	449360	413353	417925	434097	473948	451762	▼-32226	2402



See National Wind and Nuclear daily charts



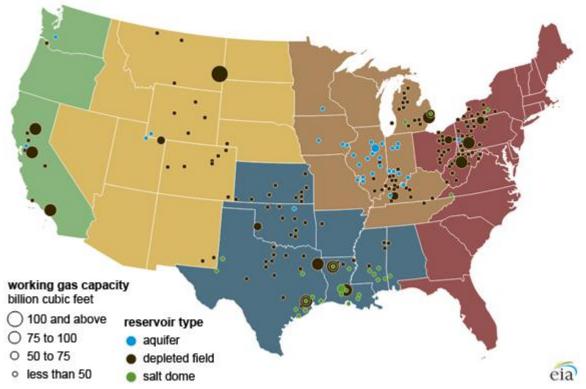
Regional S/D Models Storage Projection

Week Ending 14-Jan

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-29.0	0.9	-28.1	-197
East	-11.2	2.5	-8.8	-61
Midwest	-7.9	0.1	-7.8	-55
Mountain	2.0	-2.9	-1.0	-7
South Central	-11.6	2.0	-9.6	-67
Pacific	-0.2	-0.8	-0.9	-6

^{*}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
14-Jan	27	-197
21-Jan	28	-189
28-Jan	32	-250
04-Feb	27	-181

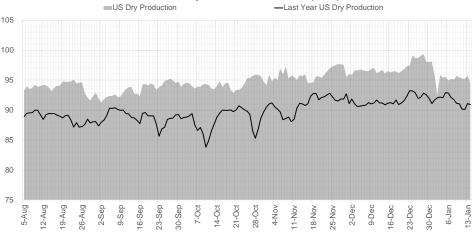
Weather Storage Model - Next 4 Week Forecast



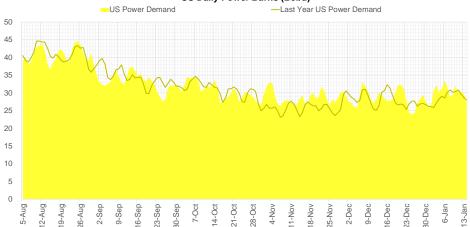


Supply - Demand Trends

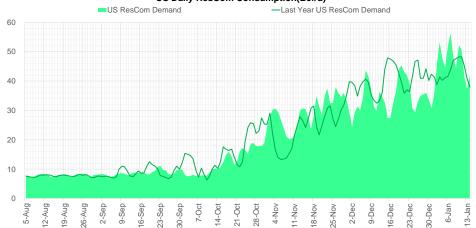
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



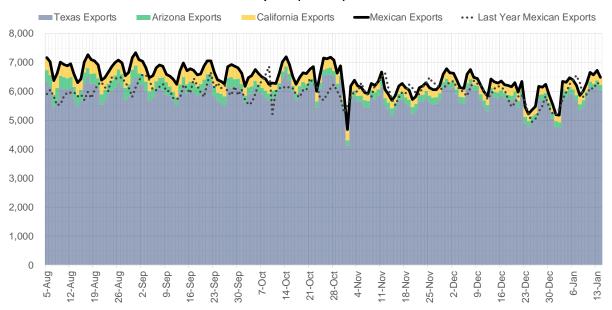
US Daily ResCom Consumption(Bcf/d)



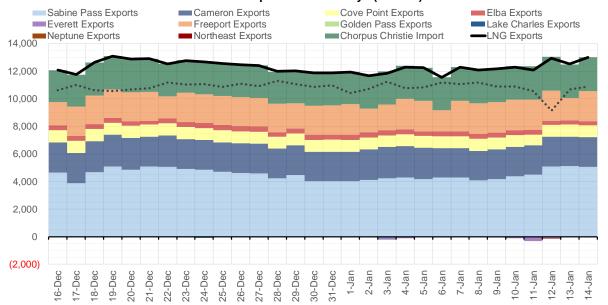
Source: Bloomberg



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

ICE Data was not updated today

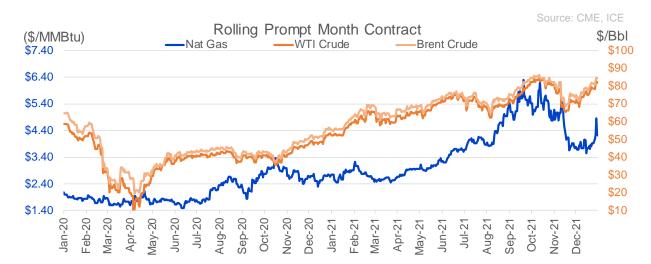
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
2	2022	С	5.00	6743	3	2022	С	10.00	34315
2	2022	С	6.00	6249	3	2022	С	5.00	34183
3	2022	Р	3.00	4283	3	2022	С	8.00	28283
3	2022	Р	3.75	4030	2	2022	С	4.00	27712
3	2022	С	6.00	3786	2	2022	С	5.00	24956
3	2022	C	4.00	3574	3	2022	С	4.00	24788
3	2022	C	5.00	3143	2	2022	Р	3.50	21724
2	2022	Č	4.50	3114	3	2022	Р	2.50	21492
3	2022	P	2.75	3030	2	2022	С	6.00	21164
2	2022	P	4.00	2836	12	2022	С	5.00	20932
2	2022	Ċ	7.00	2724	3	2022	Р	3.00	20550
3	2022	P	4.00	2688	2	2022	Р	4.00	20075
2	2022	Р	3.75	2585	10	2022	С	6.00	19780
2	2022	Р	4.25	2554	4	2022	С	3.00	19710
3	2022	Р	3.25	2368	4	2022	С	5.00	19579
3	2022	Р	3.50	2231	3	2022	С	6.00	18897
2	2022	C	5.50	2103	3	2022	Р	4.00	17178
2	2022	Č	4.75	2037	5	2022	Р	3.00	17069
2	2022	P	3.35	2008	3	2022	Р	3.50	16783
2	2022	C	6.50	1870	6	2022	С	5.00	16690
2	2022	C	5.75	1812	4	2022	Р	2.50	16463
4	2022	C	6.00	1780	3	2022	С	7.00	16413
3	2022	C	7.50	1743	4	2022	Р	3.00	16193
2	2022	C	7.50 5.25	1697	2	2022	С	4.50	16093
2	2022	C	8.00	1624	10	2022	С	5.00	15453
2	2022	C	4.25	1583	3	2022	Р	2.00	14985
4	2022	C			2	2022	Р	3.00	14870
5	2022	C	5.00	1574	3	2022	С	4.50	14843
5 4			7.00	1554	2	2022	С	10.00	14444
-	2022	C C	7.00	1550	2	2022	Р	3.75	14095
6	2022		7.00	1550	2	2022	С	4.25	14044
7	2022	С	7.00	1550	10	2022	Р	2.00	13921
8	2022	С	7.00	1550	3	2022	Р	2.25	13917
9	2022	С	7.00	1550	4	2022	С	4.00	13905
10	2022	С	7.00	1550	2	2022	С	8.00	13749
5	2022	С	6.00	1522	5	2022	С	3.00	13733
2	2022	Р	4.50	1499	5	2022	С	5.00	13664
10	2022	С	6.00	1475	5	2022	Р	2.50	13598
3	2022	С	4.50	1412	3	2022	Р	5.00	13591
6	2022	С	6.00	1275	10	2022	Р	3.00	13531
7	2022	С	6.00	1275	2	2022	С	7.00	13463
8	2022	C	6.00	1275	6	2022	С	3.00	13438
9	2022	С	6.00	1275	12	2022	С	4.50	13307
10	2022	P	3.00	1275	2	2022	С	5.50	13305
3	2022	C	8.00	1250	3	2022	С	3.00	13267
4	2022	Р	4.00	1212	12	2022	С	5.25	13263
5	2022	С	4.50	1200	3	2022	С	3.50	13245
3	2022	С	7.00	1188	7	2022	С	3.00	13230
10	2022	Р	3.50	1140	8	2022	С	3.00	13226
3	2022	С	10.00	1120	9	2022	C Source	: CME, ICE	13225



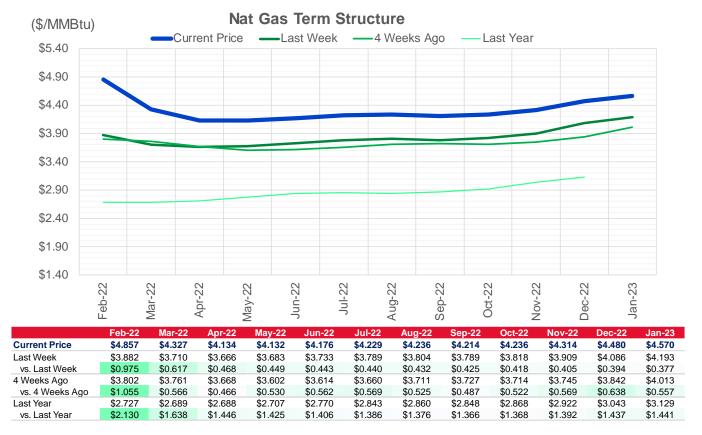
Nat Gas Futures Open Interest CME and ICE Combined

ICE Data was not updated today

CME Henry	Hub Futures (1)	0,000 MMBt	u)	ICE Henry H	Hub Futures Con	tract Equiva	alent (10,000 MM
	Current	Prior	Daily Change	,	Current	Prior	Daily Change
FEB 22	73755	86453	-12698	FEB 22	76211	78252	-2041
MAR 22	270397	272457	-2060	MAR 22	92287	89961	2327
APR 22	85828	88719	-2891	APR 22	74211	74627	-416
MAY 22	111180	115893	-4713	MAY 22	69306	67311	1996
JUN 22	59903	59014	889	JUN 22	56458	54986	1473
JUL 22	59774	58790	984	JUL 22	60047	59660	388
AUG 22	37689	37096	593	AUG 22	56662	55728	934
SEP 22	48876	49039	-163	SEP 22	57469	56791	678
OCT 22	83530	82042	1488	OCT 22	62272	62180	92
NOV 22	36636	36336	300	NOV 22	51962	51762	200
DEC 22	38483	37928	555	DEC 22	61272	60657	615
JAN 23	50840	49103	1737	JAN 23	49375	49421	-46
FEB 23	15195	14594	601	FEB 23	38960	38000	960
MAR 23	30785	30360	425	MAR 23	43934	42473	1460
APR 23	31325	29533	1792	APR 23	45058	44015	1043
MAY 23	16545	16322	223	MAY 23	37867	36874	993
JUN 23	10849	10859	-10	JUN 23	35597	34187	1410
JUL 23	9915	9442	473	JUL 23	34984	33527	1457
AUG 23	6581	6386	195	AUG 23	34668	33693	975
SEP 23	9220	9368	-148	SEP 23	34407	33004	1403
OCT 23	13082	12281	801	OCT 23	37579	36616	963
NOV 23	8549	8284	265	NOV 23	37150	36637	513
DEC 23	10730	10017	713	DEC 23	34010	33679	331
JAN 24	7038	6643	395	JAN 24	24033	23734	300
FEB 24	1787	1777	10	FEB 24	17446	17164	281
MAR 24	10094	10088	6	MAR 24	23366	23104	262
APR 24	5569	5568	1	APR 24	16521	16204	317
MAY 24	2077	2069	8	MAY 24	16906	16562	343
JUN 24	921	921	0	JUN 24	17041	16728	313
JUL 24	563	563	0	JUL 24	17655	17332	324







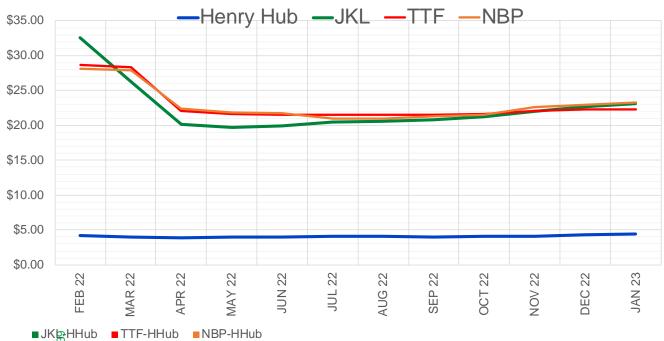
		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	18.00	17.79	-0.21
TETCO M3	\$/MMBtu	8.42	6.81	-1.61
FGT Zone 3	\$/MMBtu	12.34	4.00	-8.34
Zone 6 NY	\$/MMBtu	12.34	8.33	-4.01
Chicago Citygate	\$/MMBtu	4.43	5.00	0.57
Michcon	\$/MMBtu	4.37	3.72	-0.65
Columbia TCO Pool	\$/MMBtu	4.20	3.39	-0.81
Ventura	\$/MMBtu	4.43	5.97	1.54
Rockies/Opal	\$/MMBtu	5.10	4.42	-0.68
El Paso Permian Basin	\$/MMBtu	4.29	3.97	-0.32
Socal Citygate	\$/MMBtu	5.34	5.57	0.23
Malin	\$/MMBtu	4.96	4.40	-0.56
Houston Ship Channel	\$/MMBtu	4.51	4.00	-0.51
Henry Hub Cash	\$/MMBtu	4.75	3.77	-0.98
AECO Cash	C\$/GJ	3.63	3.30	-0.33
Station2 Cash	C\$/GJ	3.51	5.45	1.94
Dawn Cash	C\$/GJ	4.43	3.95	-0.48

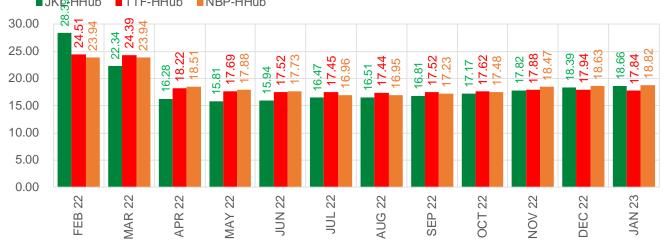
Source: CME, Bloomberg



						4 Weeks		
					V	s. 4 Weeks		
	Units	Current Price	VS.	Last Week		Ago	VS	s. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224		0.000		0.000		2.197
NatGas Oct21/Nov21	\$/MMBtu	0.361		0.000		0.000		0.303
NatGas Oct21/Jan22	\$/MMBtu	-1.817		0.000		0.258		-2.091
NatGas Apr22/Oct22	\$/MMBtu	0.148		-0.008	•	-0.001		0.127
WTI Crude	\$/Bbl	82.12		2.660		9.740		28.550
Brent Crude	\$/Bbl	84.47		2.480		9.450		28.050
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	260.85		13.080		34.220		98.910
Propane, Mt. Bel	cents/Gallon	1.15		0.045		0.112		0.232
Ethane, Mt. Bel	cents/Gallon	0.37		0.017		0.040		0.137
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)





	FEB 22	MAR 22	APR 22	MAY 22	JUN 22	JUL 22	AUG 22	SEP 22	OCT 22	NOV 22	DEC 22	JAN 23
Henry Hub	\$4.211	\$3.980	\$3.899	\$3.931	\$3.991	\$4.048	\$4.060	\$4.039	\$4.062	\$4.147	\$4.322	\$4.418
JKL	\$32.605	\$26.315	\$20.180	\$19.745	\$19.935	\$20.520	\$20.570	\$20.845	\$21.230	\$21.965	\$22.715	\$23.080
JKL-HHub	\$28.394	\$22.335	\$16.281	\$15.814	\$15.944	\$16.472	\$16.510	\$16.806	\$17.168	\$17.818	\$18.393	\$18.662
TTF	\$28.724	\$28.372	\$22.121	\$21.621	\$21.513	\$21.499	\$21.498	\$21.558	\$21.684	\$22.031	\$22.261	\$22.259
TTF-HHub	\$24.513	\$24.392	\$18.222	\$17.690	\$17.522	\$17.451	\$17.438	\$17.519	\$17.622	\$17.884	\$17.939	\$17.841
NBP	\$28.147	\$27.922	\$22.413	\$21.806	\$21.719	\$21.005	\$21.007	\$21.269	\$21.540	\$22.614	\$22.954	\$23.239
NBP-HHub	\$23.936	\$23.942	\$18.514	\$17.875	\$17.728	\$16.957	\$16.947	\$17.230	\$17.478	\$18.467	\$18.632	\$18.821



Weather Storage Model - Next 4 Week Forecast

