

13 January 2022



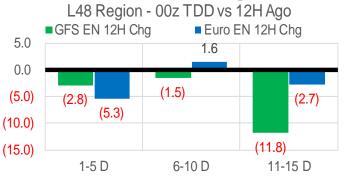
	Current	Δ from YD	Δ from Avg	
WTI Prompt	\$ 82.27	\$ (0.37)	\$	2.5

	_	urront	Δ from YD	∆ fron	า 7D
	Current	םו וווטוו ב	Αv	g	
Brent Prompt	\$	84.46	* \$ (0.21)	\$	2.1

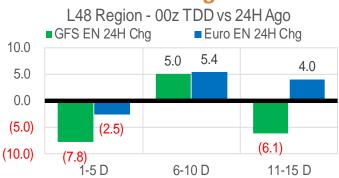
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Price Summary

Vs. 12H Ago



Vs. 24H Ago



	Current	Δ from YD	Δ from 7D Avg
US Dry Production	95.5	0.36	a 0.22

	Current	Δ from YD	Δ from 7D Avg
US Powe Burns	er 29.8	▼ -0.56	▼ -1.03

	Current	Δ from YD	Δ from 7D Avg
US ResComm	38.4	▼ -2.99	▼ -10.82

	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	6.3	▼ -0.13	▼ -0.19

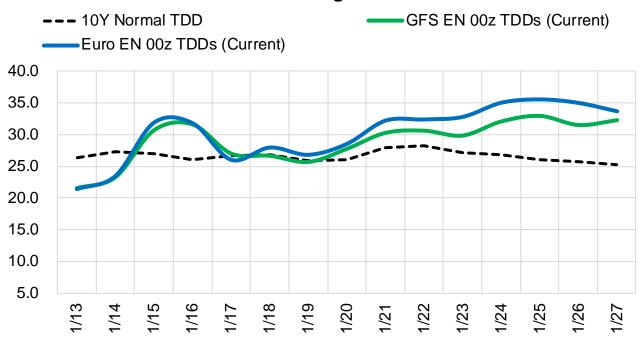
	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	12.6	- 0.35	a 0.38

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.5	- 0.04	0.24

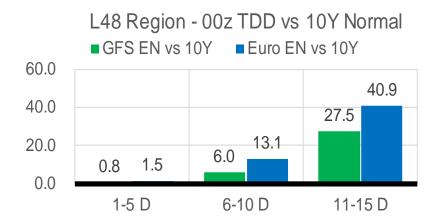


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	13-Jan	DoD	vs. 7D
Lower 48 Dry Production	95.3	95.1	95.7	95.4	95.3	95.1	95.5	0.4	0.2
Canadian Imports	6.3	6.5	6.5	7.0	6.7	6.5	6.3	▼ -0.1	▼ -0.2
L48 Power	31.6	28.7	29.5	31.7	30.5	30.3	29.8	▼-0.6	-0.6
L48 Residential & Commercial	56.2	48.0	44.4	51.8	50.3	41.3	38.4	▼ -3.0	▼ -10.3
L48 Industrial	27.6	26.1	25.9	26.5	26.1	25.0	24.6	▼ -0.5	▼ -1.7
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	4.3	3.7	3.6	4.1	3.9	3.5	3.3	▼ -0.2	▼ -0.5
L48 Regional Gas Consumption	124.9	111.8	108.6	119.3	116.1	105.4	101.2	▼ -4.2	▼ -13.1
Net LNG Delivered	12.29	12.07	12.17	12.26	12.07	12.95	12.58	▼-0.4	a 0.3
Total Mexican Exports	6.2	5.9	6.0	6.3	6.7	6.6	6.5	▼ 0.0	a 0.3
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	-41.8	-28.1	-24.6	-35.5	-32.8	-23.3	-18.5		

EIA Storage Week Balances

	3-Dec	10-Dec	17-Dec	24-Dec	31-Dec	7-Jan	WoW	vs. 4W
Lower 48 Dry Production	96.8	96.6	96.4	96.7	98.7	95.5	▼ -3.2	▼-1.7
Canadian Imports	5.6	5.3	4.6	5.0	4.2	5.7	1.5	▲ 0.9
L48 Power	28.7	29.1	28.4	29.9	26.4	29.9	3.5	1.4
L48 Residential & Commercial	33.1	35.4	31.4	40.3	33.4	44.3	1 0.9	9.2
L48 Industrial	22.5	23.7	23.7	24.0	22.2	25.9	3.7	2.5
L48 Lease and Plant Fuel	5.3	5.2	5.2	5.2	5.4	5.2	▼ -0.1	▼ -0.1
L48 Pipeline Distribution	3.2	3.2	3.0	3.5	3.0	3.6	0.6	0.4
L48 Regional Gas Consumption	92.9	96.7	91.7	103.0	90.4	109.0	18.6	▲13.5
Net LNG Exports	11.8	12.0	11.9	12.7	12.3	11.9	▼ -0.4	▼-0.3
Total Mexican Exports	6.4	6.4	6.2	6.1	5.8	5.9	0.1	▼-0.2
Implied Daily Storage Activity	-8.7	-13.2	-8.8	-20.0	-5.5	-25.7	-20.1	
EIA Reported Daily Storage Activity Daily Model Error	-8.4 -0.3	-12.6 -0.6	-7.9 -0.9	-19.4 -0.5	-4.4 -1.1			

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	3.7
Canadian Imports	4.8	6.3	5.1	5.4	5.3	4.8	6.2	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	34.5	47.6	13.2	3.7
L48 Industrial	24.5	23.8	20.2	21.0	22.4	23.3	26.3	3.0	2.5
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	0.7	0.3
L48 Regional Gas Consumption	104.8	104.6	69.4	71.5	88.9	94.5	113.4	18.9	8.9
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	6.1	▼ 0.0	▼ 0.0
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	-18.9	-23.5	12.1	11.0	-5.2	-11.0	-30.2		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	DoD	vs. 7D
NRC Nuclear Daily Output	91.1	91.3	90.8	89.8	89.9	90.1	90.6	0.5	0.1
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	13.8	13.6	14.1	15.0	15.0	14.7	14.3	-0.5	-0.1
NRC % Nuclear Cap Utilization	92.7	92.8	92.3	91.4	91.4	91.7	92.1	0.5	0.1

Wind Generation Daily Average - MWh (EIA)

	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	DoD	vs. 7D
CALI Wind	1579	531	2678	1616	1278	885	906	21	-522
TEXAS Wind	10851	13037	11809	16261	17906	7450	10479	3029	-2406
US Wind	67565	52508	53629	72018	62763	35810	60522	24713	3140

Generation Daily Average - MWh (EIA)

	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	DoD	vs. 7D
US Wind	67565	52508	53629	72018	62763	35810	60522	24713	3140
US Solar	8514	9100	9385	9072	7743	8376	9830	1454	1132
US Petroleum	2496	4404	6080	4176	3920	5593	5655	61	1210
US Other	8574	8477	8780	8915	8462	9254	7621	-1633	-1123
US Coal	99579	109891	122329	111336	102542	121425	117539	-3886	6355
US Nuke	96251	96549	95542	95132	94745	95413	96120	707	515
US Hydro	33295	35263	35865	34488	31877	35275	34948	-327	604
US Gas	157749	171299	178489	141233	130584	172634	171160	-1474	12496

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear Ge	eneration V	Veekly	Average -	GWh ((NRC)
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	3-Dec	10-Dec	17-Dec	24-Dec	31-Dec	7-Jan	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	87.8	88.0	90.0	92.1	92.1	91.3	-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	17.1	16.9	14.9	12.8	12.8	13.6	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)

	3-Dec	10-Dec	17-Dec	24-Dec	31-Dec	7-Jan	WoW	Bcf/d Impact
CALI Wind	363	1263	1709	943	2591	1603	-987	0.2
TEXAS Wind	8733	12216	16176	11007	13891	13603	-288	0.1
US Wind	47210	51470	68412	48727	53102	57155	4053	-0.7
					4374.8			
					9%			

Generation Weekly Average - MWh (EIA)

	3-Dec	10-Dec	17-Dec	24-Dec	31-Dec	7-Jan	WoW	WoW Bcf/d Impact
US Wind	47210	51470	68412	48727	53102	57155	4053	-0.7
US Solar	9921	7413	7570	7098	6957	8345	1388	-0.2
US Petroleum	3166	3440	2700	3581	3084	3038	-46	0.0
US Other	8482	8398	8301	8532	7584	8239	655	-0.1
US Coal	82287	82743	76931	87373	80019	94990	14971	-2.7
US Nuke	92817	92983	95054	97422	97083	96342	-741	0.1
US Hydro	26777	29626	30257	32560	31279	34489	3211	-0.6
US Gas	155286	159457	148807	166457	135613	154119	18506	

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	90.5	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	14.4	29.4	22.2	14.6	14.0	13.3	-0.6	-1.0	
NRC % Nuclear Cap Utilization	95.7	92.0	76.8	84.1	91.8	92.5	93.1	0.6	1.1	

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	1235	938	1765	1252	1585	1341	1615	-243	677
TEXAS Wind	10248	11302	11565	11869	12927	12785	12884	-141	1581
US Wind	40786	42387	43142	49974	54822	57798	55181	2976	12794

Generation Monthly Average - MWh (EIA)

Concration monthly /trolage	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	40786	42387	43142	49974	54822	57798	55181	▼-2617.2	12794
US Solar	4718	6378	11059	9690	7376	8978	7861	▼ -1116.6	1483
US Petroleum	3611	2830	3239	3045	3134	4288	3664	▼ -624	833
US Other	8060	8471	11109	8435	8214	8328	8179	▼ -149	▼ -291
US Coal	82295	107369	84432	80848	81680	107211	93222	▼ -13989	▼-14147
US Nuke	97458	95766	77089	87404	95408	95937	96634	697	868
US Hydro	29966	32699	24078	26593	30805	34627	33068	-1559	369
US Gas	148552	155605	159049	151462	152400	160275	154276	▼ -19357	▼ -1330
US Total	424372	450090	413353	417925	434111	477558	452290	▼-36097	2200



See National Wind and Nuclear daily charts



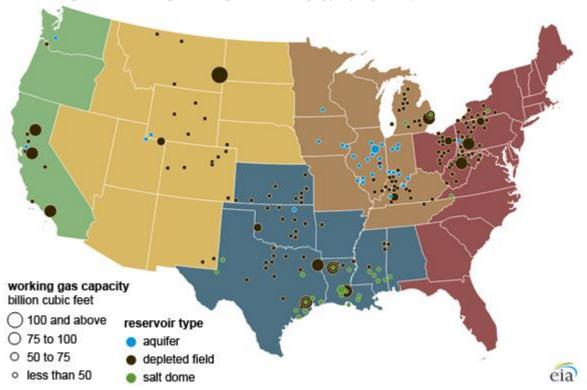
Regional S/D Models Storage Projection

Week Ending 7-Jan

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-25.9	1.1	-24.8	-174
East	-7.7	2.6	-5.1	-35
Midwest	-7.5	0.9	-6.6	-47
Mountain	8.0	-3.3	-2.5	-18
South Central	-10.0	1.8	-8.2	-57
Pacific	-1.6	-0.9	-2.5	-17

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

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



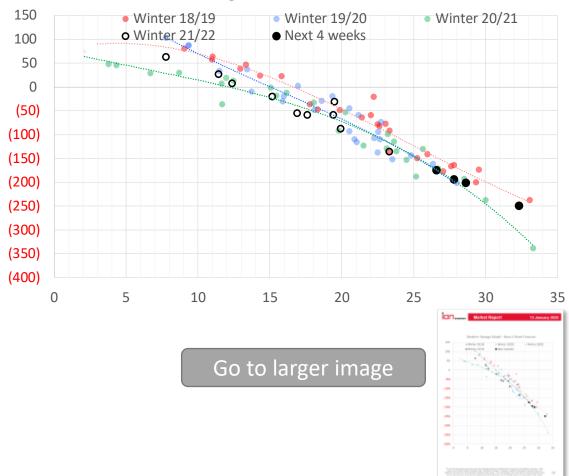


Weather Model Storage Projection

Next report
and beyond

Week Ending	GWDDs	Week Storage Projection
07-Jan	27	-174
14-Jan	28	-194
21-Jan	29	-201
28-Jan	32	-249

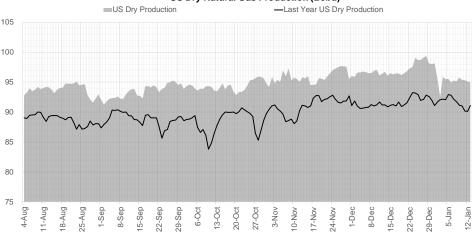
Weather Storage Model - Next 4 Week Forecast



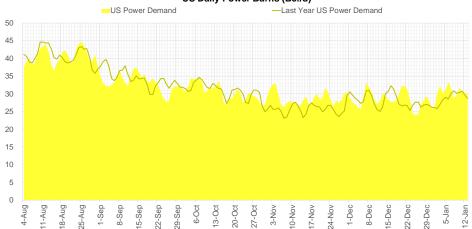


Supply - Demand Trends

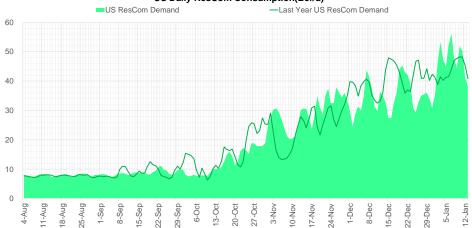
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



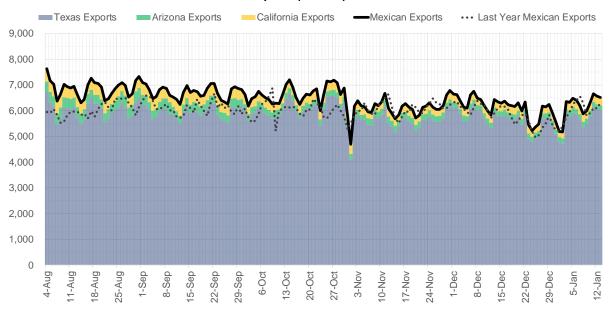
US Daily ResCom Consumption(Bcf/d)



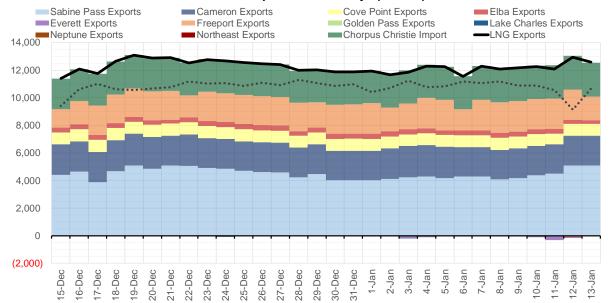
Source: Bloomberg



Mexican Exports (MMcf/d)







Source: Bloomberg





Nat Gas Options Volume and Open Interest CME and ICE Combined

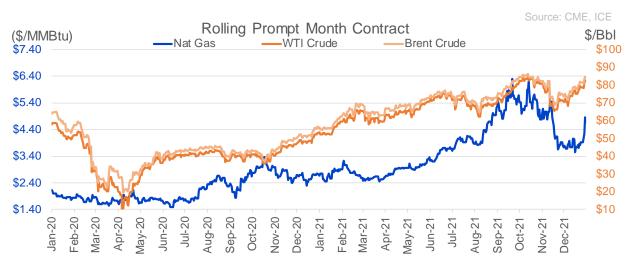
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
2	2022	С	5.00	12984	3	2022	С	5.00	33586
2	2022	P	4.00	11881	3	2022	č	10.00	32798
2	2022	C			2	2022	Č	4.00	28777
			6.00	8489	2	2022	Č	5.00	28385
3	2022	С	6.00	7375	3	2022	Č	8.00	28282
4	2022	С	6.00	6833	3	2022	Č	4.00	25708
7	2022	С	6.00	6425	3	2022	P	2.50	21493
2	2022	P	3.75	6139	2	2022	P	3.50	21351
2	2022	P	4.50	5802	12	2022	Ċ	5.00	20927
2	2022	С	4.50	5652	3	2022	Č	6.00	20750
3	2022	С	5.00	5623	3	2022	P	3.00	20193
5	2022	С	6.00	5170	2	2022	Ċ	6.00	19935
10	2022	С	6.00	5125	4	2022	Č	3.00	19710
6	2022	С	6.00	4925	4	2022	C	5.00	19614
8	2022	С	6.00	4925	2	2022	C	4.50	17542
9	2022	С	6.00	4925	5	2022	P	3.00	17051
3	2022	С	4.00	4849	2	2022	P	4.00	16813
2	2022	С	6.50	4472	6	2022	C	5.00	16542
3	2022	Р	3.50	3885	3	2022	P	3.50	16404
2	2022	Р	4.25	3876	3	2022	P	4.00	16394
3	2022	С	4.50	3452	4	2022	P	3.00	16367
2	2022	С	7.00	3312	=	2022	P		
2	2022	Р	3.50	3234	4		C	2.50	16364
4	2022	С	7.00	3231	3 10	2022		7.00	16339
2	2022	С	5.25	3158	10	2022 2022	C C	6.00 5.00	15755 15500
5	2022	С	7.00	3025	2	2022	C	5.00 4.25	15292
6	2022	С	7.00	3025			C		
7	2022	С	7.00	3025	3 3	2022 2022	P	4.50 2.00	15166 14985
8	2022	С	7.00	3025	2	2022	P P	3.00	14985
9	2022	С	7.00	3025		2022	-		
10	2022	С	7.00	3025	2 10	2022	C P	10.00 2.00	14428 13921
2	2022	С	5.50	2919			P P		
3	2022	P	3.00	2908	3 4	2022		2.25	13917
2	2022	C	8.00	2850	4 5	2022	C C	4.00	13763
3	2022	P	4.00	2848	2	2022 2022	C	3.00	13733
2	2022	C	4.75	2825	5		C	8.00	13698
2	2022	Ċ	4.25	2747		2022	P	5.00	13628
2	2022	Č	4.00	2208	3 2	2022	P P	5.00	13560
3	2022	Č	10.00	2208		2022		3.75	13511
12	2022	P	3.50	2167	6	2022	С	3.00	13438
2	2022	P	3.35	2102	2	2022	С	5.50	13360
2	2022	P	3.90	2060	3	2022	С	3.00	13307
7	2022	C	5.00	2050	12	2022	С	4.50	13307
4	2022	C	5.00	1898	12	2022	С	5.25	13263
2	2022	C	5.75	1896	2	2022	С	7.00	13260
3	2022	C	8.00	1717	3	2022	С	3.50	13252
		P			5	2022	P	2.50	13248
2	2022	-	4.10	1658	7	2022	С	3.00	13230
12	2022	С	6.00	1655	8	2022	С	3.00	13226
3	2022	С	4.25	1651	9	2022	С	3.00	13225
8	2022	С	5.00	1550	10	2022	C Source	: CME, ICE	13114



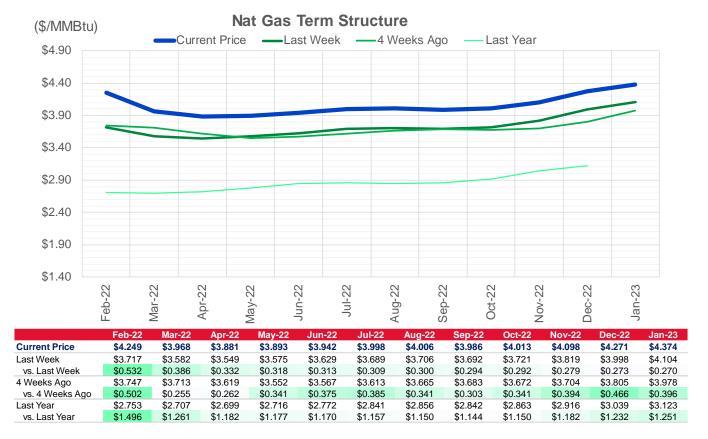
Nat Gas Futures Open Interest

CME and ICE Combined

CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MM									
	Current	Prior	Daily Change		Current	Prior	Daily Change		
FEB 22	88165	90410	-2245	FEB 22	76211	78252	-2041		
MAR 22	272137	265239	6898	MAR 22	92287	89961	2327		
APR 22	88050	84056	3994	APR 22	74211	74627	-416		
MAY 22	115843	115465	378	MAY 22	69306	67311	1996		
JUN 22	59014	56227	2787	JUN 22	56458	54986	1473		
JUL 22	58790	54329	4461	JUL 22	60047	59660	388		
AUG 22	37705	35922	1783	AUG 22	56662	55728	934		
SEP 22	49039	48302	737	SEP 22	57469	56791	678		
OCT 22	82042	78750	3292	OCT 22	62272	62180	92		
NOV 22	35802	35784	18	NOV 22	51962	51762	200		
DEC 22	37926	36379	1547	DEC 22	61272	60657	615		
JAN 23	49206	46528	2678	JAN 23	49375	49421	-46		
FEB 23	14594	14116	478	FEB 23	38960	38000	960		
MAR 23	30380	28784	1596	MAR 23	43934	42473	1460		
APR 23	29534	26689	2845	APR 23	45058	44015	1043		
MAY 23	16322	14712	1610	MAY 23	37867	36874	993		
JUN 23	10859	10109	750	JUN 23	35597	34187	1410		
JUL 23	9442	8771	671	JUL 23	34984	33527	1457		
AUG 23	6386	5943	443	AUG 23	34668	33693	975		
SEP 23	9368	8413	955	SEP 23	34407	33004	1403		
OCT 23	12374	13696	-1322	OCT 23	37579	36616	963		
NOV 23	8155	8155	0	NOV 23	37150	36637	513		
DEC 23	10017	9886	131	DEC 23	34010	33679	331		
JAN 24	6643	6273	370	JAN 24	24033	23734	300		
FEB 24	1777	1778	-1	FEB 24	17446	17164	281		
MAR 24	10088	9705	383	MAR 24	23366	23104	262		
APR 24	5568	5187	381	APR 24	16521	16204	317		
MAY 24	2069	2064	5	MAY 24	16906	16562	343		
JUN 24	921	932	-11	JUN 24	17041	16728	313		
JUL 24	563	564	-1	JUL 24	17655	17332	324		







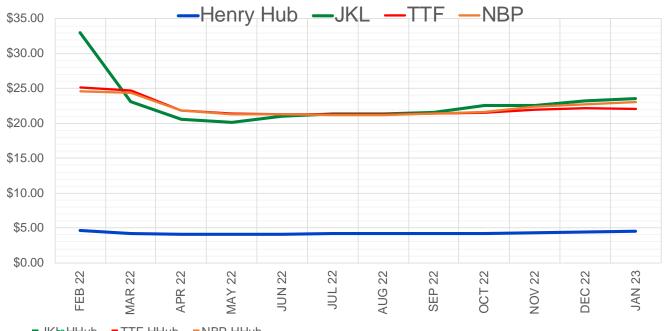
		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	18.00	17.40	-0.60
TETCO M3	\$/MMBtu	5.16	6.10	0.94
FGT Zone 3	\$/MMBtu	5.31	3.97	-1.34
Zone 6 NY	\$/MMBtu	5.31	8.30	2.99
Chicago Citygate	\$/MMBtu	4.41	4.46	0.05
Michcon	\$/MMBtu	4.37	3.63	-0.74
Columbia TCO Pool	\$/MMBtu	4.32	3.39	-0.93
Ventura	\$/MMBtu	4.37	5.83	1.46
Rockies/Opal	\$/MMBtu	5.11	4.32	-0.79
El Paso Permian Basin	\$/MMBtu	4.25	3.93	-0.32
Socal Citygate	\$/MMBtu	5.62	5.49	-0.13
Malin	\$/MMBtu	5.08	5.07	-0.01
Houston Ship Channel	\$/MMBtu	3.96	3.97	0.01
Henry Hub Cash	\$/MMBtu	4.60	3.74	-0.87
AECO Cash	C\$/GJ	3.73	3.27	-0.46
Station2 Cash	C\$/GJ	3.94	5.38	1.44
Dawn Cash	C\$/GJ	4.40	3.92	-0.48

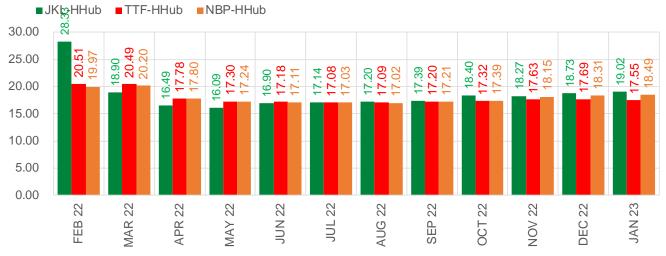
Source: CME, Bloomberg



						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		2.199
NatGas Oct21/Nov21	\$/MMBtu	0.361		0.000		0.000		0.307
NatGas Oct21/Jan22	\$/MMBtu	-1.817		0.000		0.222		-2.078
NatGas Apr22/Oct22	\$/MMBtu	0.102		-0.050	•	-0.041		0.086
WTI Crude	\$/Bbl	82.64		4.790		11.770		29.730
Brent Crude	\$/Bbl	84.67		3.870		10.790		28.610
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	259.42		14.810		37.380		99.530
Propane, Mt. Bel	cents/Gallon	1.17		0.069		0.134		0.276
Ethane, Mt. Bel	cents/Gallon	0.38		0.028		0.050		0.147
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	\$4.666	\$4.226	\$4.091	\$4.097	\$4.143	\$4.196	\$4.203	\$4.183	\$4.205	\$4.282	\$4.459	\$4.555
JKL	\$33.000	\$23.130	\$20.585	\$20.185	\$21.045	\$21.335	\$21.405	\$21.570	\$22.605	\$22.550	\$23.190	\$23.575
JKL-HHub	\$28.334	\$18.904	\$16.494	\$16.088	\$16.902	\$17.139	\$17.202	\$17.387	\$18.400	\$18.268	\$18.731	\$19.020
TTF	\$25.174	\$24.716	\$21.870	\$21.401	\$21.322	\$21.277	\$21.296	\$21.385	\$21.529	\$21.914	\$22.144	\$22.106
TTF-HHub	\$20.508	\$20.490	\$17.779	\$17.304	\$17.179	\$17.081	\$17.093	\$17.202	\$17.324	\$17.632	\$17.685	\$17.551
NBP	\$24.631	\$24.425	\$21.891	\$21.341	\$21.254	\$21.223	\$21.218	\$21.389	\$21.590	\$22.434	\$22.772	\$23.043
NBP-HHub	\$19.965	\$20.199	\$17.800	\$17.244	\$17.111	\$17.027	\$17.015	\$17.206	\$17.385	\$18.152	\$18.313	\$18.488



Weather Storage Model - Next 4 Week Forecast

