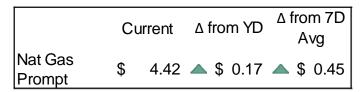


12 January 2022



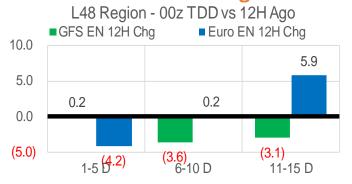
	Current	Δ from YD	Δ from Av	
WTI Prompt	\$ 81.46	\$ 0.24	\$	2.4

	_	urrent	۸ fro	m VD	∆ fro	m 7D
	C	Jurrent	Δ 110	טו ווו	Avg	
Brent Prompt	\$	83.85	\$	0 13	\$	2.0
Prompt	Ψ	03.03	_ Ψ	0.13	_ ψ	2.0

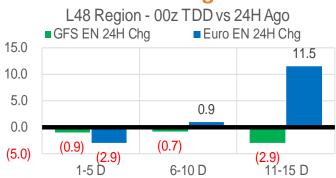
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Short-term Weather Model Outlooks
Lower 48 Component Models
Regional S/D Models Storage Projection
Weather Model Storage Projection
Supply – Demand Trends
Nat Gas Options Volume and Open Interest
Nat Gas Futures Open Interest
Price Summary

Vs. 12H Ago



Vs. 24H Ago



	Current	Δ from YD	Δ from 7D Avg
US Dry Production	94.8	- 0.47	▼ -0.47

	Current	Δ from YD	Δ from 7D Avg
US ResComm	41.8	▼ -8.40	▼ -7.85

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	12.9	0.82	a 0.82

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	30.3	-0.04	▼ -0.51

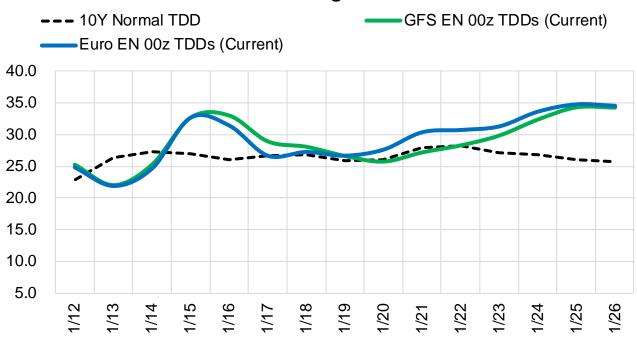
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	6.4	- 0.29	a 0.01

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.3	▼ -0.34	a 0.01

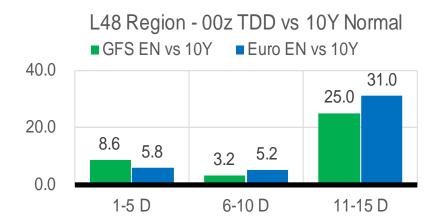


Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal



Source: WSI, Bloomberg



Lower 48 Component Models

Daily Balances

	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	11-Jan	12-Jan	DoD	vs. 7D
Lower 48 Dry Production	94.9	95.3	95.1	95.6	95.4	95.3	94.8	▼ -0.5	▼ -0.4
Canadian Imports	6.2	6.3	6.5	6.5	7.0	6.7	6.4	▼ -0.3	▼ -0.1
L48 Power	33.3	31.5	28.7	29.4	31.7	30.4	30.3	▼ 0.0	▼ -0.5
L48 Residential & Commercial	52.2	56.4	48.1	44.3	51.4	50.2	41.8	▼-8.4	-8.6
L48 Industrial	27.2	27.4	25.9	25.5	26.2	25.8	24.9	▼ -0.9	▼ -1.4
L48 Lease and Plant Fuel	5.2	5.2	5.2	5.2	5.2	5.2	5.2	▼ -0.1	▼ -0.1
L48 Pipeline Distribution	4.1	4.3	3.7	3.6	4.0	3.9	3.5	▼ -0.4	- 0.4
L48 Regional Gas Consumption	122.0	124.7	111.5	108.0	118.5	115.5	105.6	▼-9.8	▼ -11.1
Net LNG Delivered	11.56	12.29	12.07	12.14	12.26	12.10	12.92	8.0	0.9
Total Mexican Exports	6.4	6.2	5.9	6.0	6.3	6.6	6.3	▼ -0.3	a 0.0
Implied Daily Storage Activity	-38.8	-41.6	-27.9	-24.1	-34.7	-32.2	-23.6		
EIA Reported Daily Storage Activity Daily Model Error									

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	95.4	▼ -3.3	▼-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	44.4	11.0	9.3
L48 Industrial	22.5	23.7	23.7	24.0	22.2	25.9	3.7	2.4
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	108.9	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 EIA Reported Daily Storage Activity	-8.7 -8.4	-13.2 -12.6	-8.8 -7.9	-20.0 -19.4	-5.5 -4.4	-25.7	-20.1	
Daily Model Error	-0.4	-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	48.2	13.7	4.2
L48 Industrial	24.5	23.8	20.2	21.0	22.4	23.3	26.2	2.9	2.4
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	113.9	19.4	9.3
Net LNG Exports	8.4	10.5	10.3	10.6	11.4	12.1	12.0	▼-0.1	1.5
Total Mexican Exports	5.1	6.2	6.7	6.6	6.1	6.1	6.1	▼ -0.1	▼-0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	-18.9	-23.5	12.1	11.0	-5.2	-11.0	-30.6		



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	DoD	vs. 7D
NRC Nuclear Daily Output	91.4	91.1	91.3	90.8	89.8	89.9	90.1	0.3	-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	13.4	13.8	13.6	14.1	15.0	15.0	14.7	-0.3	0.6
NRC % Nuclear Cap Utilization	93.0	92.7	92.8	92.3	91.4	91.4	91.7	0.3	-0.6

Wind Generation Daily Average - MWh (EIA)

	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	DoD	vs. 7D
CALI Wind	2595	1583	690	2872	1800	1278	885	-393	-918
TEXAS Wind	17944	10851	13037	11809	16261	17906	7450	-10455	-7184
US Wind	72893	65542	51357	53681	72210	62816	35810	-27007	-27274

Generation Daily Average - MWh (EIA)

	4-Jan	5-Jan	6-Jan	7-Jan	8-Jan	9-Jan	10-Jan	DoD	vs. 7D
US Wind	72893	65542	51357	53681	72210	62816	35810	-27007	-27274
US Solar	8707	8405	8981	9377	9064	7734	8374	639	-337
US Petroleum	2695	2497	4404	6080	4176	3920	5593	1674	1632
US Other	8838	8565	8477	8776	8911	8458	9250	792	579
US Coal	96602	97733	107586	121888	110987	102211	121087	18876	14920
US Nuke	96538	96251	96549	95542	95132	94745	95413	668	-380
US Hydro	35699	33284	35249	35877	34514	31872	35274	3403	858
US Gas	165704	156101	169029	177768	140639	130013	172041	42028	15499

See National Wind and Nuclear daily charts



Storage Week Average Generation Data

Nuclear Ge	eneration V	Veekly	Average -	GWh ((NRC)
------------	-------------	--------	-----------	-------	-------

	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	1632	-958	0.2
TEXAS Wind	8733	12216	16176	11007	13891	13603	-288	0.1
US Wind	47210	51470	68318	48727	53102	56002	2900	-0.5
					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	68318	48727	53102	56002	2900	-0.5
US Solar	9921	7413	7570	7095	6951	8211	1260	-0.2
US Petroleum	3166	3440	2700	3581	3084	3038	-46	0.0
US Other	8482	8398	8301	8531	7580	8203	622	-0.1
US Coal	82287	82743	77011	87353	79786	93277	13490	-2.4
US Nuke	92817	92983	95054	97422	97083	96342	-741	0.1
US Hydro	26777	29626	30256	32549	31266	34469	3203	-0.6
US Gas	155286	159457	148891	166308	135037	152513	17476	

See National Wind and Nuclear daily charts



NRC % Nuclear Cap Utilization

market Report

95.6

91.9

Monthly Average Generation Data

Nuclear Generation Monthly Average - GWh (NRC)									
-	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	94.0	90.4	75.5	82.7	90.3	90.8	91.5	0.5	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	10.9	14.5	29.4	22.2	14.6	14.1	13.4	-0.5	-1.1

84.1

91.8

76.8

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	1209	989	1765	1252	1585	1423	1705	-162	716
TEXAS Wind	10360	11197	11565	11869	12927	12473	12925	-454	1728
US Wind	40713	41966	43142	49974	54801	52804	53564	-1997	11598

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	40713	41966	43142	49974	54801	52804	53564	~ 759.9	11598
US Solar	4748	6331	11059	9690	7374	8584	7619	▼ -965.1	1288
US Petroleum	3590	2862	3239	3045	3134	4164	3563	▼ -601	~ 701
US Other	8047	8476	11109	8435	8212	8636	8302	▼ -334	▼ -174
US Coal	83015	107211	84432	80848	81631	105847	91799	▼ -14048	▼-15411
US Nuke	97533	95674	77089	87404	95408	95803	96614	811	940
US Hydro	29741	32614	24078	26593	30799	34645	32936	▼ -1709	322
US Gas	148410	156026	159049	151462	152235	158425	153098	▼-16086	▼ -2928
US Total	424059	449704	413342	417925	431253	468629	444836	▼-32933	▼ -4868



See National Wind and Nuclear daily charts



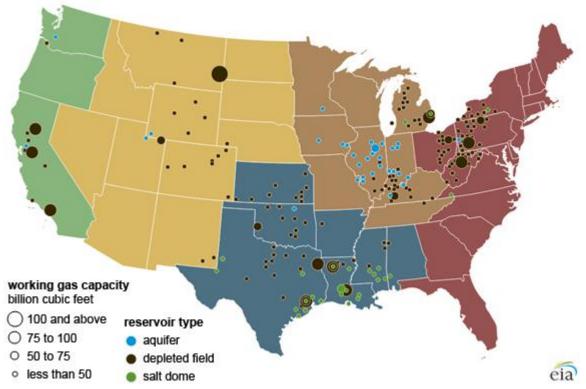
Regional S/D Models Storage Projection

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	-36
Midwest	-7.5	0.9	-6.6	-46
Mountain	0.8	-3.3	-2.5	-17
South Central	-9.9	1.8	-8.1	-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	-192
21-Jan	29	-201
28-Jan	31	-228

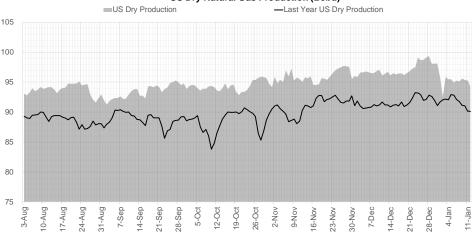
Weather Storage Model - Next 4 Week Forecast



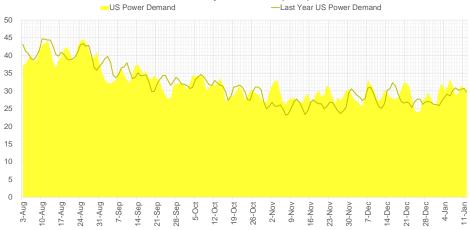


Supply - Demand Trends

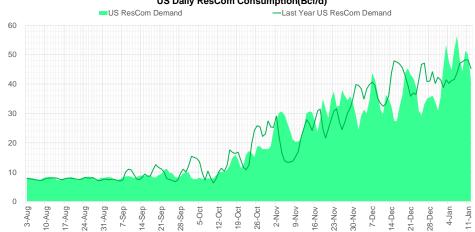
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



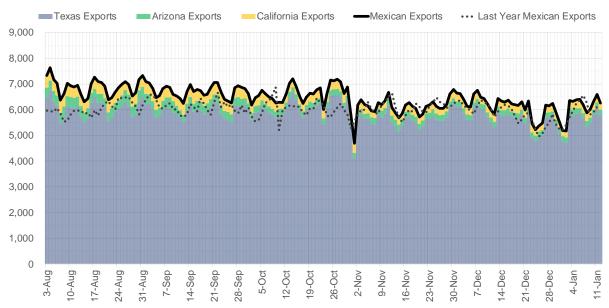
US Daily ResCom Consumption(Bcf/d)

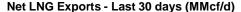


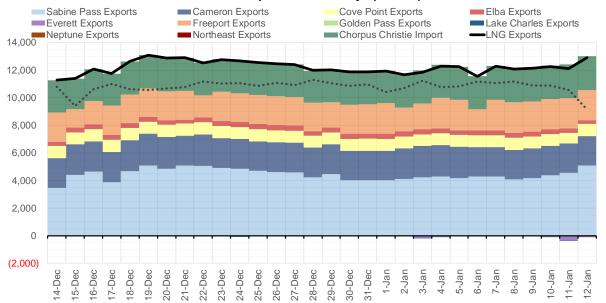
Source: Bloomberg



Mexican Exports (MMcf/d)







Source: Bloomberg



Nat Gas Options Volume and Open Interest CME and ICE Combined

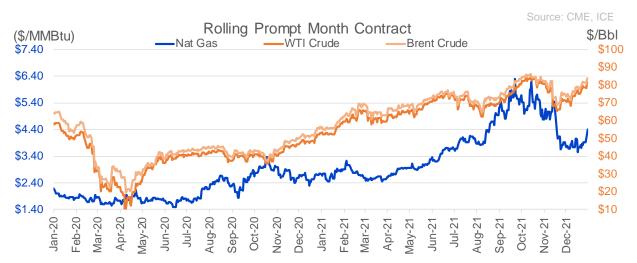
CONTRACT	RACT CONTRACT PUT/CALL STRIKE CUI		CUMULATIVE				PUT/CALL	STRIKE	CUMULATIVE OI	
MONTH	YEAR	PU1/CALL	SIRINE	VOL	1	MONTH	YEAR	PUT/CALL	SIRIKE	CUMULATIVE OF
3	2022	С	6.00	6436		3	2022	С	10.00	36029
2	2022	C	5.00	5911		3	2022	Č	5.00	33978
3	2022	C	10.00	5157		2	2022	Č	4.00	28911
2	2022	P	3.50	4383		3	2022	Ċ	8.00	27472
2	2022	P	3.75	4115		3	2022	Ċ	4.00	26809
5	2022	C	5.00	3300		2	2022	Ċ	5.00	25558
2	2022	P	3.00	2755		3	2022	Č	6.00	23273
2	2022	C	4.50	2676		3	2022	P	2.50	21478
3	2022	C	4.50	2662		2	2022	Р	3.50	21171
3	2022	C	5.00	2650		12	2022	C	5.00	20917
2	2022	C	4.25	2410		2	2022	Č	6.00	20549
3	2022	P	3.25	1989		3	2022	P	3.00	19934
2	2022	P	4.00			4	2022	С	5.00	19714
3	2022	C	4.00	1861 1843		4	2022	C	3.00	19710
8	2022	C	5.00			2	2022	C	4.50	17748
2	2022	P	3.25	1650 1532		5	2022	P	3.00	16601
						3	2022	С	7.00	16546
3	2022	P P	3.35	1505		3	2022	P	3.50	16503
3	2022	P P	3.75	1242		6	2022	С	5.00	16442
2 10	2022	P P	3.70	1229		3	2022	P	4.00	16383
3	2022 2022	P	3.00	1175		2	2022	Р	4.00	16355
			3.50	1148		4	2022	Р	2.50	16264
2	2022	C P	4.75	1140		4	2022	Р	3.00	15859
3	2022	P P	3.00	1090		2	2022	С	4.25	15694
4	2022		2.50	1000		10	2022	С	6.00	15605
5	2022	P	2.50	1000		10	2022	С	5.00	15175
6	2022	P	2.50	1000		3	2022	Р	2.00	14985
7	2022	P	2.50	1000		2	2022	Р	3.00	14820
8	2022	P	2.50	1000		2	2022	С	10.00	14428
9	2022	P	2.50	1000		10	2022	Р	2.00	13921
10	2022	P	2.50	1000		3	2022	Р	2.25	13917
2	2022	С	4.00	916		2	2022	С	5.50	13890
4	2022	P	3.25	909		8	2022	С	5.00	13813
2	2022	С	4.10	892		5	2022	С	3.00	13733
6	2022	P	3.00	875		3	2022	С	4.50	13732
3	2022	C C	4.00	856		4	2022	С	4.00	13714
10	2022		5.00	850		3	2022	Р	5.00	13560
2 2	2022	С	5.25	779		6	2022	С	3.00	13438
	2023	С	8.00	750		5	2022	С	5.00	13398
2	2023	P	3.50	750		12	2022	С	4.50	13307
5	2022	P	3.00	725		3	2022	С	3.00	13282
7	2022	P	3.00	725		3	2022	C	3.50	13255
8	2022	P	3.00	725		7	2022	С	3.00	13230
9	2022	P	3.00	725		8	2022	С	3.00	13226
3	2022	P P	3.70	702		9	2022	С	3.00	13225
4	2022		3.00	684		10	2022	С	3.00	13114
1	2023	P	3.00	680		12	2022	С	5.25	13113
2	2023	P	3.00	680		5	2022	P	2.50	12948
3 4	2023	P C	3.00	680 667		10	2022	P	3.00	12616
4	2022	C	4.00	667		2	2022	C Source	: CME, ICE	12491.5



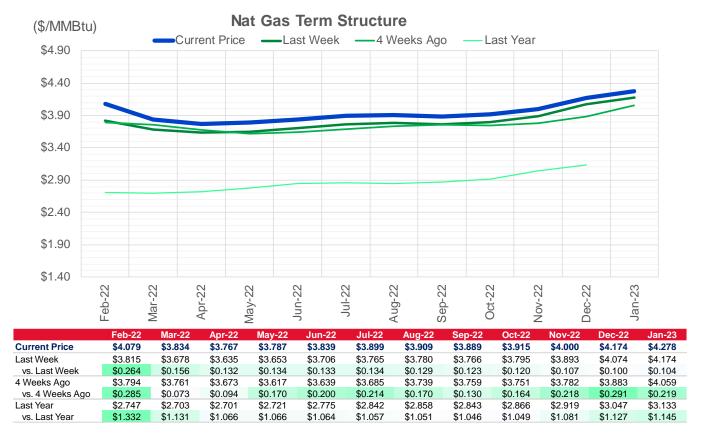
Nat Gas Futures Open Interest

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	90509	98605	-8096	FEB 22	78252	77927	325		
MAR 22	265239	261746	3493	MAR 22	89961	88957	1004		
APR 22	84055	85409	-1354	APR 22	74627	74762	-135		
MAY 22	115468	115117	351	MAY 22	67311	67362	-51		
JUN 22	56227	55807	420	JUN 22	54986	55093	-107		
JUL 22	54329	51594	2735	JUL 22	59660	59088	571		
AUG 22	35922	35209	713	AUG 22	55728	55314	415		
SEP 22	48302	48720	-418	SEP 22	56791	56465	326		
OCT 22	78750	77374	1376	OCT 22	62180	61553	627		
NOV 22	35784	35682	102	NOV 22	51762	51911	-149		
DEC 22	36379	36380	-1	DEC 22	60657	60409	248		
JAN 23	46528	44804	1724	JAN 23	49421	48801	620		
FEB 23	14116	13572	544	FEB 23	38000	37585	415		
MAR 23	28784	27906	878	MAR 23	42473	41990	483		
APR 23	26689	25524	1165	APR 23	44015	43721	294		
MAY 23	14712	13894	818	MAY 23	36874	36553	321		
JUN 23	10109	10121	-12	JUN 23	34187	33845	342		
JUL 23	8771	8434	337	JUL 23	33527	33167	360		
AUG 23	5943	5926	17	AUG 23	33693	33469	224		
SEP 23	8413	8398	15	SEP 23	33004	32656	348		
OCT 23	13696	13178	518	OCT 23	36616	36353	262		
NOV 23	8155	7869	286	NOV 23	36637	36607	31		
DEC 23	9886	9660	226	DEC 23	33679	33645	34		
JAN 24	6273	5987	286	JAN 24	23734	23769	-36		
FEB 24	1778	1773	5	FEB 24	17164	17015	150		
MAR 24	9705	9704	1	MAR 24	23104	22964	140		
APR 24	5187	5186	1	APR 24	16204	16214	-10		
MAY 24	2064	2064	0	MAY 24	16562	16555	7		
JUN 24	932	932	0	JUN 24	16728	16736	-8		
JUL 24	564	564	0	JUL 24	17332	17339	-7		







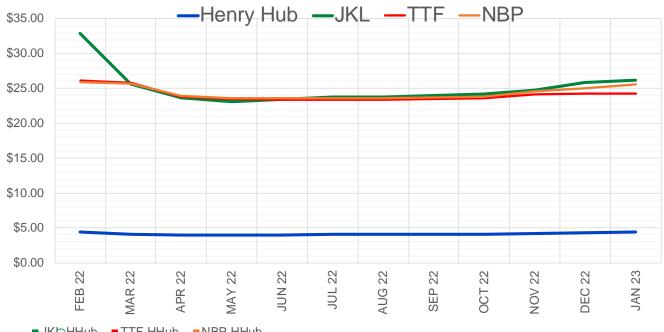
		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	16.05	18.60	2.55
TETCO M3	\$/MMBtu	5.31	5.58	0.27
FGT Zone 3	\$/MMBtu	5.60	3.88	-1.72
Zone 6 NY	\$/MMBtu	5.60	7.84	2.24
Chicago Citygate	\$/MMBtu	3.87	4.76	0.89
Michcon	\$/MMBtu	3.85	3.54	-0.31
Columbia TCO Pool	\$/MMBtu	3.68	3.26	-0.42
Ventura	\$/MMBtu	3.86	5.73	1.87
Rockies/Opal	\$/MMBtu	4.59	4.23	-0.36
El Paso Permian Basin	\$/MMBtu	3.70	3.84	0.14
Socal Citygate	\$/MMBtu	5.20	5.40	0.20
Malin	\$/MMBtu	4.67	5.00	0.33
Houston Ship Channel	\$/MMBtu	3.90	3.88	-0.02
Henry Hub Cash	\$/MMBtu	4.03	3.64	-0.39
AECO Cash	C\$/GJ	3.41	3.23	-0.18
Station2 Cash	C\$/GJ	3.51	5.31	1.80
Dawn Cash	C\$/GJ	3.87	3.83	-0.04

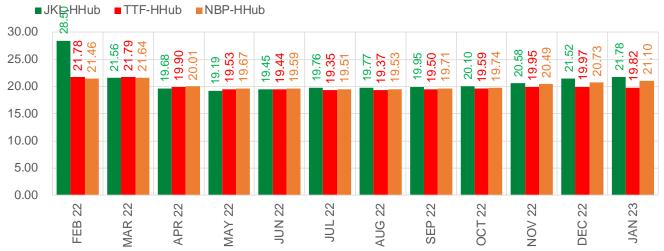
Source: CME, Bloomberg



						4 100 - 1		
					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		2.202
NatGas Oct21/Nov21	\$/MMBtu	0.361		0.000		0.000		0.308
NatGas Oct21/Jan22	\$/MMBtu	-1.817		0.000		0.277		-2.077
NatGas Apr22/Oct22	\$/MMBtu	0.132		-0.040	\blacksquare	-0.020		0.117
WTI Crude	\$/Bbl	81.22		4.230		10.490		28.010
Brent Crude	\$/Bbl	83.72		3.720		10.020		27.140
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	256.36		15.410		34.520		96.690
Propane, Mt. Bel	cents/Gallon	1.15		0.038		0.116		0.287
Ethane, Mt. Bel	cents/Gallon	0.37		0.024		0.037		0.135
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	\$4.418	\$4.048	\$3.948	\$3.953	\$4.003	\$4.055	\$4.064	\$4.049	\$4.080	\$4.161	\$4.330	\$4.443
JKL	\$32.915	\$25.610	\$23.630	\$23.140	\$23.455	\$23.815	\$23.830	\$24.000	\$24.180	\$24.740	\$25.850	\$26.220
JKL-HHub	\$28.497	\$21.562	\$19.682	\$19.187	\$19.452	\$19.760	\$19.766	\$19.951	\$20.100	\$20.579	\$21.520	\$21.777
TTF	\$26.194	\$25.833	\$23.845	\$23.487	\$23.444	\$23.409	\$23.429	\$23.547	\$23.667	\$24.111	\$24.303	\$24.258
TTF-HHub	\$21.776	\$21.785	\$19.897	\$19.534	\$19.441	\$19.354	\$19.365	\$19.498	\$19.587	\$19.950	\$19.973	\$19.815
NBP	\$25.882	\$25.690	\$23.954	\$23.624	\$23.594	\$23.568	\$23.596	\$23.754	\$23.818	\$24.654	\$25.058	\$25.547
NBP-HHub	\$21.464	\$21.642	\$20.006	\$19.671	\$19.591	\$19.513	\$19.532	\$19.705	\$19.738	\$20.493	\$20.728	\$21.104



Weather Storage Model - Next 4 Week Forecast

