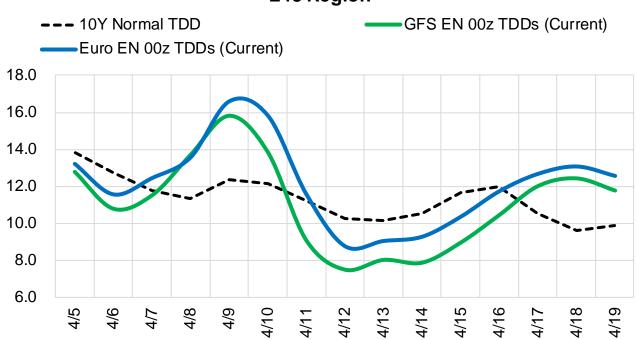


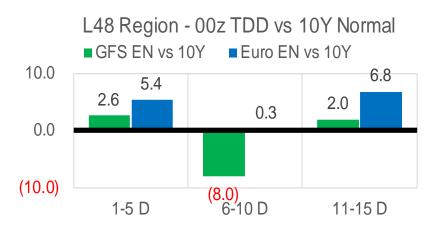


Short-term Weather Model Outlooks (00z)



L48 Region

Vs. 10Y Normal



Source: WSI, Bloomberg

Market Report

5 April 2022

Daily Balances

	30-Mar	31-Mar	1-Apr	2-Apr	3-Apr	4-Apr	5-Apr	DoD	vs. 7D
Lower 48 Dry Production	96.6	96.9	95.4	93.8	94.9	94.4	93.0	T -1.5	▼ -2.4
Canadian Imports	5.6	5.4	6.1	5.4	5.6	5.4	5.6	0.2	0.1
L48 Power	27.0	27.6	26.2	24.7	24.8	26.1	27.0	a 0.9	▲ 0.9
L48 Residential & Commercial	25.2	24.3	27.7	26.1	25.1	24.5	21.3	▼ -3.3	▼ -4.2
L48 Industrial	21.8	21.7	21.5	20.8	20.3	20.0	19.9	▼ -0.1	🔽 -1.1
L48 Lease and Plant Fuel	5.3	5.3	5.2	5.1	5.2	5.2	5.1	▼ -0.1	v -0.1
L48 Pipeline Distribution	2.7	2.7	3.0	2.8	2.8	2.8	2.7	▼ -0.1	— -0.1
L48 Regional Gas Consumption	82.0	81.5	83.5	79.6	78.1	78.6	75.9	-2.7	▼ -4.7
Net LNG Delivered	12.95	13.24	12.35	13.36	13.01	12.22	11.70	-0.5	T -1.2
Total Mexican Exports	6.2	6.3	6.5	5.5	6.1	6.2	6.2	▼ 0.0	0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	1.0	1.3	-0.8	0.7	3.2	2.8	4.8		

Lower 48 Component Models

Daily Model Error

EIA Storage Week Balances

	25-Feb	4-Mar	11-Mar	18-Mar	25-Mar	1-Apr	WoW	vs. 4W
Lower 48 Dry Production	94.4	94.2	94.8	93.9	95.4	96.1	0.7	1.5
Canadian Imports	6.4	5.9	5.2	5.2	4.8	5.7	0.9	0.4
L48 Power	28.7	29.4	27.6	27.3	25.5	26.9	1 .4	— -0.6
L48 Residential & Commercial	41.1	38.1	33.2	31.5	23.4	29.7	6 .2	T -1.9
L48 Industrial	25.4	23.1	22.7	20.7	20.8	21.2	0.5	- 0.6
L48 Lease and Plant Fuel	5.2	5.1	5.2	5.1	5.2	5.2	▲ 0.0	— 0.1
L48 Pipeline Distribution	3.3	3.3	3.2	3.1	2.6	2.9	0 .4	— -0.1
L48 Regional Gas Consumption	103.6	99.1	91.8	87.7	77.5	86.0	8.5	▼ -3.0
Net LNG Exports	11.7	12.5	12.8	12.9	13.0	13.1	0.1	0.3
Total Mexican Exports	6.1	6.4	6.6	6.6	6.5	6.4	▼ -0.2	T -0.2
Implied Daily Storage Activity	-20.6	-17.9	-11.1	-7.9	3.2	-3.7	-6.9	
EIA Reported Daily Storage Activity Daily Model Error	-19.9 -0.8	-17.7 -0.2	-11.3 0.1	-7.3 -0.7	3.7 -0.5			

Monthly Balances

	2Yr Ago	LY					MTD		
	Apr-20	Apr-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	МоМ	vs. LY
Lower 48 Dry Production	92.7	92.5	96.1	93.6	93.6	95.0	94.6	-0.4	2.2
Canadian Imports	4.0	4.7	4.8	6.7	6.6	5.2	5.6	0.4	1.0
L48 Power	25.6	25.0	28.7	31.4	29.0	26.9	25.5	T -1.4	a 0.4
L48 Residential & Commercial	20.5	19.6	33.9	48.6	42.7	29.6	25.9	▼ -3.7	6.3
L48 Industrial	20.4	21.4	22.5	25.5	25.3	21.7	20.6	▼ -1.0	▼ -0.7
L48 Lease and Plant Fuel	5.0	5.0	5.3	5.1	5.1	5.2	5.2	▼ 0.0	0 .1
L48 Pipeline Distribution	2.4	2.5	3.2	3.8	3.4	2.9	2.8	▼ -0.1	0 .4
L48 Regional Gas Consumption	74.0	73.5	93.6	114.4	105.5	86.3	80.0	▼ -6.3	6.5
Net LNG Exports	8.2	11.5	12.1	12.4	12.4	12.9	12.7	▼ -0.1	1.3
Total Mexican Exports	4.8	6.7	6.2	6.3	6.2	6.5	6.1	▼ -0.4	V -0.6
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	9.7	5.5	-11.0	-32.8	-23.8	-5.4	1.5		

Source: Bloomberg, analytix.ai



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

ENERGY

	28-Mar	29-Mar	30-Mar	31-Mar	1-Apr	2-Apr	3-Apr	DoD	vs. 7D
NRC Nuclear Daily Output	78.9	78.4	79.1	78.8	78.8	75.9	75.5	-0.4	-2.8
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	26.0	26.5	25.8	26.1	26.1	28.9	29.3	0.4	2.8
NRC % Nuclear Cap Utilization	80.2	79.7	80.4	80.1	80.1	77.2	76.8	-0.4	-2.8

Wind Generation Daily Average - MWh (EIA)

	28-Mar	29-Mar	30-Mar	31-Mar	1-Apr	2-Apr	3-Apr	DoD	vs. 7D
CALI Wind	2184	4353	3257	3143	1540	2615	4218	1603	1370
TEXAS Wind	19121	23399	17439	6087	19130	6752	18760	12008	3439
US Wind	61756	84046	77952	51776	54654	41469	60658	19189	-1284

Generation Daily Average - MWh (EIA)

	28-Mar	29-Mar	30-Mar	31-Mar	1-Apr	2-Apr	3-Apr	DoD	vs.7D
US Wind	61756	84046	77952	51776	54654	41469	60658	19189	-1284
US Solar	13367	13004	12777	13676	15296	16052	14562	-1490	534
US Petroleum	1148	1411	1089	858	915	934	961	26	-99
US Other	7648	7361	7090	6865	6905	6875	6700	-175	-424
US Coal	84131	75804	74209	79600	79898	81477	73444	-8033	-5742
US Nuke	83307	82890	83107	82852	82646	79972	79480	-492	-2982
US Hydro	35484	34304	33861	33741	34254	30530	30778	248	-2917
US Gas	145934	136267	132911	143416	132768	130132	11 5050	-15082	-21855

See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

Storage Week Average Generation Data

Nuclear Generation Weekly Average - GWh (NRC)

	25-Feb	4-Mar	11-Mar	18-Mar	25-Mar	1-Apr	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	86.9	85.8	82.3	80.9	80.9	79.3	-1.6	0.3
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	18.0	19.1	22.5	23.9	24.0	25.5	1.6	
NRC % Nuclear Cap Utilization	88.3	87.2	83.7	82.3	82.3	80.7	-1.6	

Wind Generation Weekly Average - MWh (EIA)

	25-Feb	4-Mar	11-Mar	18-Mar	25-Mar	1-Apr	WoW	WoW Bcf/d Impact
CALI Wind	2049	815	2602	2297	2037	2643	606	-0.1
TEXAS Wind	13068	6269	14469	17742	16108	14530	-1578	0.3
US Wind	60313	36019	56828	63171	62107	61695	-411	0.1
							-1%	
						-0.1		

Generation Weekly Average - MWh (EIA)

	25-Feb	4-Mar	11-Mar	18-Mar	25-Mar	1-Apr	WoW	WoW Bcf/d Impact
US Wind	60313	36019	56828	63171	62107	61695	-411	0.1
US Solar	11899	13922	12600	13807	13675	14951	1276	-0.2
US Petroleum	2961	3130	1742	961	864	1048	184	0.0
US Other	8211	7512	6628	7113	7738	7329	-409	0.1
US Coal	99888	103399	86717	86035	72503	77700	5197	-0.9
US Nuke	91458	90157	86449	84775	84027	83506	-521	0.1
US Hydro	33214	32196	34570	34871	33230	33459	228	0.0
US Gas	147276	158688	140400	137079	124819	134510	9691	1.7

See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

est.



Monthly Average Generation Data

Nuclear Generation Monthly Average - GWh (NRC)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Jan-22	Feb-22	Mar-22	Apr-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
NRC Nuclear Daily Output	81.1	80.2	90.2	87.6	81.3	75.5	79.8	-5.8	-0.4
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	23.8	24.7	14.7	17.3	23.6	29.3	25.1	5.8	0.4
NRC % Nuclear Cap Utilization	82.5	81.5	91.7	89.0	82.7	76.8	81.1	-5.9	-0.4

Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 S days	Same 30 days	Jan-22	Feb-22	Mar-22	Apr-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
CALI Wind	1807	2527	1244	1559	2250	3362	2453	1112	-73
TEXAS Wind	10159	14619	11355	12294	14837	16432	15478	1595	859
US Wind	38262	55903	51045	56539	58520	55619	59068	-2901	3165

Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Jan-22	Feb-22	Mar-22	Apr-22	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	38262	55903	51045	56539	58520	55619	59068	▲ 3449.0	a 3165
US Solar	7775	11271	9476	12088	13848	15007	14171	▼ -836.5	2900
US Petroleum	3192	2739	5021	3451	1335	946	1029	A 83	▼ -1711
US Other	7183	7450	8792	8832	7151	6776	7227	4 51	-222
US Coal	65339	79696	117971	106588	82269	76341	80295	A 3953	599
US Nuke	83844	84543	95259	92280	85157	80212	83688	4 3476	-856
US Hydro	31444	29761	34040	32213	33924	31424	33623	🔺 2199	3862
US Gas	149255	124385	164024	152058	135490	121610	133845	A 12775	460
US Total	384473	394480	485812	464578	419507	388404	414741	A 22100	20261



See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

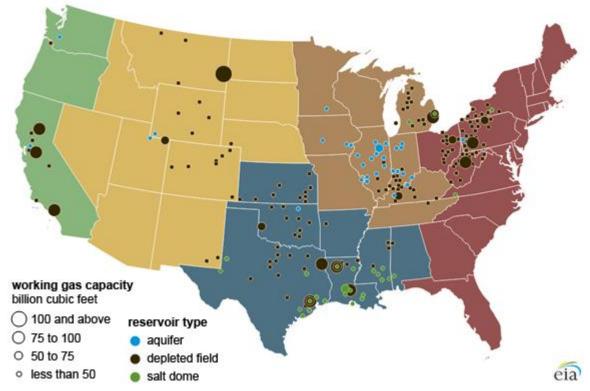


Regional S/D Models Storage Projection

Week Ending	1-Apr			
			Daily	
			Average	Weekly
		Daily	Storage	Adjusted
	Daily Raw	Adjustment	Activity	Storage
	Storage	Factor	(Adjusted) *	Activity
<u>L</u> 48	-3.3	0.1	-3.2	-22
East	-5.3	1.8	-3.5	-24
Midwest	-2.3	-0.7	-3.1	-22
Mountain	3.6	-3.2	0.4	3
South Central	0.2	2.0	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)



Weather Model Storage Projection

Next report and beyond		
Week Ending	GWDDs	Week Storage Projection
01-Apr	17	-22
08-Apr	12	4
15-Apr	10	34
22-Apr	11	32

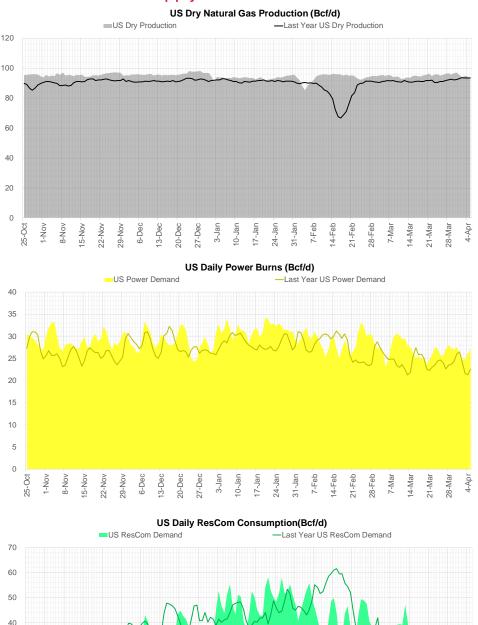
Weather Storage Model - Next 4 Week Forecast



8-Nov

15-Nov 22-Nov 29-Nov

1-Nov



Supply – Demand Trends

The risk of trading futures and options and other derivatives involves a substantial risk of loss and is not suitable for all persons. Each person must consider whether a particular trade, combination of trades, or strategy is suitable for that person's financial means and objectives. Past results are not necessarily indicative of future results. This communication may contain links to third party websites which are not under the control of and are not maintained by ION Energy Group, and ION Energy Group is not responsible for their content.

13-Dec 20-Dec 27-Dec 3-Jan

6-Dec

10-Jan 17-Jan 31-Jan

7-Feb

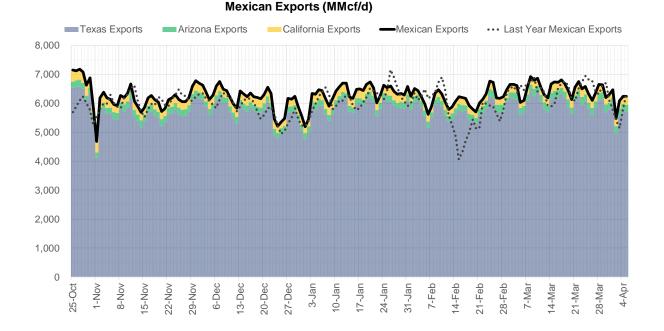
24-Jan

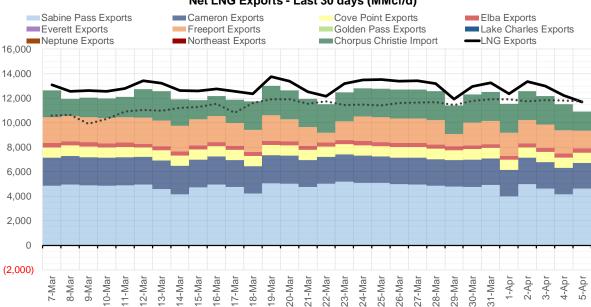
14-Feb 21-Feb 28-Feb

7-Mar 14-Mar 21-Mar 28-Mar 4-Apr

Source: Bloomberg







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

Source: Bloomberg

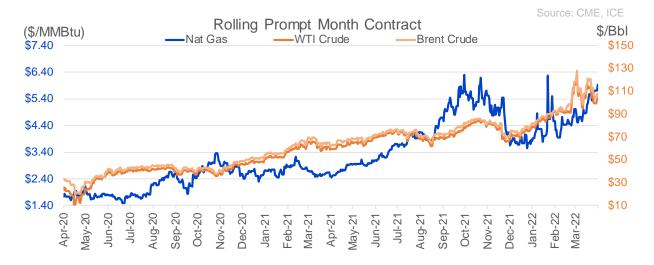


Nat Gas Options Volume and Open Interest CME and ICE Combined

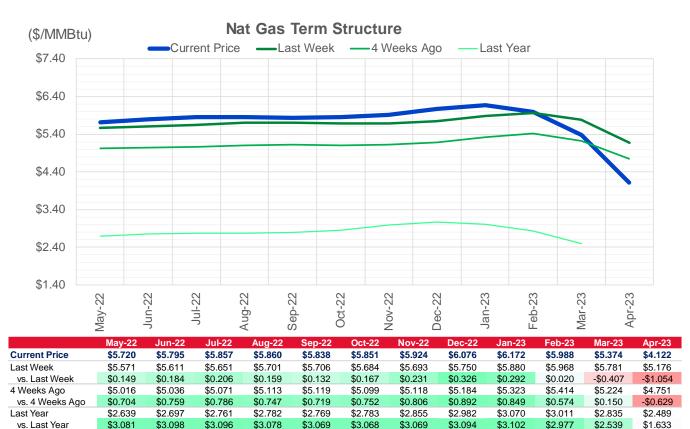
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
6	2022	Р	4.75	10393	8	2022	С	10.00	42970
6	2022	Р	4.00	7515	8	2022	С	10.50	39000
7	2022	С	10.00	6227	10	2022	С	6.00	29024
11	2022	С	8.00	6100	5	2022	Р	4.00	27461
11	2022	Р	4.00	6000	10	2022	С	5.00	27210
5	2022	С	6.00	5587	5	2022	С	6.00	25302
5	2022	Р	5.00	4534	9	2022	С	6.00	23450
8	2022	С	7.00	4386	5	2022	Р	3.00	22661
5	2022	С	6.50	4342	5	2022	С	5.00	21926
6	2022	С	7.00	3741	8	2022	С	6.00	21551
6	2022	Р	5.00	3611	6	2022	С	6.00	21243
7	2022	С	7.00	3505	10	2022	Р	3.00	20875
8	2022	Р	5.00	3050	5	2022	С	7.00	20430
7	2022	С	9.00	3000	5	2022	Р	2.50	19874
6	2022	С	10.00	2892	5	2022	Р	4.50	19864
7	2022	С	6.00	2890	7	2022	С	6.00	19302
6	2022	С	6.50	2878	6	2022	Р	4.00	18446
5	2022	С	8.00	2620	5	2022	Р	3.50	18203
7	2022	Р	4.75	2600	8	2022	С	7.00	18048
6	2022	С	6.00	2563	6	2022	С	5.00	17824
5	2022	Р	5.50	2508	12	2022	С	5.00	17771
5	2022	Р	5.25	2315	5	2022	P	2.75	17685
5	2022	Р	4.50	2136	7	2022	С	7.00	17614
8	2022	С	10.00	2126	7	2022 2022	P P	3.25	17505
6	2022	Р	4.50	2006	10		P	2.50	17361
7	2022	Р	5.00	2004	6 10	2022	P	3.00 4.00	17220
7	2022	С	11.00	2000		2022	P C		16361
8	2022	Р	4.75	2000	9 5	2022 2022	P	7.00 3.75	16267 16065
5	2022	С	5.50	1848	5 6	2022	P	3.75	15962
5	2022	С	6.10	1509	6	2022	F C	3.50 7.00	15962
6	2022	С	5.50	1481	1	2022	c	6.00	15949
5	2022	С	5.90	1429	10	2023	c	7.00	15625
4	2023	С	6.00	1200	9	2022	P	2.50	15366
5	2023	С	6.00	1200	9 1	2022	C	5.00	15215
6	2023	С	6.00	1200	9	2023	P	2.75	14933
7	2023	С	6.00	1200	10	2022	P	2.00	14675
8	2023	С	6.00	1200	10	2022	P	3.50	14622
9	2023	С	6.00	1200	7	2022	P	3.50	14531
10	2023	С	6.00	1200	5	2022	c	8.00	14526
8	2022	С	9.00	1027	12	2022	c	6.00	14509
5	2022	С	7.50	1011	8	2022	P	3.00	14197
7	2022	С	5.50	1007	6	2022	P	3.75	14166
7	2022	C	6.50	1001	5	2022	c	3.00	13733
5	2022	P	5.60	996	7	2022	c	5.00	13727
10	2022	С	6.00	964	7	2022	P	3.00	13688
9	2022	P	4.75	900	7	2022	c	8.00	13549
6	2022	C	8.50	890	6	2022	P	3.25	13517
1	2023	C	10.00	849	6	2022	C	3.00	13438
5	2022	C	5.60	790	6	2022			
					-		Source	4.5 CME, ICE	

Nat Gas Futures Open Interest CME and ICE Combined

CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 M									
	Current	Prior	Daily Change		Current	Prior	Daily Change		
MAY 22	230687	232313	-1626	MAY 22	79654	81785	-2131		
JUN 22	79787	76923	2864	JUN 22	65749	66377	-628		
JUL 22	100975	100931	44	JUL 22	69473	68666	807		
AUG 22	48595	44607	3988	AUG 22	60443	60318	125		
SEP 22	75839	75302	537	SEP 22	64899	65299	-400		
OCT 22	97070	87190	9880	OCT 22	72688	71391	1297		
NOV 22	44702	44198	504	NOV 22	53388	53421	-33		
DEC 22	44521	44908	-387	DEC 22	59649	59653	-5		
JAN 23	64774	65400	-626	JAN 23	67327	67654	-327		
FEB 23	20267	20447	-180	FEB 23	46911	46757	154		
MAR 23	39739	40602	-863	MAR 23	52131	52002	129		
APR 23	52883	52800	83	APR 23	51290	51100	190		
MAY 23	35393	31640	3753	MAY 23	45090	45329	-239		
JUN 23	18398	17967	431	JUN 23	42088	41997	92		
JUL 23	15869	15744	125	JUL 23	41643	41595	48		
AUG 23	12121	11345	776	AUG 23	41240	41155	85		
SEP 23	15388	15240	148	SEP 23	41140	41056	84		
OCT 23	33821	33270	551	OCT 23	46318	46092	226		
NOV 23	11959	11917	42	NOV 23	41157	41137	20		
DEC 23	14118	14004	114	DEC 23	36847	36824	24		
JAN 24	20582	20526	56	JAN 24	34834	34774	61		
FEB 24	4679	4640	39	FEB 24	23806	23759	46		
MAR 24	15618	15516	102	MAR 24	29749	29694	56		
APR 24	10674	10675	-1	APR 24	22412	22395	17		
MAY 24	2534	2533	1	MAY 24	21115	21199	-84		
JUN 24	1729	1646	83	JUN 24	21165	21213	-48		
JUL 24	1683	1641	42	JUL 24	21947	21939	8		
AUG 24	2980	2978	2	AUG 24	22113	22105	8		
SEP 24	1320	1321	-1	SEP 24	20676	20668	8		
OCT 24	6696	6695	1	OCT 24	22429	22561	-131		



Market Report



		Cash	Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	5.55	5.23	-0.32
TETCO M3	\$/MMBtu	5.36	4.73	-0.63
FGT Zone 3	\$/MMBtu	5.43	5.50	0.07
Zone 6 NY	\$/MMBtu	5.43	4.64	-0.79
Chicago Citygate	\$/MMBtu	5.54	5.26	-0.28
Michcon	\$/MMBtu	5.56	5.22	-0.34
Columbia TCO Pool	\$/MMBtu	5.25	4.80	-0.45
Ventura	\$/MMBtu	4.89	5.08	0.19
Rockies/Opal	\$/MMBtu	5.17	4.92	-0.24
El Paso Permian Basin	\$/MMBtu	5.00	4.46	-0.54
Socal Citygate	\$/MMBtu	5.64	5.04	-0.60
Malin	\$/MMBtu	5.30	4.94	-0.36
Houston Ship Channel	\$/MMBtu	5.53	5.17	-0.36
Henry Hub Cash	\$/MMBtu	5.68	5.08	-0.60
AECO Cash	C\$/GJ	4.78	3.91	-0.87
Station2 Cash	C\$/GJ	4.45	4.75	0.30
Dawn Cash	C\$/GJ	5.54	5.28	-0.26

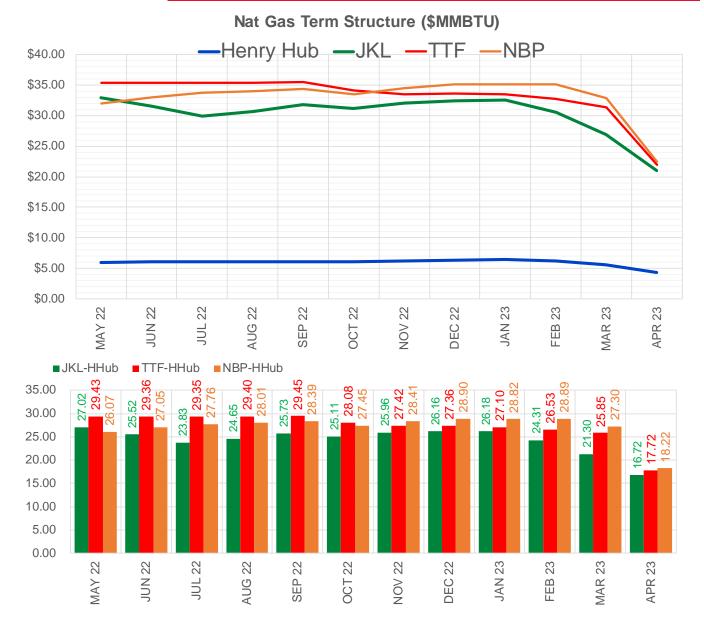
5 April 2022

Source: CME, Bloomberg



				vs. 4 Weeks	3
	Units	Current Price	vs. Last V	Veek Ago	vs. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224	a 0.000	0.000	2 .179
NatGas Oct21/Nov21	\$/MMBtu	0.361	0.000	0.000	a 0.281
NatGas Oct21/Jan22	\$/MMBtu	-1.817	a 0.000	0.000	-2.129
NatGas Apr22/Oct22	\$/MMBtu	0.531	a 0.413	a 0.403	a 0.491
WTI Crude	\$/Bbl	103.28	-2.680) 🔻 -16.120	4 4.630
Brent Crude	\$/Bbl	107.53	-4.950) 🔻 -15.680	4 5.380
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	0.000	0.000	▲ 0.000
Heating Oil	cents/Gallon	354.61	-23.73	0 🔻 -37.540	177.370
Propane, Mt. Bel	cents/Gallon	1.36	-0.076	6 🔻 -0.239	a 0.402
Ethane, Mt. Bel	cents/Gallon	0.45	a 0.028	6 0.030	a 0.237
Coal, PRB	\$/MTon	12.30	0.000	0.000	▲ 0.000
Coal, PRB	\$/MMBtu	0.70			
Coal, ILB	\$/MTon	31.05	a 0.000	0.000	a 0.000
Coal, ILB	\$/MMBtu	1.32			

Market Report

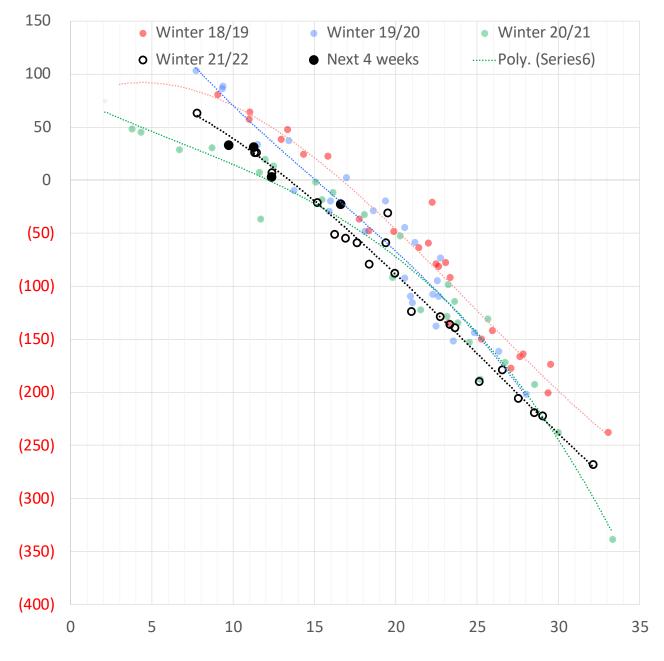


	MAY 22	JUN 22	JUL 22	AUG 22	SEP 22	OCT 22	NOV 22	DEC 22	JAN 23	FEB 23	MAR 23	APR 23
Henry Hub	\$5.928	\$6.002	\$6.060	\$6.063	\$6.055	\$6.067	\$6.137	\$6.276	\$6.387	\$6.201	\$5.578	\$4.283
JKL	\$32.950	\$31.525	\$29.885	\$30.710	\$31.780	\$31.175	\$32.100	\$32.435	\$32.565	\$30.515	\$26.880	\$21.005
JKL-HHub	\$27.022	\$25.523	\$23.825	\$24.647	\$25.725	\$25.108	\$25.963	\$26.159	\$26.178	\$24.314	\$21.302	\$16.722
TTF	\$35.357	\$35.363	\$35.408	\$35.460	\$35.508	\$34.146	\$33.560	\$33.634	\$33.487	\$32.732	\$31.425	\$22.001
TTF-HHub	\$29.429	\$29.361	\$29.348	\$29.397	\$29.453	\$28.079	\$27.423	\$27.358	\$27.100	\$26.531	\$25.847	\$17.718
NBP	\$32.000	\$33.047	\$33.817	\$34.074	\$34.448	\$33.513	\$34.548	\$35.177	\$35.207	\$35.093	\$32.876	\$22.506
NBP-HHub	\$26.072	\$27.045	\$27.757	\$28.011	\$28.393	\$27.446	\$28.411	\$28.901	\$28.820	\$28.892	\$27.298	\$18.223

The risk of trading futures and options and other derivatives involves a substantial risk of loss and is not suitable for all persons. Each person must consider whether a particular trade, combination of trades, or strategy is suitable for that person's financial means and objectives. Past results are not necessarily indicative of future results. This communication may contain links to third party websites which are not under the control of and are not maintained by ION Energy Group, and ION Energy Group is not responsible for their content.

5 April 2022

Weather Storage Model - Next 4 Week Forecast



Market Report

ENERGY

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