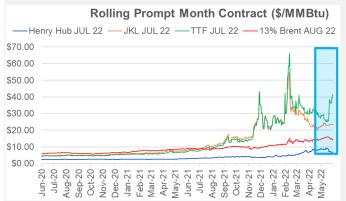


This week we look to dive into the storage situation unfolding in Europe. Russia escalated the gas crisis with the EU by reducing flows along key pipelines, specifically cutting Nord Stream flows by 60%. This comes ahead of annual maintenance on Nord Stream, which will entirely halt flows for two weeks in July. Europe is now once again scrambling to fill gas storage sites to acceptable levels before the winter, which is pushing TTF to peak premiums to other global benchmarks.

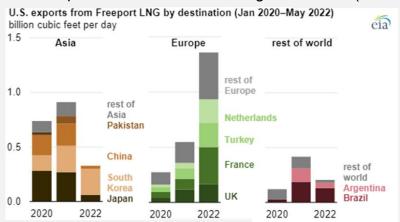
Here is a chart showing the rolling prompt contract for TTF, NBP, JKM, and HHub. This level of elevated price flows through the entire term structure until Summer 2023.





Up until the Freeport fiasco, prices were starting to calm down as European storage sites were filling at a tremendous rate despite dicey flows coming in from Russia. The loss of Freeport for at least 90 days was a big hit. Here are some data points from an EIA report this past week detailing Freeport LNG's operations.

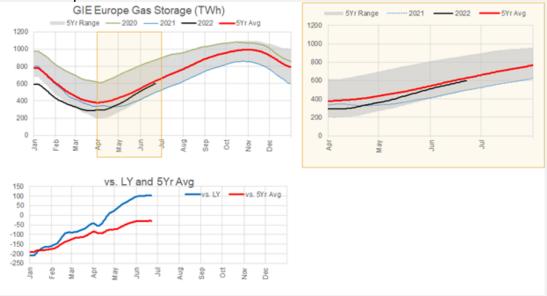
"In a shift from historical trends in LNG export destinations, and similar to other U.S. LNG export facilities, almost three-quarters (72%) of exports from Freeport LNG were shipped to Europe (including Turkey) during the first five months of this year, compared with 29% on average during 2021. During January–May 2022, LNG exports from Freeport LNG to Asia declined by 64% compared with 2021 and averaged 0.3 Bcf/d (17% of the total exports)."



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.



As seen above, Freeport had been moving approximately 1.4 Bcf/d to Europe between Jan and May. This helped storage reach 50.6% full, and nearly 100 TWh ahead of last year on the day of the Freeport event.



Since the event, European storage has continued to fill will tankers already in transit. We expect the YoY surplus to be impacted starting in July as US-origin imports will fall off.

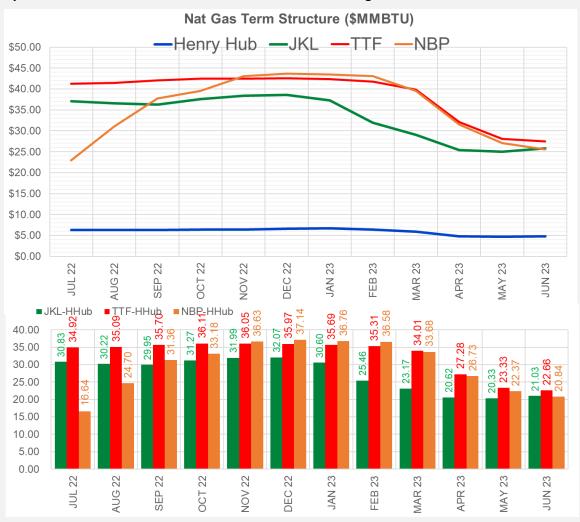
We can dive into the country-by-country storage levels to see which EU countries have the highest storage capacity and where they are in their fill cycle.

European Natural Gas Storage Levels					
	Level (TWh)	Capacity (TWh)	% Utilization		
Country	06/22/2022	06/22/2022	06/22/2022	YoY	vs. 5Yr Avg
Europe	602.6	1100.3	55%	9%	-3%
Germany	141.6	240.4	59%	20%	-1%
Italy	107.5	193.4	56%	-9%	-13%
Netherlands Gas Storage (T	70.3	141.5	50%	22%	-3%
France	77.6	131.6	59%	13%	5%
Austria	41.1	95.5	43%	14%	-9%
Hungary	26.2	67.7	39%	-24%	-17%
Slovakia	19.8	36.0	55%	9%	-1%
Czech Republic Gas Storage	26.3	35.8	73%	31%	13%
Poland	35.3	36.4	97%	36%	35%
Spain	25.2	35.3	71%	5%	4%
Romania	13.1	32.8	40%	7%	-3%
Latvia	7.5	21.8	34%	34%	34%
United Kingdom Gas Storage	9.6	9.7	99%	80%	61%
Denmark	7.0	9.1	77%	37%	22%
Belgium	4.7	8.7	54%	14%	3%
Bulgaria	2.0	5.8	34%	2%	-15%
Croatia	1.3	4.8	27%	-18%	-24%
Portugal	3.6	3.6	100%	34%	27%
Ireland	1.6	1.8	87%	87%	87%
Sweden	0.0	0.1	29%	-37%	-11%
Non-EU					
Ukraine	62.9	324.0	19%	-16%	-19%



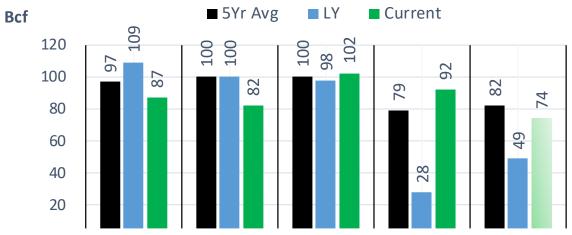
As seen, Germany has the largest amount of storage capacity and they are currently 20% ahead of last year's levels. With the recent event outlined above, there are concerns that Germany will not reach its targeted 90% level by November. Germany activated the "alert" phase of its emergency plan in response to reduced Russian flows and LNG imports. During the "alert phase," Germany is stepping up efforts to monitor consumption and secure storage levels. This phase does not include any conservation measures. This would only be enacted if the government concludes that "large-scale supply disruptions can be foreseen over the long term and there is no appropriate alternative supply option". This would be the "emergency phase."

Finally, here is a look at the term structure for the main gas markets.

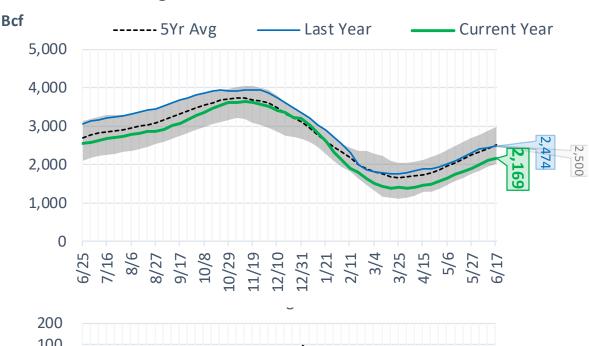


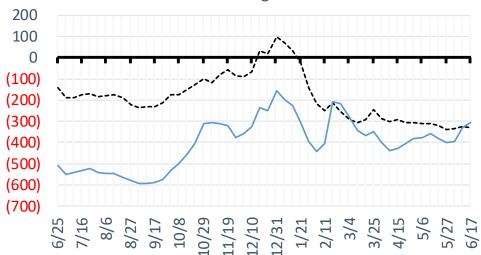


Total Lower 48 YoY Weekly Change



Total Lower 48 Storage Levels



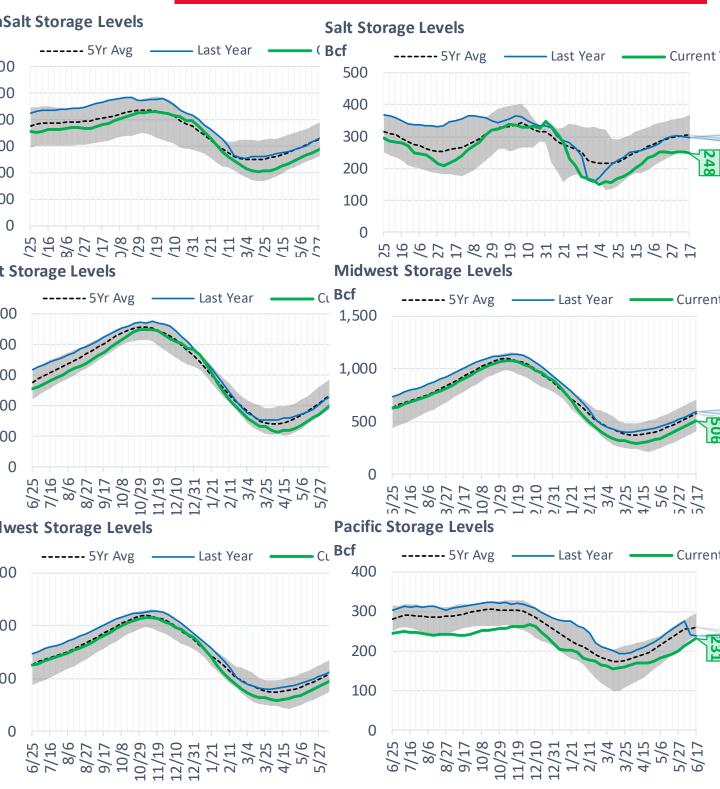




Natural Gas Storage Stats - Last 5 Weeks

	Current	Week - 1	Week - 2	Week - 3	Week - 4	Week - 5
Week Ending	17-Jun	10-Jun	3-Jun	27-May	20-May	13-May
Total Lower 48 Storage Level	2169	2095	2003	1901	1819	1732
Weekly Change	+74	+92	+102	+82	+87	+89
vs LY	-305	-330	-394	-398	-380	-358
vs 5Yr Avg	-331	-323	-336	-338	-320	-310
S. Central Salt Storage Level	248	251	251	248	252	251
Weekly Change	-3	0	+3	-4	+1	+10
vs LY	-48	-48	-51	-51	-42	-27
vs 5Yr Avg	-57	-53	-50	-49	-40	-33
S. Central NonSalt Storage Level	628	612	593	569	547	531
Weekly Change	+16	+19	+24	+22	+16	+24
vs LY	-69	-82	-85	-87	-84	-74
vs 5Yr Avg	-76	-76	-77	-82	-83	-77
Midwest Storage Level	506	482	454	426	394	364
Weekly Change	+24	+28	+28	+32	+30	+22
vs LY	-85	-85	-89	-93	-101	-106
vs 5Yr Avg	-71	-68	-69	-68	-73	-77
East Storage Level	430	407	376	345	325	296
Weekly Change	+23	+31	+31	+20	+29	+22
vs LY	-54	-52	-64	-64	-56	-60
vs 5Yr Avg	-71	-67	-72	-73	-63	-67
Mountain Storage Level	128	122	118	113	109	103
Weekly Change	+6	+4	+5	+4	+6	+7
vs LY	-40	-42	-41	-37	-34	-31
vs 5Yr Avg	-25	-25	-23	-20	-19	-18
Pacific Storage Level	231	221	211	200	193	187
Weekly Change	+10	+10	+11	+7	+6	+4
vs LY	-8	-21	-64	-66	-62	-58
vs 5Yr Avg	-29	-34	-44	-45	-42	-38







EIA Storage Week Balances

	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	WoW	vs. 4W
Lower 48 Dry Production	95.3	96.3	97.0	96.4	95.9	95.9	▼ 0.0	▼ -0.5
Canadian Imports	4.9	4.9	4.8	5.4	6.1	5.6	▼ -0.5	0.3
L48 Power	30.4	30.0	30.4	32.3	37.8	37.2	▼-0.6	4.5
L48 Residential & Commercial	10.0	11.6	9.1	8.6	8.3	8.4	0.1	▼ -1.0
L48 Industrial	21.3	20.2	21.5	21.4	21.4	20.3	▼ -1.1	▼-0.8
L48 Lease and Plant Fuel	5.1	5.2	5.2	5.2	5.2	5.2	▼ 0.0	▼ 0.0
L48 Pipeline Distribution	2.3	2.4	2.2	2.2	2.5	2.5	▼ 0.0	0.2
L48 Regional Gas Consumption	69.1	69.4	68.4	69.8	75.2	73.6	▼-1.6	2.9
Net LNG Exports	12.2	13.0	12.8	12.3	10.7	10.6	▼ 0.0	▼-1.6
Total Mexican Exports	7.0	7.0	7.1	7.1	7.2	7.0	▼-0.2	▼ -0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	11.9 12.4 -0.5	11.6 11.7 -0.1	13.5 14.6 -1.0	12.7 13.1 -0.4	9.0 10.6 -1.6	10.3	1.3	

Monthly Balances									
-	2Yr Ago	LY					MTD		
	Jun-20	Jun-21	Feb-22	Mar-22	Apr-22	May-22	Jun-22	MoM	vs. LY
Lower 48 Dry Production	87.9	93.2	92.7	93.5	96.0	96.1	96.2	0.1	2.9
Canadian Imports	4.0	4.8	6.5	5.2	5.8	5.1	5.6	0.5	▲ 0.8
L48 Power	34.9	35.9	28.7	25.5	24.7	28.8	35.6	6.8	▼-0.3
L48 Residential & Commercial	8.8	8.9	43.3	31.5	22.5	12.3	8.5	▼-3.8	- 0.4
L48 Industrial	20.0	20.2	22.1	19.7	21.4	20.9	21.1	0.2	0.9
L48 Lease and Plant Fuel	4.8	5.0	5.1	5.2	5.2	5.2	5.2	0.0	0.2
L48 Pipeline Distribution	2.3	2.4	3.5	2.9	2.6	2.3	2.4	0.1	▼ 0.0
L48 Regional Gas Consumption	70.8	72.5	102.7	84.7	76.4	69.5	72.8	3.3	0.3
Net LNG Exports	4.0	10.2	12.4	12.9	12.3	12.5	11.3	▼-1.2	1.2
Total Mexican Exports	5.5	7.4	6.2	6.5	6.7	7.0	7.1	0.1	▼-0.3
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	11.5	8.0	-22.1	-5.4	6.3	12.2	10.6		

Source: Bloomberg, analytix.ai

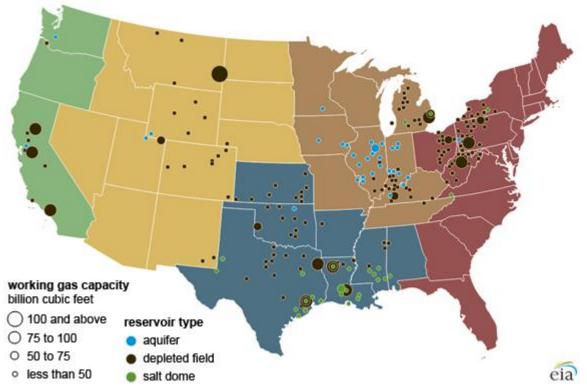
Regional S/D Models Storage Projection

Week Ending 24-Jun

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	11.2	0.2	11.4	80
East	2.0	1.7	3.7	26
Midwest	5.6	-1.1	4.5	31
Mountain	4.8	-3.8	0.9	7
South Central	-2.7	4.2	1.6	11
Pacific	1.5	-0.8	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

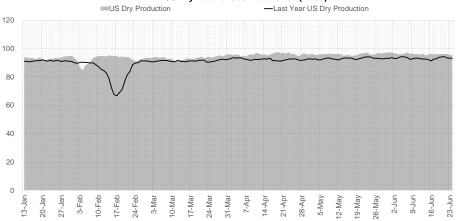


Weather Storage Model - Next 4 Week Forecast Summer 19 Summer 20 Apr-Aug • Summer 20 Sept-Oct Summer 18 Summer 21 140 ONext 4 Weeks Summer 22 20 0 6 8 10 20 4 12 14 16 18 Avg Weekly TDDs

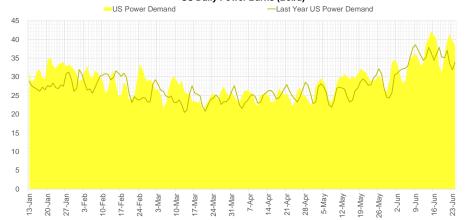
Note: this is not our official end of season forecast. This chart signifies where storage levels end with 10-year normal weather and current market tightness relative to last year

Supply - Demand Trends

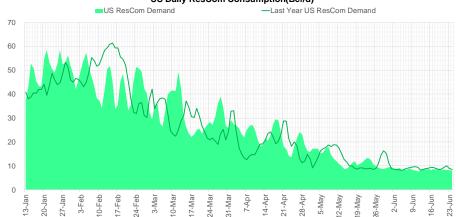
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



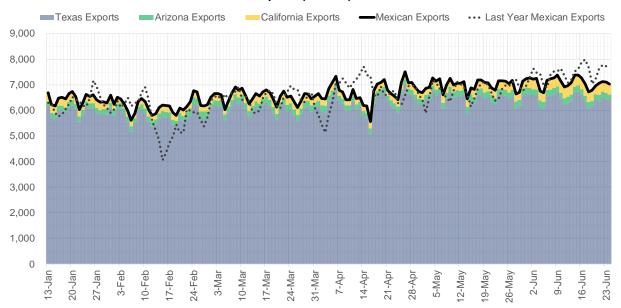
US Daily ResCom Consumption(Bcf/d)



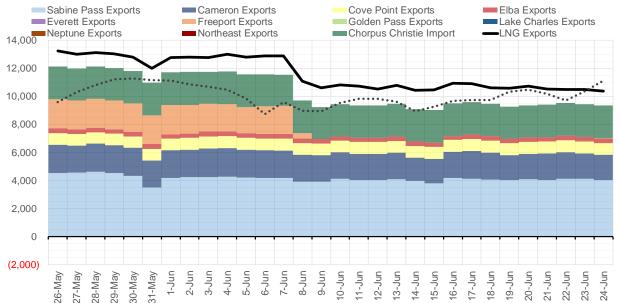
Source: Bloomberg



Mexican Exports (MMcf/d)



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



Source: Bloomberg



Nat Gas Options Volume and Open Interest CME and ICE data combined

CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
7	2022	Р	6.00	8842	7	2022	С	11.00	41668
7	2022	Р	5.50	6197	8	2022	С	10.00	40856
7	2022	С	6.50	5201	8	2022	С	12.00	37926
8	2022	С	10.00	4725	10	2022	С	6.00	35447
7	2022	P	6.50	4468	8	2022	С	10.50	30308
7	2022	Р	6.25	4305	10	2022	Р	6.00	24063
7	2022	С	7.00	3557	9	2022	С	6.00	23666
7	2022	P	5.25	3529	10	2022	С	5.00	23565
10	2022	Р	5.00	3364	7	2022	С	10.00	23551
8	2022	Р	5.50	3147	7	2022	С	9.50	23414
7	2022	С	6.60	3134	7	2022	Р	6.00	23177
8	2022	C	7.00	3075	7	2022	С	9.00	22839
8	2022	P	5.00	2787	8	2022	С	12.10	22003
7	2022	Р	5.75	2738	10	2022	Р	3.00	21986
7	2022	С	8.00	2367	8	2022	Р	6.00	21728
9	2022	C	10.00	2100	9	2022	С	10.00	21363
8	2022	Р	6.00	1848	10	2022	Р	3.50	20652
8	2022	С	8.00	1833	7	2022	С	11.10	20511
8	2022	С	6.50	1737	10	2022	Р	2.50	19870
9	2022	C	9.00	1716	8	2022	C	6.00	19647
10	2022	P	4.00	1698	5	2023	P	2.00	19502
3	2023	С	10.00	1675	9	2022	P	4.00	19418
8	2022	P	4.50	1606	7	2022	C	6.00	19197
8	2022	Р	5.75	1545	7	2022	С	7.00	19051
7	2022	С	7.25	1518	8	2022	С	7.00	18764
9	2022	P	6.00	1515	7	2022	С	8.00	18369
1	2023	Р	3.50	1500	9	2022	С	7.00	18289
10	2022	С	12.00	1427	12	2022	С	5.00	18221
9	2022	Р	5.00	1366	8	2022	C P	9.00	18016
7	2022	С	7.50	1349	7 7	2022	P P	7.00 3.25	17429 17194
7	2022	P	5.00	1213	, 10	2022 2022	P P	3.25 2.00	17158
10	2022	Р	4.50	1163					
10	2022	Р	3.00	1152	3 7	2023 2022	C P	10.00 5.50	17003 16577
7	2022	С	6.75	1129	10	2022	C	10.00	16486
3	2023	С	7.00	1115	10	2022	P	4.00	16342
3	2023	С	7.50	1100	8	2022	P	7.00	16159
6	2023	Р	4.00	1100	10	2023	P	2.00	16130
7	2022	Р	7.00	1059	2	2023	c	10.00	16024
8	2022	С	9.50	1045	9	2022	Č	4.00	15970
9	2022	Р	6.75	1021	9	2022	P	2.50	15293
9	2022	С	15.00	1011	7	2022	P	3.50	15279
10	2022	С	7.00	994	1	2023	C	10.00	15199
7	2022	Р	5.80	977	9	2022	P	2.75	14887
10	2022	С	8.00	977	7	2022	P	5.00	14864
8	2022	С	8.50	975	7	2022	P	4.50	14843
6	2023	С	6.00	955	12	2022	P	5.00	14720
8	2022	Р	6.70	930	10	2022	С	8.00	14635
4	2023	С	8.00	930	9	2022	Р	3.00	14600
5	2023	С	8.00	930	7	2022	С	7.5	14559.25

Source: CME, ICE

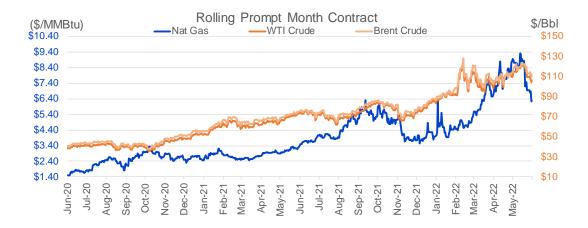


Nat Gas Futures Open Interest

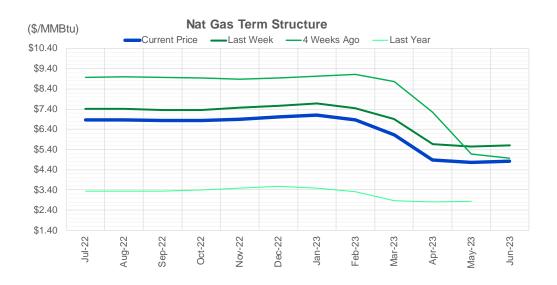
CME and ICE data combined

CME Henry H	Hub Futures (1)	0,000 MMBtu		ICE Henry I	Hub Futures Cont	ract Equiva	alent (10,000 MM
	Current	Prior	Daily Change		Current	Prior	Daily Change
JUL 22	16695	25223	-8528	JUL 22	73669	75451	-1782
AUG 22	108673	108465	208	AUG 22	77637	73634	4003
SEP 22	145947	149017	-3070	SEP 22	78858	78388	470
OCT 22	97327	97772	-445	OCT 22	73240	73941	-701
NOV 22	55132	54501	631	NOV 22	59970	59187	783
DEC 22	51744	51036	708	DEC 22	64474	62723	1751
JAN 23	61564	62679	-1115	JAN 23	67062	67102	-40
FEB 23	30059	28032	2027	FEB 23	54279	54130	149
MAR 23	45547	45941	-394	MAR 23	52059	52079	-20
APR 23	65989	66821	-832	APR 23	51359	50886	473
MAY 23	60666	61262	-596	MAY 23	50562	51279	-718
JUN 23	21693	22175	-482	JUN 23	44247	44512	-264
JUL 23	24623	24857	-234	JUL 23	43549	43834	-285
AUG 23	15742	15758	-16	AUG 23	42722	42969	-247
SEP 23	17093	17344	-251	SEP 23	41958	42181	-223
OCT 23	39071	39350	-279	OCT 23	49633	49184	448
NOV 23	11875	11680	195	NOV 23	44140	44185	-46
DEC 23	11902	12039	-137	DEC 23	40200	40193	7
JAN 24	18616	19029	-413	JAN 24	38934	39537	-603
FEB 24	6682	6480	202	FEB 24	27864	27728	136
MAR 24	15566	14931	635	MAR 24	32608	32551	57
APR 24	13572	13194	378	APR 24	27387	27323	65
MAY 24	6156	6520	-364	MAY 24	26435	26438	-3
JUN 24	2191	2174	17	JUN 24	22543	22482	61
JUL 24	1960	1944	16	JUL 24	22728	22650	78
AUG 24	2937	2928	9	AUG 24	22743	22670	72
SEP 24	1351	1343	8	SEP 24	22309	22223	86
OCT 24	7020	6997	23	OCT 24	25500	25439	61
NOV 24	4537	4524	13	NOV 24	23563	23459	104
DEC 24	7106	7091	15	DEC 24	25650	25575	75

Source: CME, ICE







	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23
Current Price	\$6.858	\$6.872	\$6.835	\$6.826	\$6.905	\$7.019	\$7.110	\$6.876	\$6.121	\$4.873	\$4.770	\$4.836
Last Week	\$7.420	\$7.406	\$7.370	\$7.369	\$7.463	\$7.574	\$7.669	\$7.457	\$6.906	\$5.674	\$5.547	\$5.598
vs. Last Week	-\$0.562	-\$0.534	-\$0.535	-\$0.543	-\$0.558	-\$0.555	-\$0.559	-\$0.581	-\$0.785	-\$0.801	-\$0.777	-\$0.762
4 Weeks Ago	\$8.971	\$8.993	\$8.972	\$8.929	\$8.898	\$8.936	\$9.032	\$9.125	\$8.773	\$7.257	\$5.178	\$4.969
vs. 4 Weeks Ago	-\$2.113	-\$2.121	-\$2.137	-\$2.103	-\$1.993	-\$1.917	-\$1.922	-\$2.249	-\$2.652	-\$2.384	-\$0.408	-\$0.133
Last Year	\$3.333	\$3.352	\$3.333	\$3.343	\$3.394	\$3.495	\$3.565	\$3.488	\$3.297	\$2.869	\$2.804	\$2.833
vs. Last Year	\$3.525	\$3.520	\$3.502	\$3.483	\$3.511	\$3.524	\$3.545	\$3.388	\$2.824	\$2.004	\$1.966	\$2.003

				vs. 4 Weeks	
	Units	Current Price	vs. Last Week	Ago	vs. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224	0.000	0.000	2.220
NatGas Oct21/Nov21	\$/MMBtu	0.361	0.000	0.000	0.314
NatGas Oct21/Jan22	\$/MMBtu	-1.817	0.000	0.000	▼ -2.033
NatGas Apr22/Oct22	\$/MMBtu	0.953	▼ -1.094	- 2.513	0.938
WTI Crude	\$/Bbl	104.27	▼ -13.320	▼ -9.820	3 0.970
Brent Crude	\$/Bbl	110.05	- 9.760	▼ -7.350	34.490
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	0.000	0.000	0.000
Heating Oil	cents/Gallon	433.79	-23.340	36.990	217.560
Propane, Mt. Bel	cents/Gallon	1.21	- 0.011	- 0.026	0.243
Ethane, Mt. Bel	cents/Gallon	0.64	-0.023	a 0.036	a 0.361
Coal, PRB	\$/MTon	12.30	0.000	0.000	0.000
Coal, PRB	\$/MMBtu	0.70			

Source: CME, Bloomberg



Baker Hughes Rig Counts

	Baker	Hughes 🤰			
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago
Oil	594	10	584	222	372
Gas	157	3	154	59	98
Miscellaneous	2	0	2	2	0
Directional	41	2	39	11	30
Horizontal	685	11	674	264	421
Vertical	27	0	27	8	19
Vertical	2.	·		·	
Canada Breakout	This Week	+/-	Last Week	+/-	Year Ago
Oil	104	0	104	22	82
Gas	50	-2	52	6	44
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago
Ardmore Woodford	3	0	3	2	1
Arkoma Woodford	4	0	4	3	1
Barnett	4	0	4	4	0
Cana Woodford	32	3	29	15	17
DJ-Niobrara	16	1	15	7	9
Eagle Ford	72	3	69	40	32
Granite Wash	2	1	1	0	2
Haynesville	69	0	69	20	49
Marcellus	39	0	39	12	27
Mississippian	1	-1	2	1	0
Permian	349	4	345	113	236
Utica	12	0	12	3	9
Williston	38	0	38	21	17