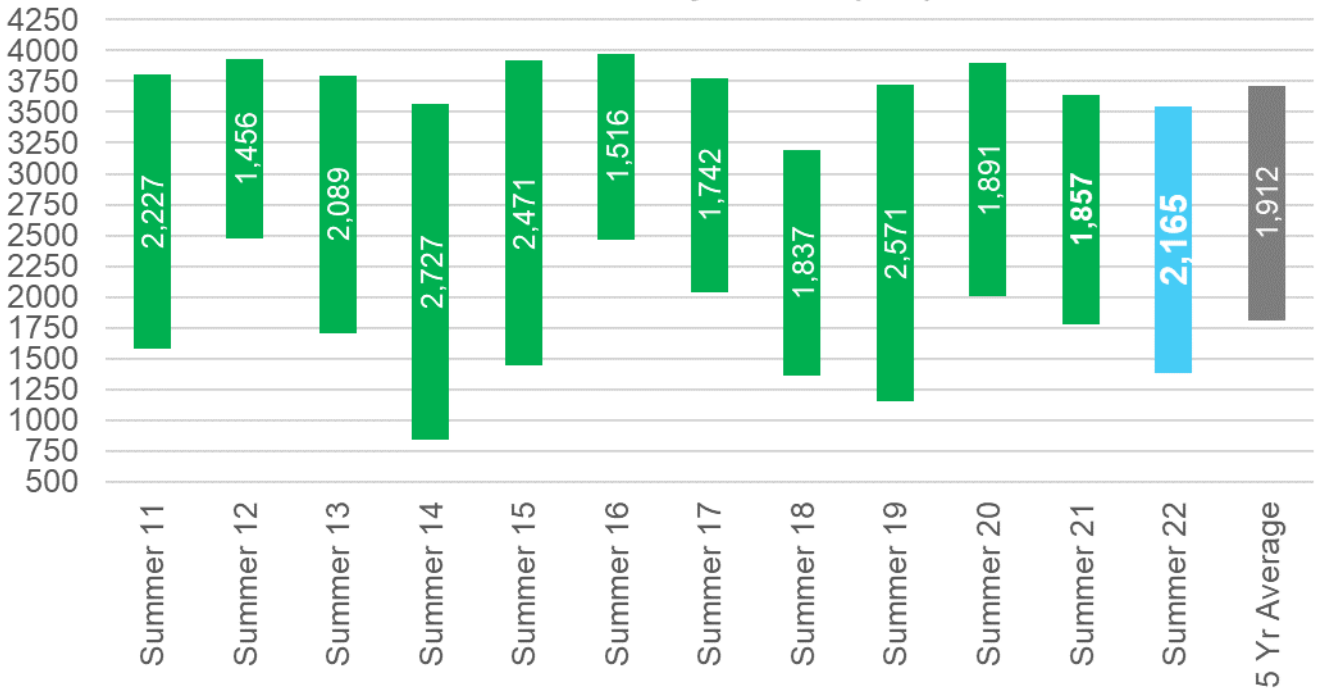
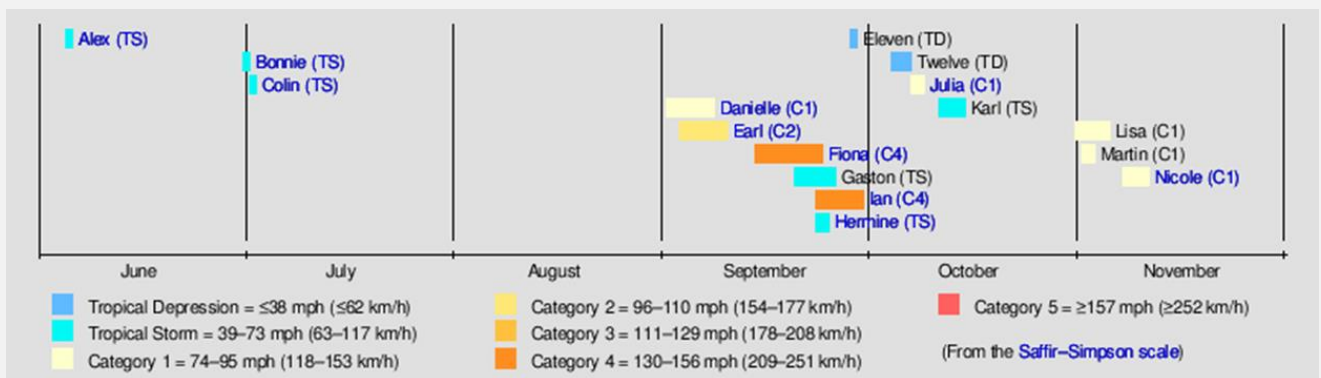


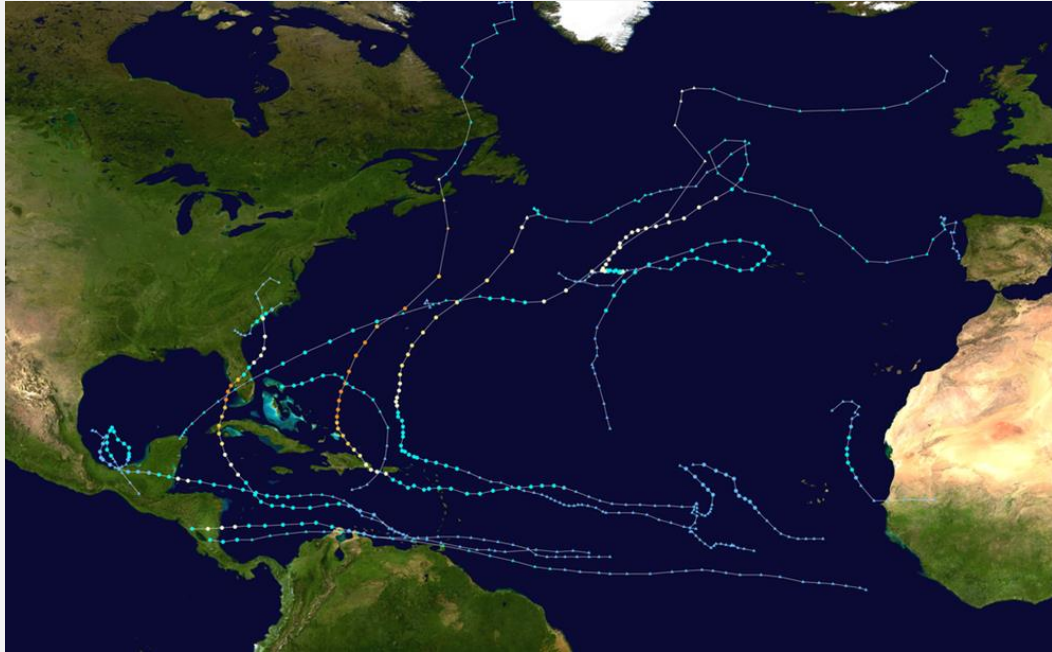
This week we by taking a look at how the summer finished off. We injected a total of 2165 Bcf, with the average summer injection over the last 5 years being 1912 Bcf. We would have been slightly behind the 5Yr average injection if it had not been for the Freeport outage. The Freeport LNG outage with starting on June 8th, added approximately 290 Bcf to domestic storage builds.

Total Summer Injections (Bcf)

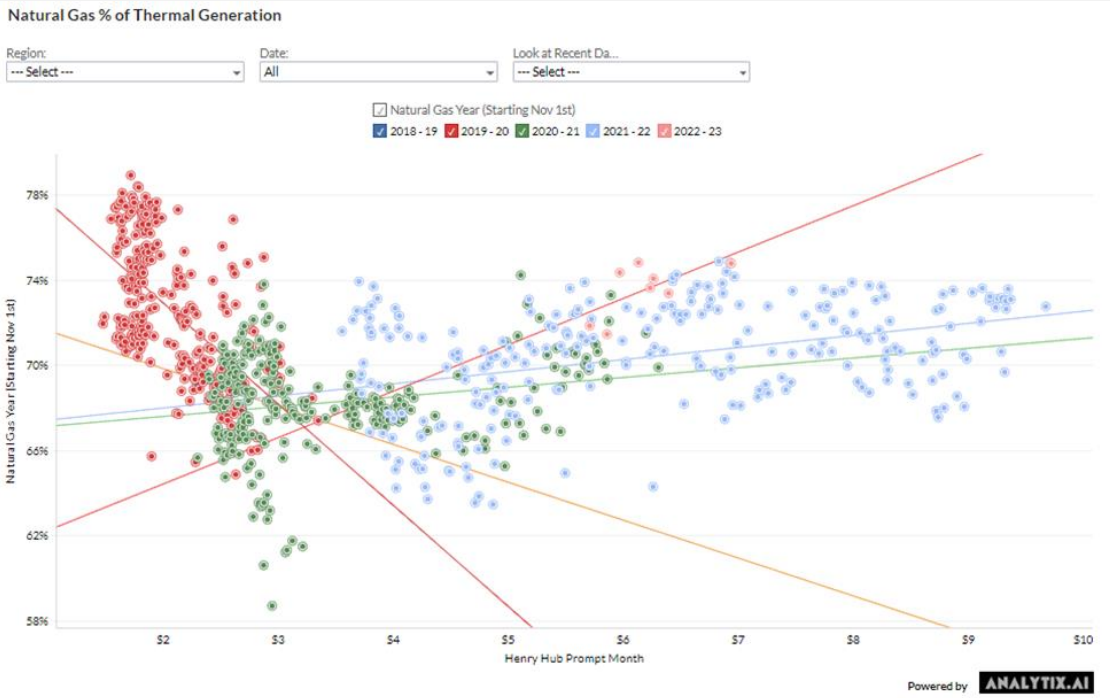


This year was also a very light hurricane season despite the strong forecast going in. In all there were 14 named storage, of which 8 turned into Hurricanes and 2 were being major Hurricanes

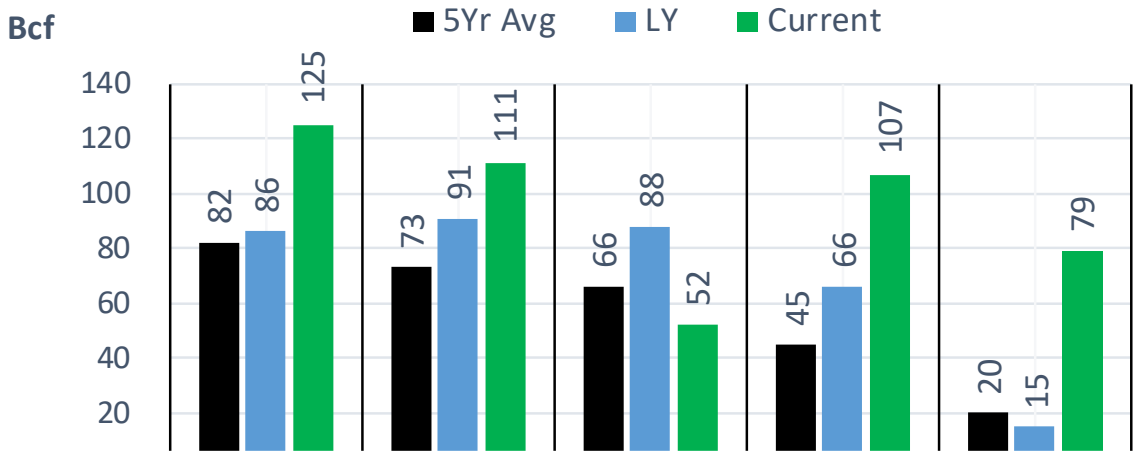




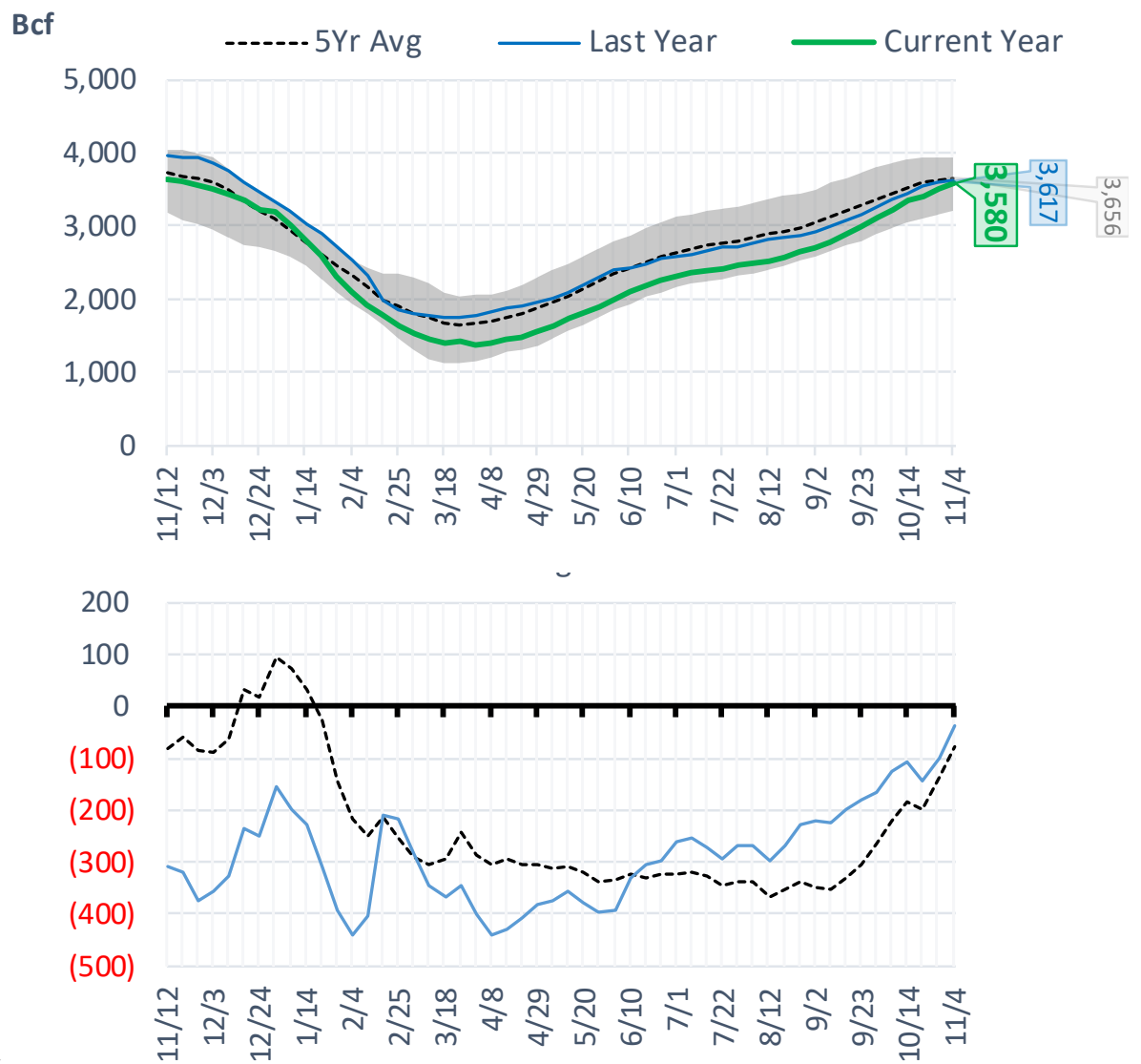
The last thing to note this summer is the wide range of prices. Typically the strong prices incent production to come on, and coal to gas switching to unwind. This year we did not see the same response. Production did finally come but not until the end of the season, and power burns remained elevated throughout the summer even when prices were in the \$9 range. Here is a quick view of how strong gas performed, i.e. making up between 65-70% of the thermal generation.



Total Lower 48 YoY Weekly Change



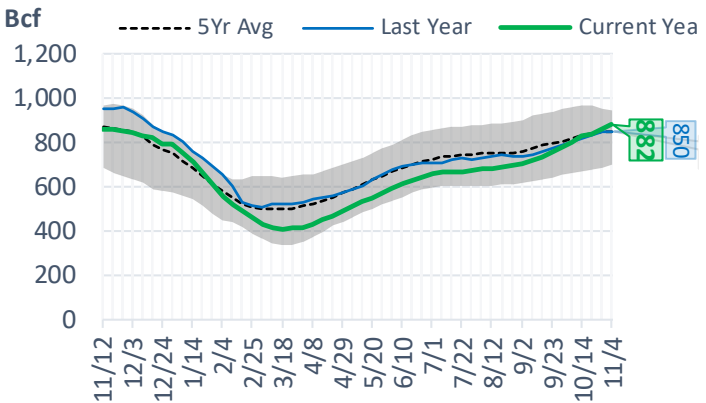
Total Lower 48 Storage Levels



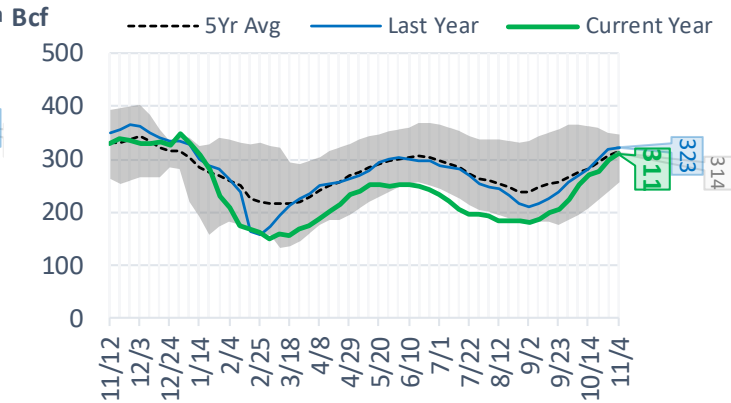
Natural Gas Storage Stats - Last 5 Weeks

Week Ending	Current 4-Nov	Week - 1 28-Oct	Week - 2 21-Oct	Week - 3 14-Oct	Week - 4 7-Oct	Week - 5 30-Sep
Total Lower 48 Storage Level	3580	3501	3394	3342	3231	3106
Weekly Change	+79	+107	+52	+111	+125	+129
vs LY	-37	-101	-142	-106	-126	-165
vs 5Yr Avg	-76	-135	-197	-183	-221	-264
S. Central Salt Storage Level	311	299	277	271	253	225
Weekly Change	+12	+22	+6	+18	+28	+21
vs LY	-12	-19	-24	-10	-15	-31
vs 5Yr Avg	-3	-7	-18	-11	-22	-41
S. Central NonSalt Storage Level	882	861	839	828	804	778
Weekly Change	+21	+22	+11	+24	+26	+24
vs LY	+32	+11	+1	+5	-4	-14
vs 5Yr Avg	+31	+11	-6	-6	-17	-30
Midwest Storage Level	1068	1042	1007	987	952	916
Weekly Change	+26	+35	+20	+35	+36	+37
vs LY	-6	-26	-41	-36	-41	-50
vs 5Yr Avg	-12	-30	-47	-43	-49	-54
East Storage Level	865	848	825	812	782	756
Weekly Change	+17	+23	+13	+30	+26	+35
vs LY	-32	-49	-57	-46	-49	-50
vs 5Yr Avg	-41	-55	-68	-65	-74	-77
Mountain Storage Level	208	204	199	195	190	184
Weekly Change	+4	+5	+4	+5	+6	+8
vs LY	-5	-9	-13	-16	-19	-21
vs 5Yr Avg	-5	-10	-15	-17	-21	-24
Pacific Storage Level	247	247	248	249	249	247
Weekly Change	0	-1	-1	0	+2	+4
vs LY	-11	-9	-7	-4	-2	0
vs 5Yr Avg	-43	-43	-42	-41	-40	-39

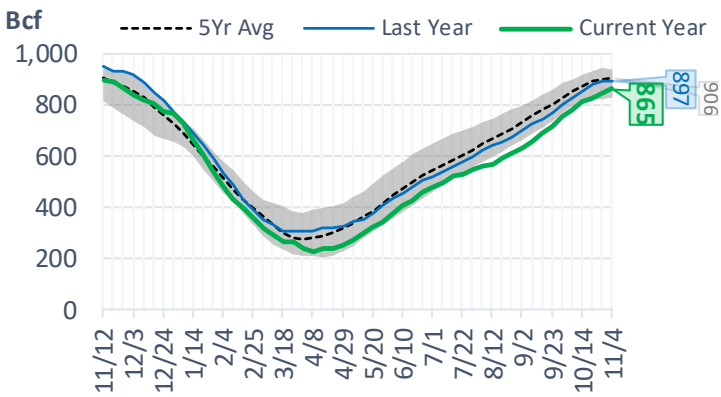
NonSalt Storage Levels



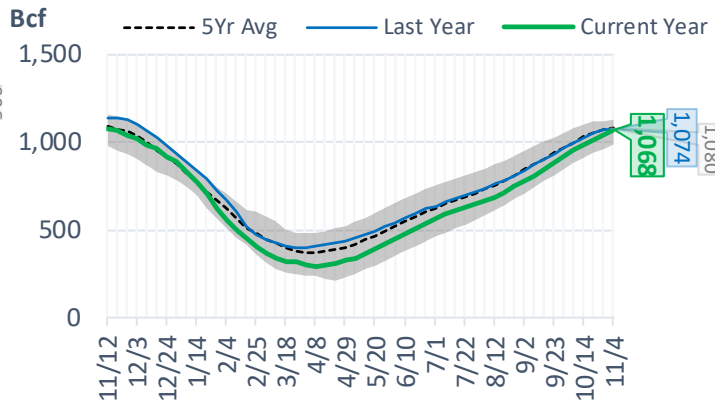
Salt Storage Levels



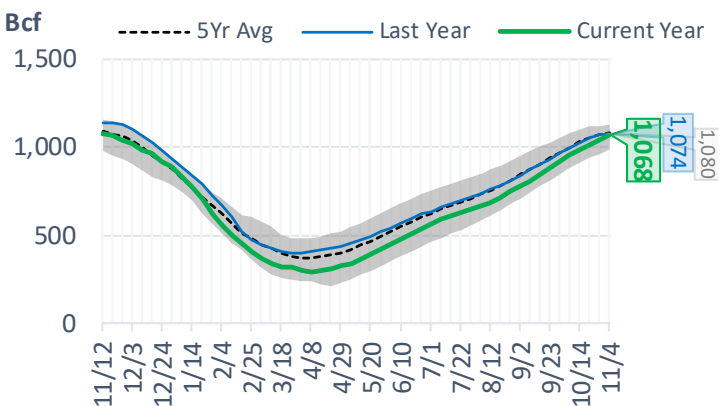
East Storage Levels



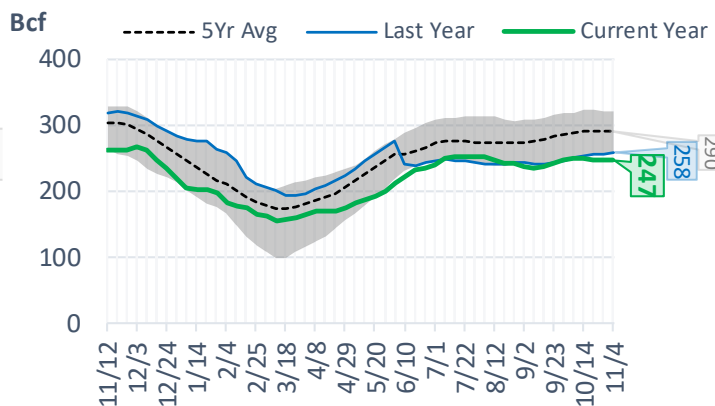
Midwest Storage Levels



Midwest Storage Levels



Pacific Storage Levels



EIA Storage Week Balances

	LY 12-Nov	14-Oct	21-Oct	28-Oct	LW 4-Nov	Current 11-Nov	WoW	vs. LY
Lower 48 Dry Production	96.5	101.7	100.4	101.1	101.0	100.2	▼-0.8	▲3.7
Canadian Imports	5.1	5.5	6.1	5.3	4.9	4.2	▼-0.8	▼-0.9
L48 Power	28.2	30.7	30.9	28.9	29.5	29.0	▼-0.5	0.8
L48 Residential & Commercial	22.2	14.7	20.9	15.9	17.7	17.8	▲0.1	-4.4
L48 Industrial	22.4	20.3	20.0	21.1	21.2	22.8	▲1.5	0.4
L48 Lease and Plant Fuel	5.4	5.7	5.6	5.6	5.6	5.6	▼0.0	0.2
L48 Pipeline Distribution	2.9	2.8	3.2	2.8	2.8	2.7	▼-0.1	-0.2
L48 Regional Gas Consumption	81.0	74.1	80.6	74.4	76.9	77.8	▲0.9	▼-3.2
Net LNG Exports	11.2	11.0	11.5	11.4	11.9	11.4	▼-0.5	▲0.2
Total Mexican Exports	6.2	6.6	6.7	6.4	6.3	6.1	▼-0.2	▼-0.1
Implied Daily Storage Activity	3.2	15.6	7.7	14.3	10.8	8.9	-1.9	5.8
EIA Reported Daily Storage Activity	3.7	15.9	7.4	15.3	11.3			
Daily Model Error	-0.6	-0.3	0.2	-1.0	-0.5			

Monthly Balances

	2Yr Ago Nov-20	LY Nov-21	Jul-22	Aug-22	Sep-22	Oct-22	MTD Nov-22	MoM	vs. LY
Lower 48 Dry Production	91.2	96.4	97.8	98.2	100.6	101.3	100.4	▼-0.9	▲3.9
Canadian Imports	4.6	5.3	5.9	5.4	5.9	5.7	4.5	▼-1.2	▼-0.8
L48 Power	25.7	29.3	44.8	43.8	37.0	30.1	29.2	▼-1.0	▼-0.1
L48 Residential & Commercial	24.4	28.2	8.2	7.8	8.9	16.6	18.8	▲2.2	▼-9.4
L48 Industrial	22.5	23.3	19.4	19.7	20.5	20.6	22.4	▲1.8	▼-0.9
L48 Lease and Plant Fuel	5.0	5.4	5.5	5.5	5.5	5.7	5.6	▼-0.1	▲0.2
L48 Pipeline Distribution	2.7	3.3	3.1	3.0	2.8	2.9	2.8	▼-0.1	▼-0.5
L48 Regional Gas Consumption	80.3	89.5	81.0	79.9	74.7	75.9	78.8	▲2.9	▼-10.8
Net LNG Exports	10.1	11.4	10.9	11.0	11.5	11.3	11.6	▲0.3	▲0.2
Total Mexican Exports	6.1	6.1	7.0	6.9	6.7	6.6	6.2	▼-0.3	▲0.1
Implied Daily Storage Activity	-0.7	-5.3	4.8	5.8	13.6	13.2	8.3		
EIA Reported Daily Storage Activity									
Daily Model Error					-0.5				

Source: Bloomberg, analytix.ai

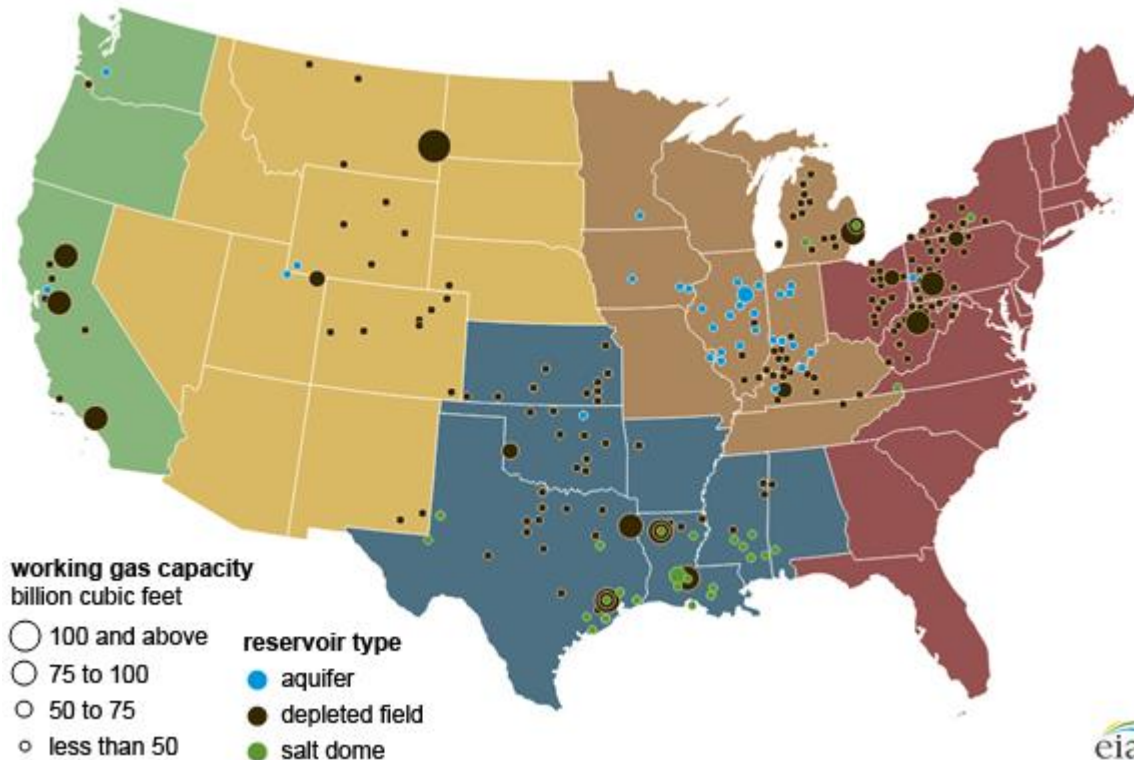
Regional S/D Models Storage Projection

Week Ending 11-Nov

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	9.9	-0.6	9.3	65
East	0.2	2.5	2.7	19
Midwest	2.4	0.4	2.9	20
Mountain	4.1	-4.2	0.0	0
South Central	3.8	0.8	4.7	33
Pacific	-0.7	-0.2	-0.9	-6

*Adjustment Factor is calculated based on historical regional deltas

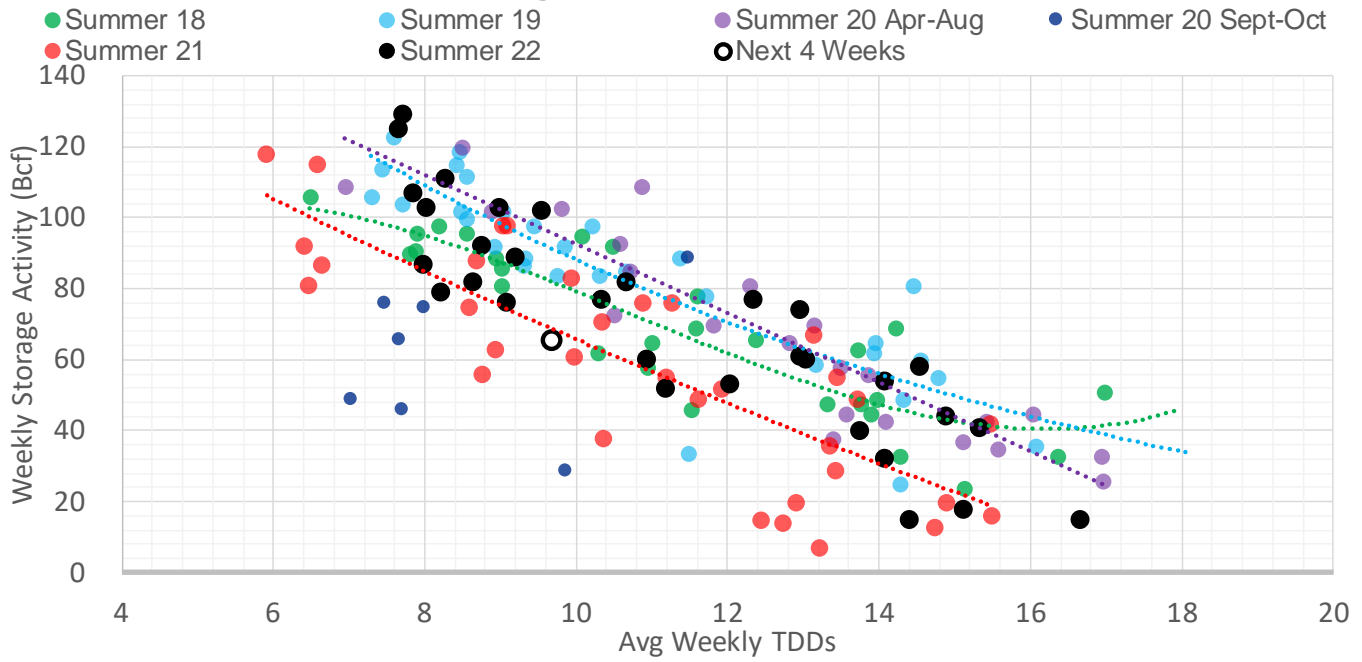
U.S. underground natural gas storage facilities by type (July 2015)



Weather Model Storage Projection

Next report and beyond		
Week Ending	GWDDs	Week Storage Projection
11-Nov	8.5	65
18-Nov	19.1	-68
25-Nov	21.6	-106
02-Dec	19.7	-86

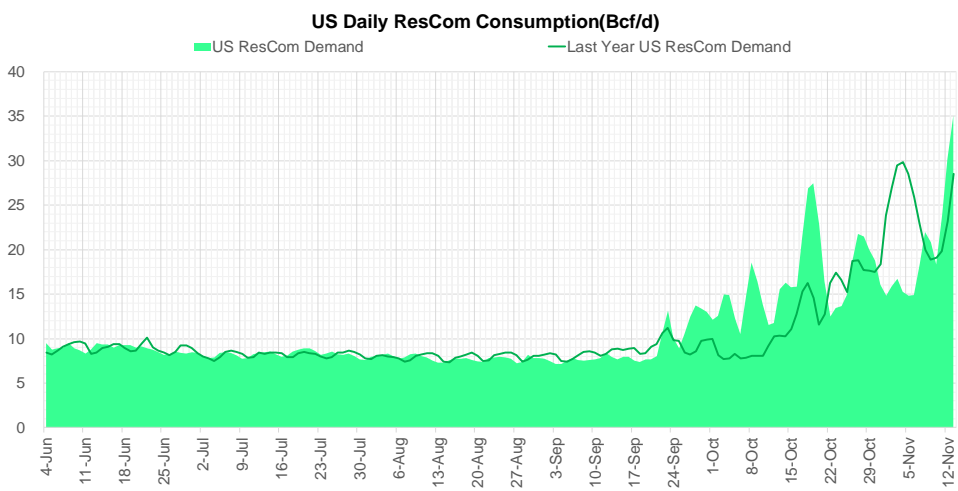
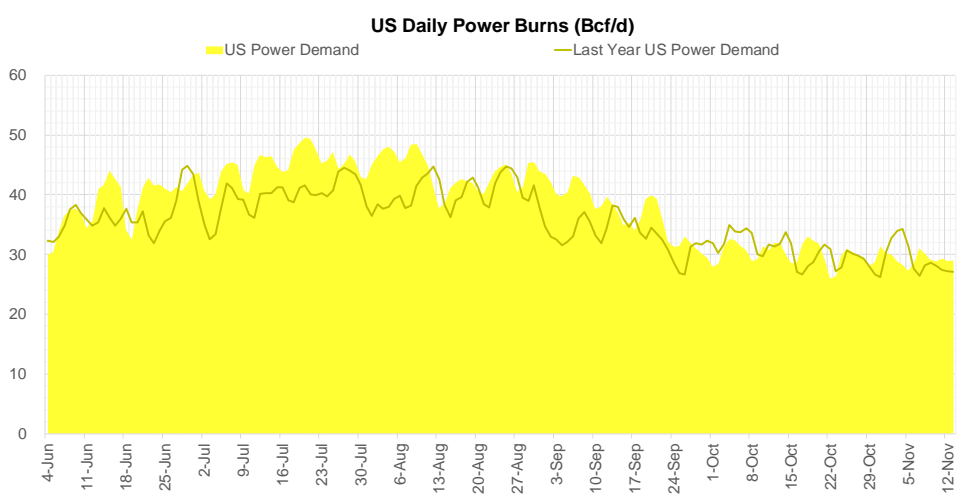
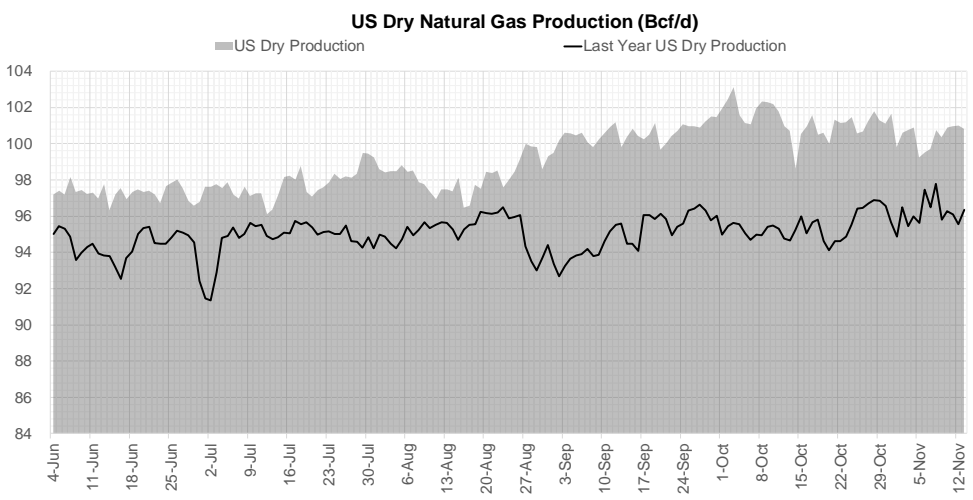
Weather Storage Model - Next 4 Week Forecast



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

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.

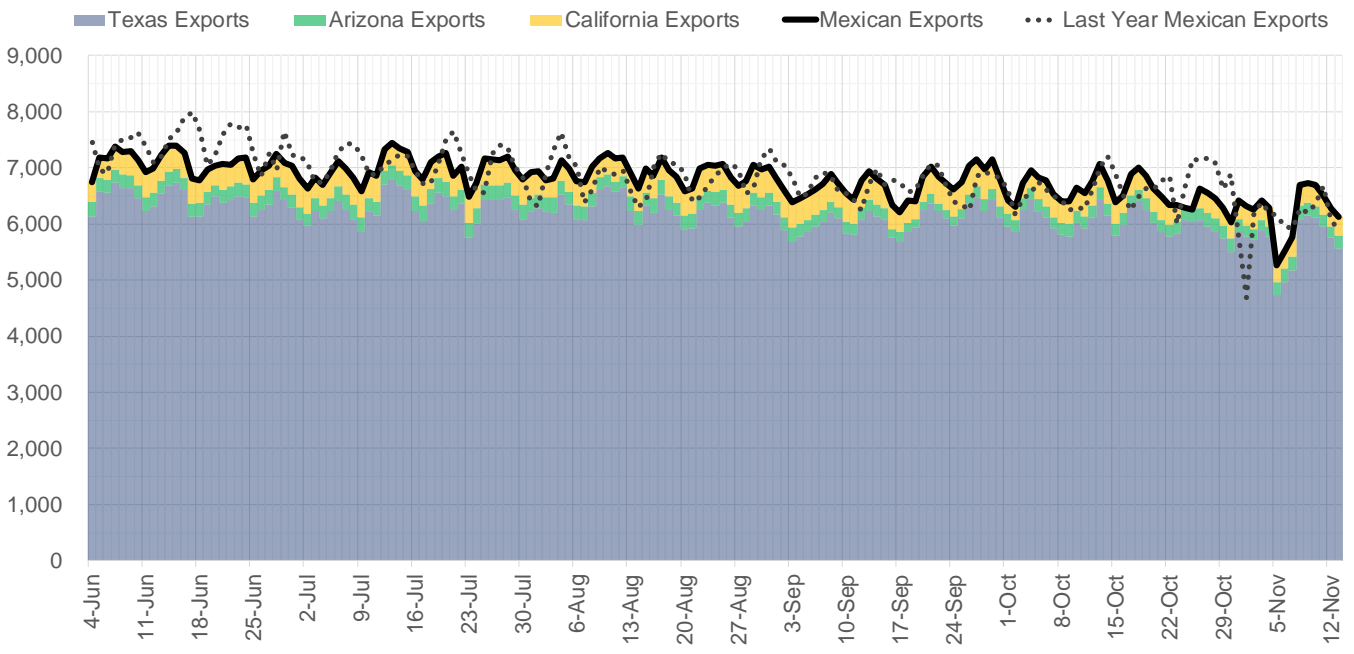
Supply – Demand Trends



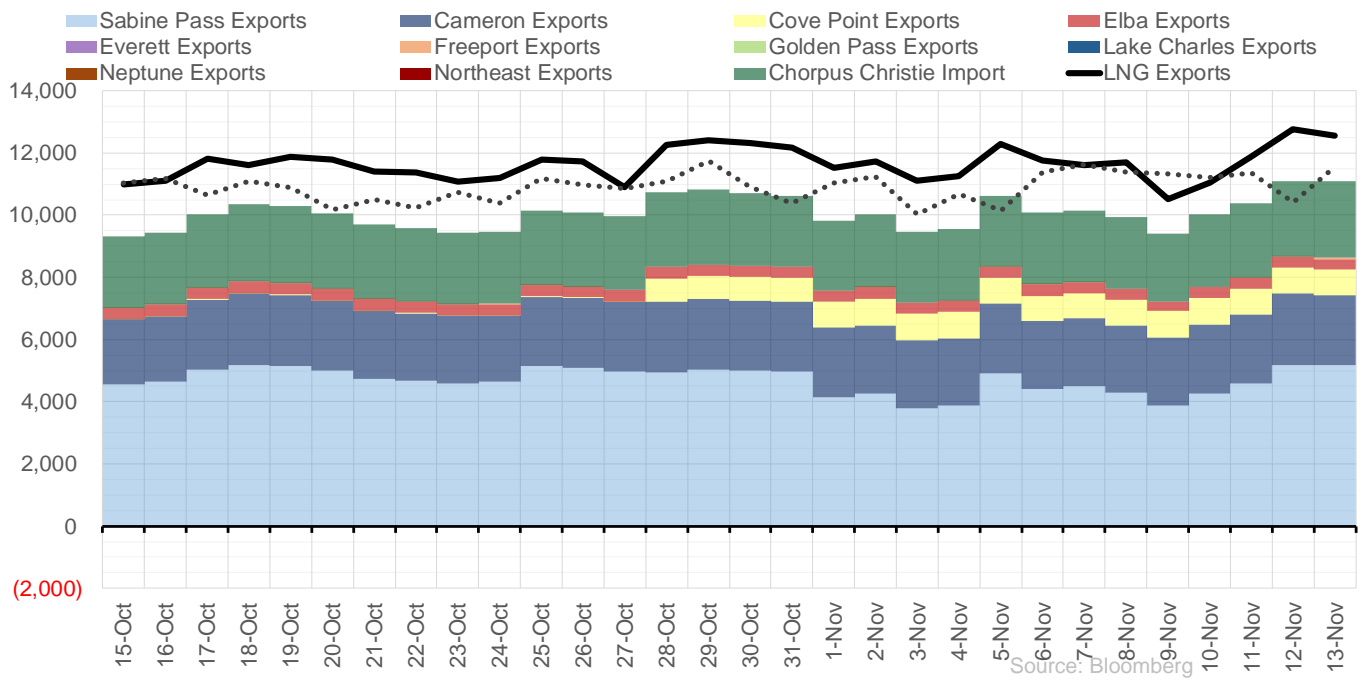
Source: Bloomberg

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Mexican Exports (MMcf/d)



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



Source: Bloomberg

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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
12	2022	P	4.75	9302	12	2022	P	4.00	48340
12	2022	P	4.50	8266	12	2022	P	5.00	41200
12	2022	P	5.00	4182	12	2022	C	10.00	33311
12	2022	C	7.50	3198	12	2022	P	4.50	30367
12	2022	P	6.00	3194	5	2023	P	2.00	30267
5	2023	P	3.00	2600	12	2022	P	6.00	28153
6	2023	P	3.00	2600	10	2023	P	3.00	26985
7	2023	P	3.00	2600	12	2022	P	3.50	26625
8	2023	P	3.00	2600	1	2023	C	10.00	24766
9	2023	P	3.00	2600	1	2023	P	5.00	24689
10	2023	P	3.00	2600	3	2023	C	10.00	24112
4	2023	P	3.00	2500	4	2023	P	3.00	23123
12	2022	C	7.00	2315	3	2023	P	4.00	22851
4	2023	P	2.00	2250	4	2023	P	2.00	22709
5	2023	P	2.00	2250	12	2022	C	6.00	22587
6	2023	P	2.00	2250	4	2023	P	3.50	21766
7	2023	P	2.00	2250	10	2023	P	2.00	21695
8	2023	P	2.00	2250	2	2023	C	10.00	21353
9	2023	P	2.00	2250	12	2022	C	7.00	20605
10	2023	P	1.00	2250	12	2022	C	8.00	20463
10	2023	P	2.00	2250	12	2022	P	3.00	20059
12	2022	P	5.50	2159	10	2023	P	2.50	19900
12	2022	C	8.00	1900	5	2023	P	3.00	19758
1	2023	P	5.50	1705	10	2023	P	4.00	19526
4	2023	P	4.50	1625	1	2023	P	3.00	19206
10	2023	P	1.50	1600	3	2023	P	3.00	18925
12	2022	C	10.00	1571	6	2023	P	2.00	18924
12	2022	P	5.25	1555	3	2023	C	20.00	18920
12	2022	P	4.00	1534	6	2023	P	3.00	18915
8	2023	P	4.50	1430	12	2022	P	4.75	18889
5	2023	P	4.50	1425	4	2023	P	4.00	18805
6	2023	P	4.50	1425	6	2023	P	3.50	18650
7	2023	P	4.50	1425	12	2022	C	5.00	18360
9	2023	P	4.50	1425	12	2022	P	5.50	18268
10	2023	P	4.50	1425	8	2023	P	2.00	18237
9	2023	P	1.50	1401	9	2023	P	2.00	18188
4	2023	P	1.50	1400	5	2023	P	3.50	18185
5	2023	P	1.50	1400	7	2023	P	2.00	18037
6	2023	P	1.50	1400	8	2023	P	3.00	17966
7	2023	P	1.50	1400	7	2023	P	3.00	17965
8	2023	P	1.50	1400	1	2023	P	4.00	17902
12	2022	C	6.50	1366	9	2023	P	3.00	17865
12	2022	P	5.75	1298	10	2023	P	3.50	17258
4	2023	P	2.50	1100	5	2023	P	4.00	17226
5	2023	P	2.50	1100	9	2023	P	4.00	17106
6	2023	P	2.50	1100	6	2023	P	4.00	17093
7	2023	P	2.50	1100	8	2023	P	3.50	16836
8	2023	P	2.50	1100	7	2023	P	3.50	16704
9	2023	P	2.50	1100	9	2023	P	3.50	16694
9	2023	P	2.50	1100	2	2023	C	8	16558

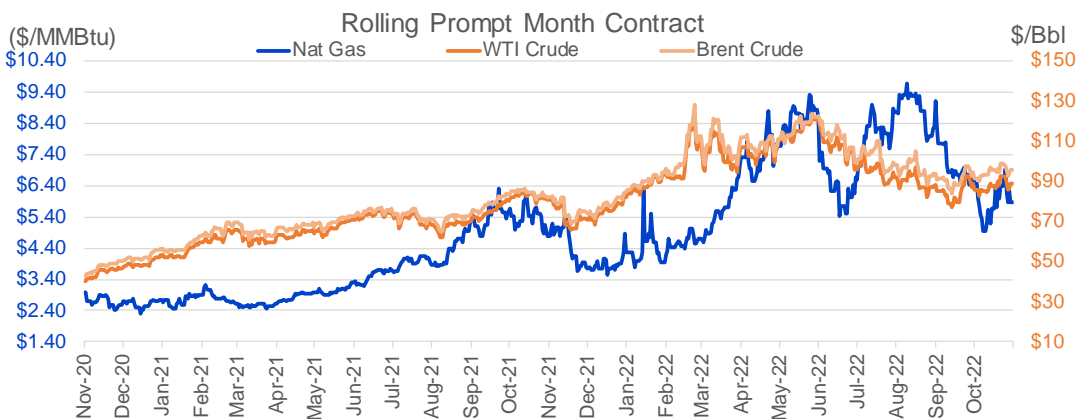
Source: CME, ICE

Nat Gas Futures Open Interest

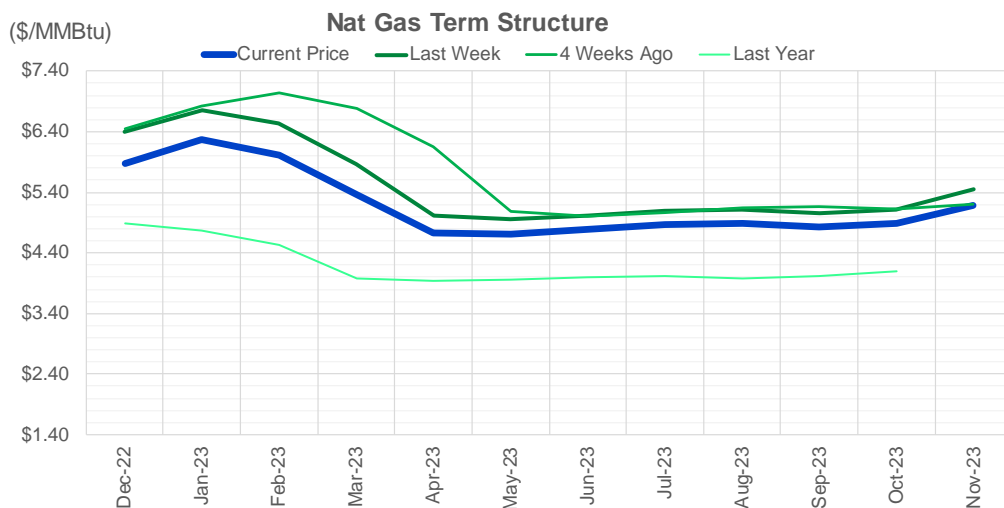
CME and ICE data combined

CME Henry Hub Futures (10,000 MMBtu)				ICE Henry Hub Futures Contract Equivalent (10,000 MM			
	Current	Prior	Daily Change		Current	Prior	Daily Change
DEC 22	65962	70251	-4289	DEC 22	87926	88006	-79
JAN 23	156041	151412	4629	JAN 23	76900	76335	566
FEB 23	65117	64612	505	FEB 23	67131	67690	-559
MAR 23	97776	97750	26	MAR 23	61394	61599	-205
APR 23	82727	82243	484	APR 23	57506	57849	-343
MAY 23	91076	91092	-16	MAY 23	59050	59992	-942
JUN 23	24524	24576	-52	JUN 23	50116	50343	-227
JUL 23	31745	31783	-38	JUL 23	49906	49985	-79
AUG 23	27497	26888	609	AUG 23	47819	47896	-77
SEP 23	29882	29713	169	SEP 23	46133	46178	-46
OCT 23	51046	51790	-744	OCT 23	60918	60443	475
NOV 23	21072	21298	-226	NOV 23	48020	48176	-156
DEC 23	29134	29734	-600	DEC 23	43307	43254	54
JAN 24	34554	35066	-512	JAN 24	46359	46526	-167
FEB 24	12043	11926	117	FEB 24	30569	30494	75
MAR 24	23737	23607	130	MAR 24	38451	38015	437
APR 24	22579	22332	247	APR 24	31253	30996	257
MAY 24	10166	10166	0	MAY 24	30661	30198	463
JUN 24	3483	3491	-8	JUN 24	27071	26883	188
JUL 24	4892	4863	29	JUL 24	26065	25846	219
AUG 24	4528	4534	-6	AUG 24	25454	25227	227
SEP 24	3270	3266	4	SEP 24	25380	25164	216
OCT 24	9754	9667	87	OCT 24	29902	29771	130
NOV 24	4901	4904	-3	NOV 24	26485	26472	13
DEC 24	8761	8762	-1	DEC 24	30300	30269	32
JAN 25	18822	18351	471	JAN 25	24740	24726	14
FEB 25	1817	1817	0	FEB 25	15711	15717	-5
MAR 25	6371	6351	20	MAR 25	17801	17772	29
APR 25	6502	6493	9	APR 25	16401	16379	22
MAY 25	2749	2749	0	MAY 25	15667	15640	27

Source: CME, ICE



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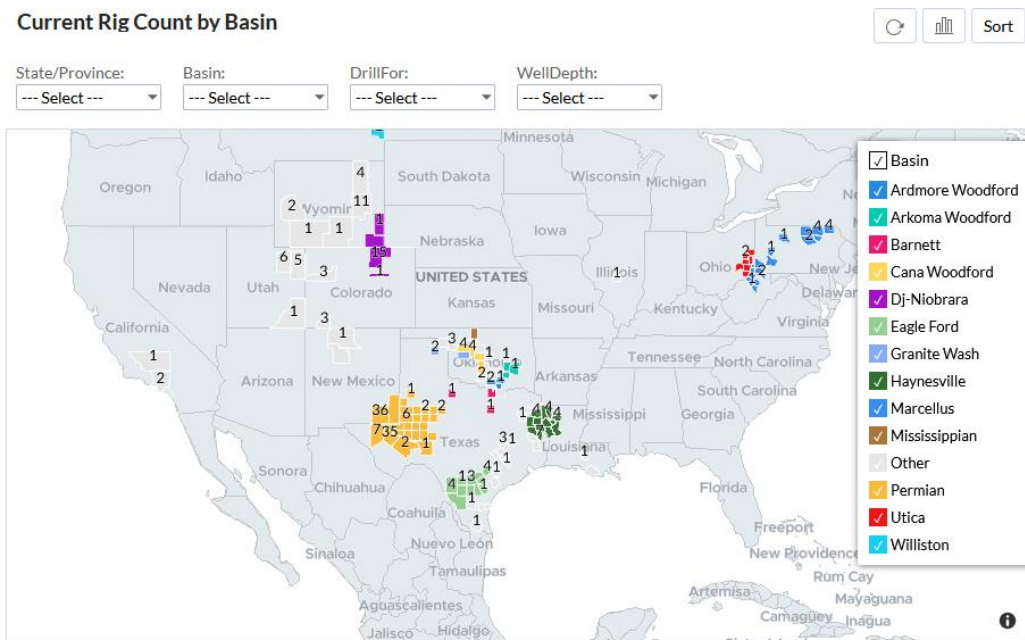
	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23
Current Price	\$5.879	\$6.263	\$6.022	\$5.369	\$4.728	\$4.712	\$4.787	\$4.868	\$4.880	\$4.824	\$4.879	\$5.176
Last Week	\$6.400	\$6.754	\$6.529	\$5.873	\$5.018	\$4.961	\$5.025	\$5.094	\$5.106	\$5.055	\$5.111	\$5.446
vs. Last Week	-\$0.521	-\$0.491	-\$0.507	-\$0.504	-\$0.290	-\$0.249	-\$0.238	-\$0.226	-\$0.226	-\$0.231	-\$0.232	-\$0.270
4 Weeks Ago	\$6.453	\$6.827	\$7.043	\$6.793	\$6.144	\$5.088	\$4.999	\$5.070	\$5.145	\$5.155	\$5.122	\$5.196
vs. 4 Weeks Ago	-\$0.574	-\$0.564	-\$1.021	-\$1.424	-\$1.416	-\$0.376	-\$0.212	-\$0.202	-\$0.265	-\$0.331	-\$0.243	-\$0.020
Last Year	\$4.791	\$4.880	\$4.775	\$4.529	\$3.986	\$3.929	\$3.960	\$4.005	\$4.009	\$3.987	\$4.014	\$4.092
vs. Last Year	\$1.088	\$1.383	\$1.247	\$0.840	\$0.742	\$0.783	\$0.827	\$0.863	\$0.871	\$0.837	\$0.865	\$1.084

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224	▲ 0.000	▲ 0.000	▲ 0.000
NatGas Oct21/Nov21	\$/MMBtu	0.361	▲ 0.000	▲ 0.000	▲ 0.000
NatGas Oct21/Jan22	\$/MMBtu	-1.817	▲ 0.000	▲ 0.000	▼ -0.856
NatGas Apr22/Oct22	\$/MMBtu	1.532	▲ 0.000	▲ 0.000	▲ 1.504
WTI Crude	\$/Bbl	88.96	▼ -3.650	▲ 3.350	▲ 8.170
Brent Crude	\$/Bbl	95.99	▼ -2.580	▲ 4.360	▲ 13.820
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	355.53	▼ -35.950	▼ -42.490	▲ 115.160
Propane, Mt. Bel	cents/Gallon	0.88	▼ -0.005	▲ 0.045	▼ -0.447
Ethane, Mt. Bel	cents/Gallon	0.40	▼ -0.001	▼ -0.027	▼ -0.009
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▲ 0.000
Coal, PRB	\$/MMBtu	0.70			

Source: CME, Bloomberg

Baker Hughes Rig Counts

Current Rig Count by Basin



<http://www.analytix.ai/baker-hughes-rig-maps.html>

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Rotary Rig Count					
11/4/2022					
Baker Hughes					
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago
Oil	613	3	610	163	450
Gas	155	-1	156	55	100
Miscellaneous	2	0	2	2	0
Directional	43	0	43	10	33
Horizontal	705	2	703	213	492
Vertical	22	0	22	-3	25
Canada Breakout	This Week	+/-	Last Week	+/-	Year Ago
Oil	141	-4	145	46	95
Gas	68	1	67	3	65
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago
Ardmore Woodford	6	1	5	4	2
Arkoma Woodford	4	0	4	1	3
Barnett	3	0	3	3	0
Cana Woodford	28	0	28	6	22
DJ-Niobrara	20	0	20	8	12
Eagle Ford	70	0	70	30	40
Granite Wash	5	0	5	2	3
Haynesville	69	-1	70	23	46
Marcellus	41	0	41	13	28
Mississippian	1	0	1	1	0
Permian	346	0	346	75	271
Utica	12	0	12	2	10
Williston	41	2	39	17	24