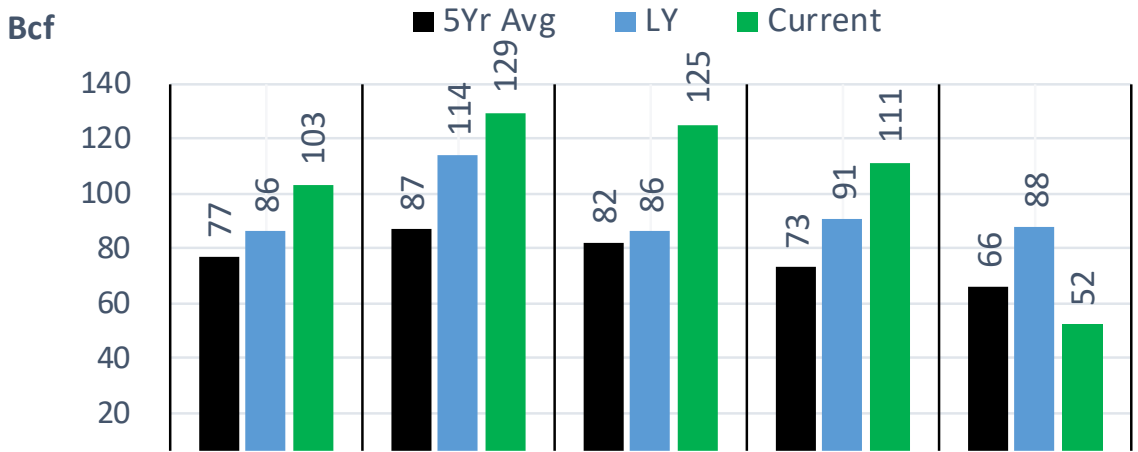
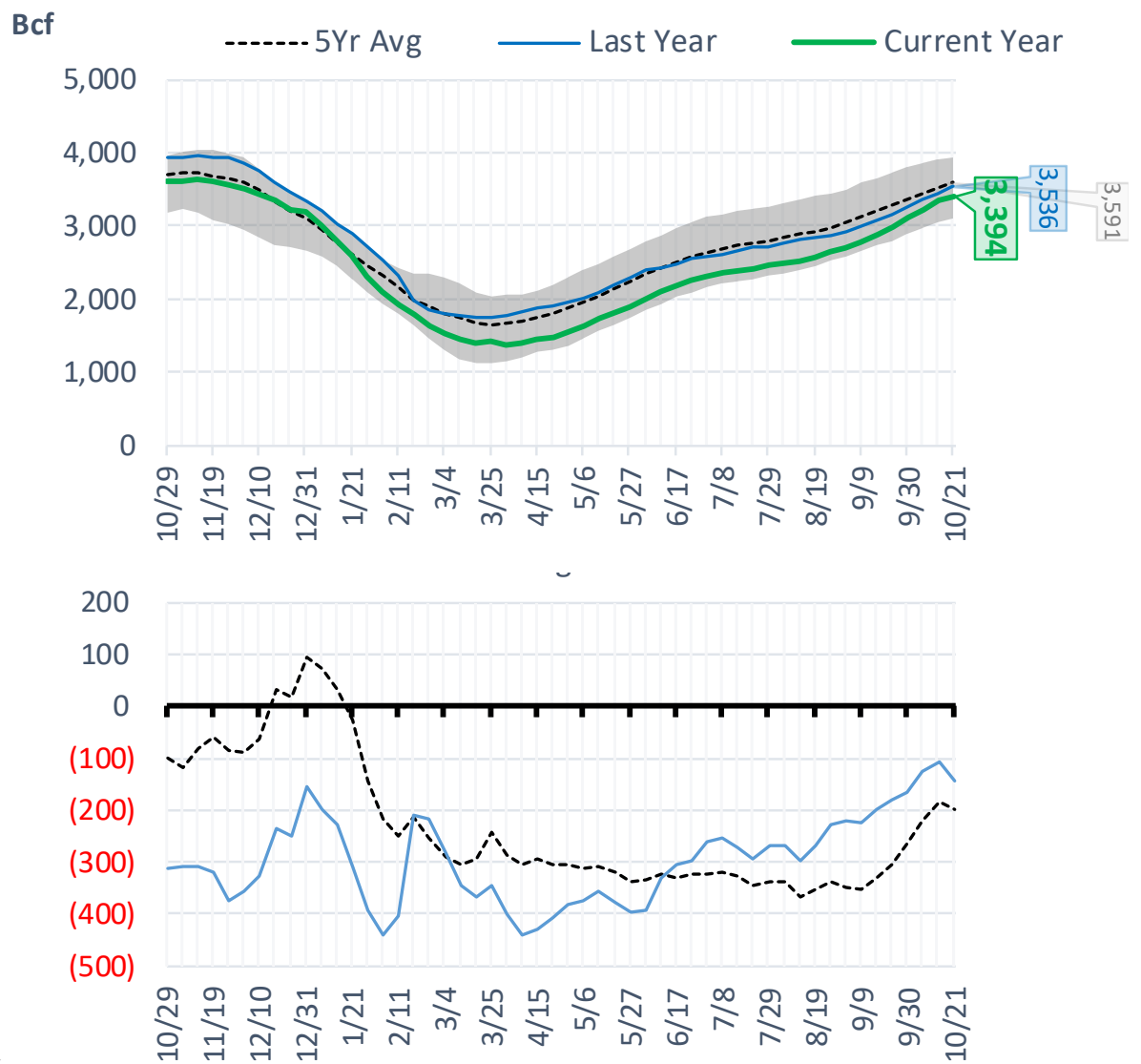


Total Lower 48 YoY Weekly Change



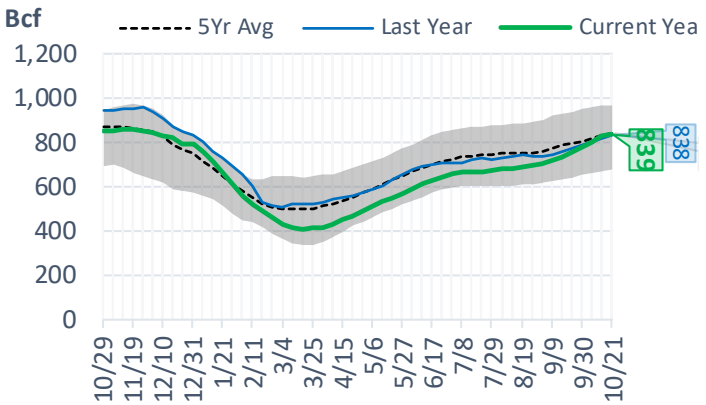
Total Lower 48 Storage Levels



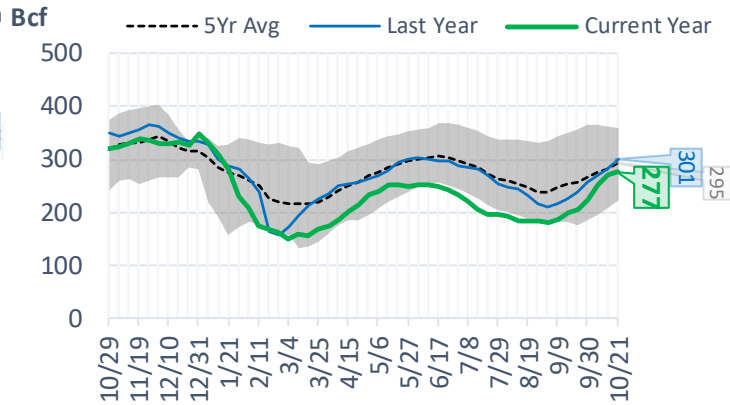
Natural Gas Storage Stats - Last 5 Weeks

Week Ending	Current 21-Oct	Week - 1 14-Oct	Week - 2 7-Oct	Week - 3 30-Sep	Week - 4 23-Sep	Week - 5 16-Sep
Total Lower 48 Storage Level	3394	3342	3231	3106	2977	2874
Weekly Change	+52	+111	+125	+129	+103	+103
vs LY	-142	-106	-126	-165	-180	-197
vs 5Yr Avg	-197	-183	-221	-264	-306	-332
S. Central Salt Storage Level	277	271	253	225	204	199
Weekly Change	+6	+18	+28	+21	+5	+12
vs LY	-24	-10	-15	-31	-33	-27
vs 5Yr Avg	-18	-11	-22	-41	-53	-54
S. Central NonSalt Storage Level	839	828	804	778	754	736
Weekly Change	+11	+24	+26	+24	+18	+19
vs LY	+1	+5	-4	-14	-18	-24
vs 5Yr Avg	-6	-6	-17	-30	-41	-50
Midwest Storage Level	1007	987	952	916	879	844
Weekly Change	+20	+35	+36	+37	+35	+35
vs LY	-41	-36	-41	-50	-51	-56
vs 5Yr Avg	-47	-43	-49	-54	-58	-63
East Storage Level	825	812	782	756	721	690
Weekly Change	+13	+30	+26	+35	+31	+29
vs LY	-57	-46	-49	-50	-54	-58
vs 5Yr Avg	-68	-65	-74	-77	-86	-94
Mountain Storage Level	199	195	190	184	176	168
Weekly Change	+4	+5	+6	+8	+8	+5
vs LY	-13	-16	-19	-21	-24	-28
vs 5Yr Avg	-15	-17	-21	-24	-27	-31
Pacific Storage Level	248	249	249	247	243	237
Weekly Change	-1	0	+2	+4	+6	+2
vs LY	-7	-4	-2	0	0	-3
vs 5Yr Avg	-42	-41	-40	-39	-40	-41

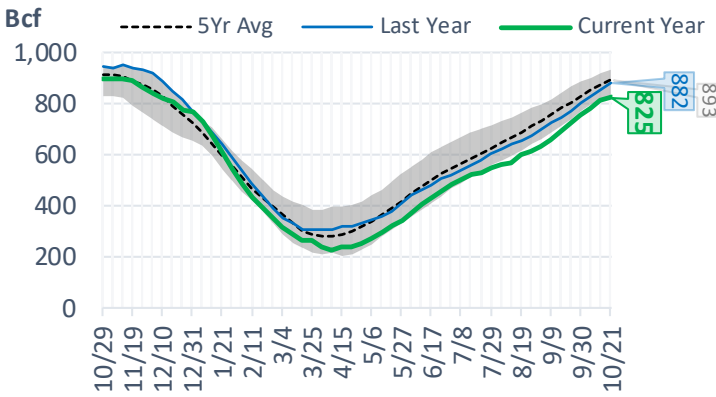
NonSalt Storage Levels



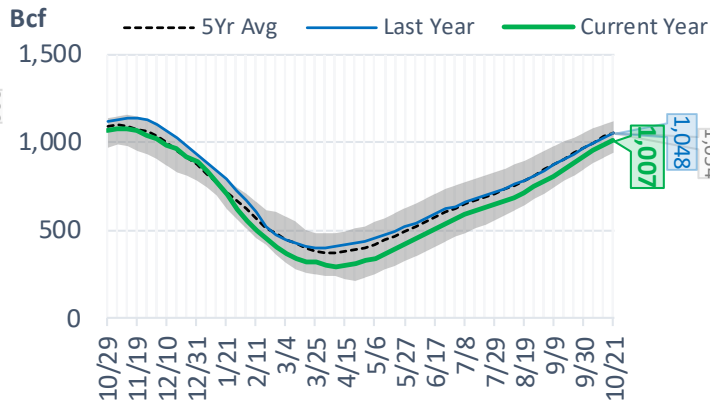
Salt Storage Levels



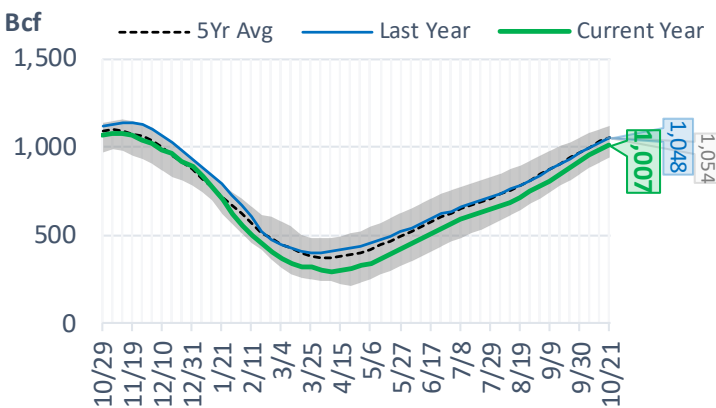
East Storage Levels



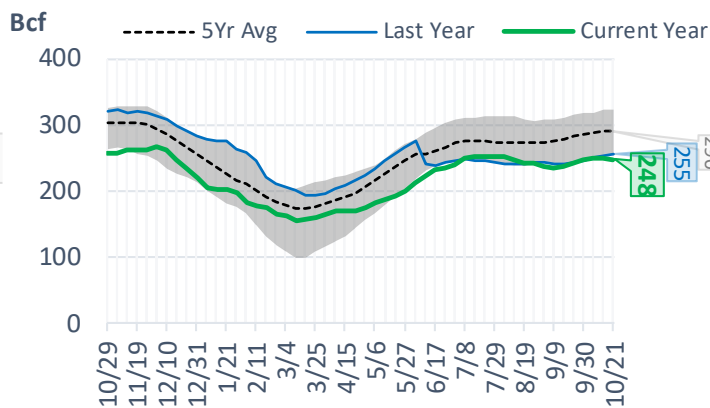
Midwest Storage Levels



Midwest Storage Levels



Pacific Storage Levels



EIA Storage Week Balances

	LY 29-Oct	30-Sep	7-Oct	14-Oct	LW 21-Oct	Current 28-Oct	WoW	vs. LY
Lower 48 Dry Production	95.9	101.4	102.2	102.0	100.6	101.3	▲ 0.7	▲ 5.4
Canadian Imports	5.6	6.2	6.0	5.5	6.1	5.3	▼ -0.8	▼ -0.3
L48 Power	29.4	31.6	30.6	30.8	30.8	29.0	▼ -1.9	-0.4
L48 Residential & Commercial	17.3	11.9	13.0	14.8	21.1	16.1	▼ -5.0	-1.2
L48 Industrial	20.8	20.0	20.9	20.3	20.1	21.7	▲ 1.6	0.9
L48 Lease and Plant Fuel	5.4	5.6	5.7	5.7	5.6	5.7	▲ 0.0	0.3
L48 Pipeline Distribution	2.9	2.7	2.7	2.8	3.2	2.8	▼ -0.4	-0.1
L48 Regional Gas Consumption	75.6	71.8	72.9	74.4	80.8	75.2	-5.6	▼ -0.5
Net LNG Exports	10.8	11.8	11.0	11.0	11.5	11.4	▼ -0.1	▲ 0.6
Total Mexican Exports	6.9	6.9	6.7	6.6	6.7	6.3	▼ -0.4	▼ -0.5
Implied Daily Storage Activity	8.2	17.1	17.6	15.5	7.7	13.8	6.1	5.5
EIA Reported Daily Storage Activity	9.0	18.4	17.9	15.9	7.4			
Daily Model Error	-0.8	-1.3	-0.3	-0.3	0.2			

Monthly Balances

	2Yr Ago Oct-20	LY Oct-21	Jun-22	Jul-22	Aug-22	Sep-22	MTD Oct-22	MoM	vs. LY
Lower 48 Dry Production	88.5	95.5	97.3	97.7	98.9	100.9	101.5	▲ 0.7	▲ 6.1
Canadian Imports	4.3	5.4	5.7	5.9	5.4	5.9	5.7	▼ -0.3	▲ 0.3
L48 Power	30.6	30.4	38.3	44.3	43.1	36.9	30.2	-6.6	▼ -0.2
L48 Residential & Commercial	15.5	12.6	8.9	8.3	8.0	9.0	16.7	▲ 7.7	▲ 4.1
L48 Industrial	22.7	21.7	19.1	19.8	21.1	20.9	20.8	▼ -0.1	▼ -0.9
L48 Lease and Plant Fuel	4.8	5.3	5.5	5.5	5.5	5.6	5.7	▲ 0.1	▲ 0.3
L48 Pipeline Distribution	2.5	2.7	2.9	3.1	3.0	2.8	2.9	▲ 0.1	▲ 0.2
L48 Regional Gas Consumption	76.1	72.7	74.6	81.0	80.8	75.2	76.3	▲ 1.0	▲ 3.6
Net LNG Exports	8.0	10.6	11.2	10.9	11.0	11.5	11.2	▼ -0.2	▲ 0.7
Total Mexican Exports	6.0	6.6	7.1	7.0	6.9	6.7	6.6	▼ -0.1	▼ -0.1
Implied Daily Storage Activity	2.7	11.0	10.0	4.7	5.6	13.4	13.1		
EIA Reported Daily Storage Activity									
Daily Model Error					0.0				

Source: Bloomberg, analytix.ai

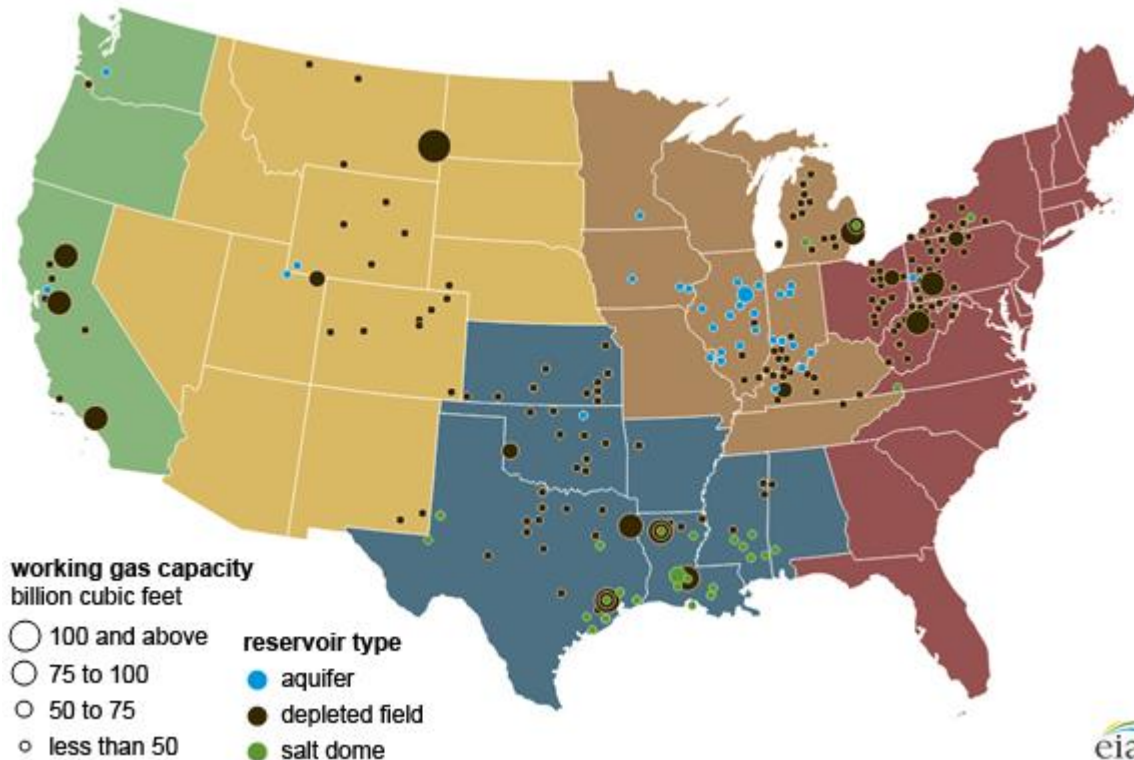
Regional S/D Models Storage Projection

Week Ending 28-Oct

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	14.8	-0.9	13.9	97
East	1.5	2.8	4.3	30
Midwest	4.5	0.9	5.4	38
Mountain	4.6	-4.2	0.4	3
South Central	4.2	0.2	4.4	31
Pacific	0.0	-0.6	-0.6	-4

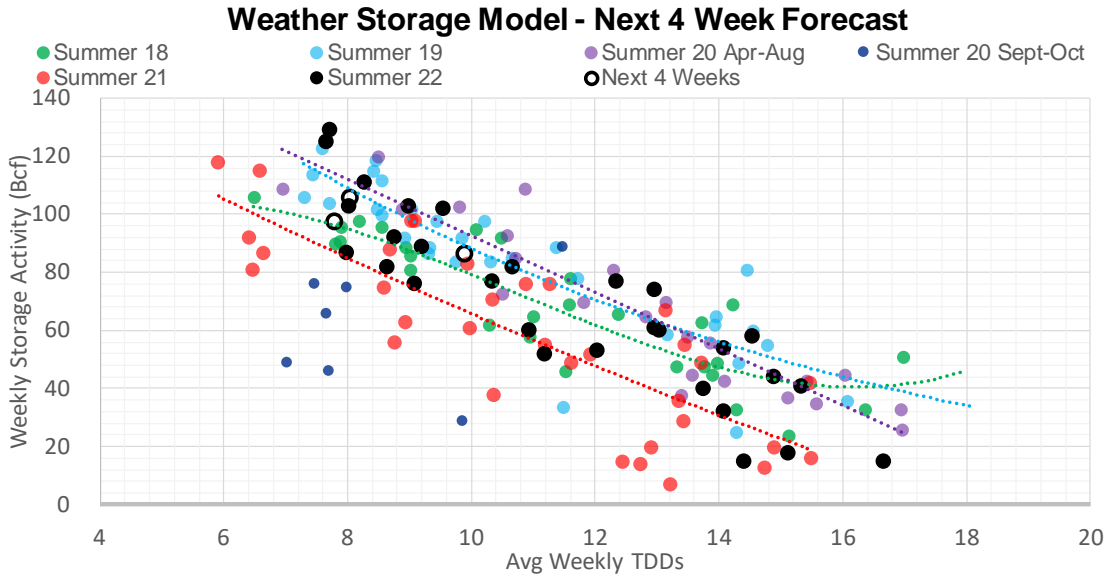
*Adjustment Factor is calculated based on historical regional deltas

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



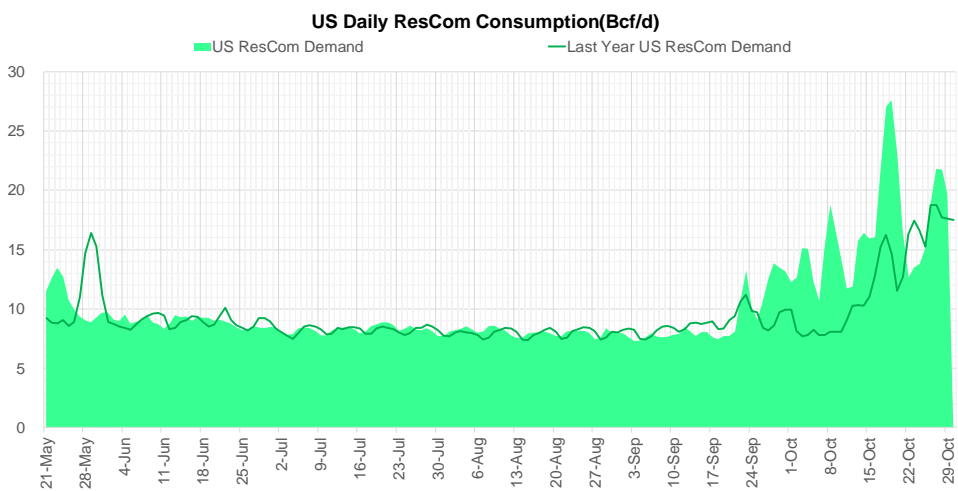
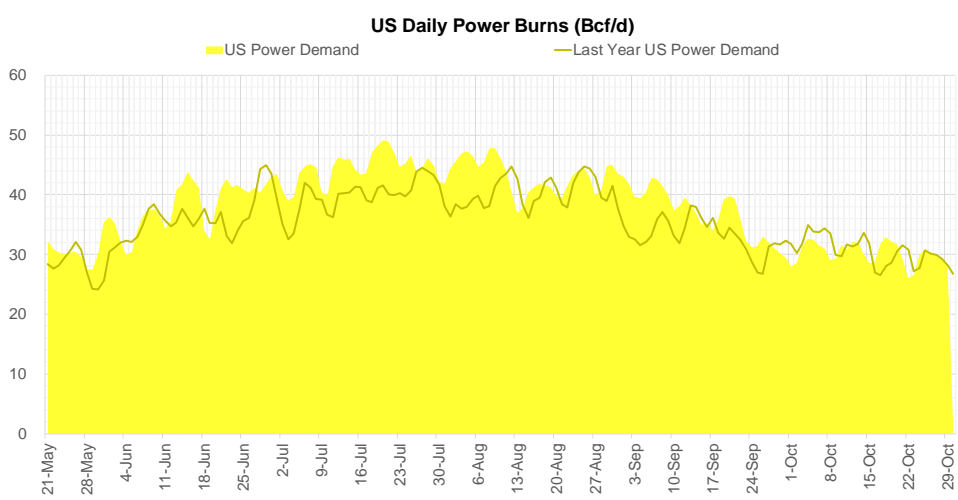
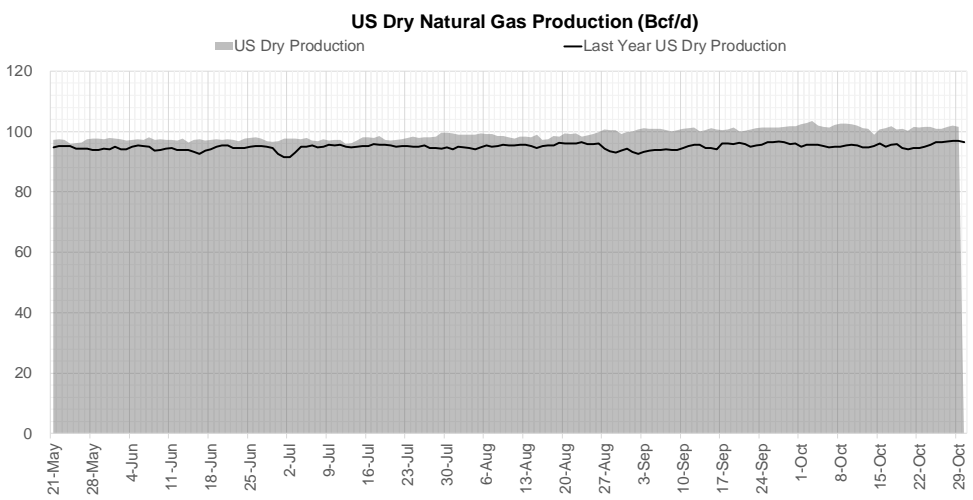
Weather Model Storage Projection

Next report and beyond		
Week Ending	GWDDs	Week Storage Projection
28-Oct	7.8	97
04-Nov	8.1	106
11-Nov	9.9	86
18-Nov	#N/A	#N/A



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

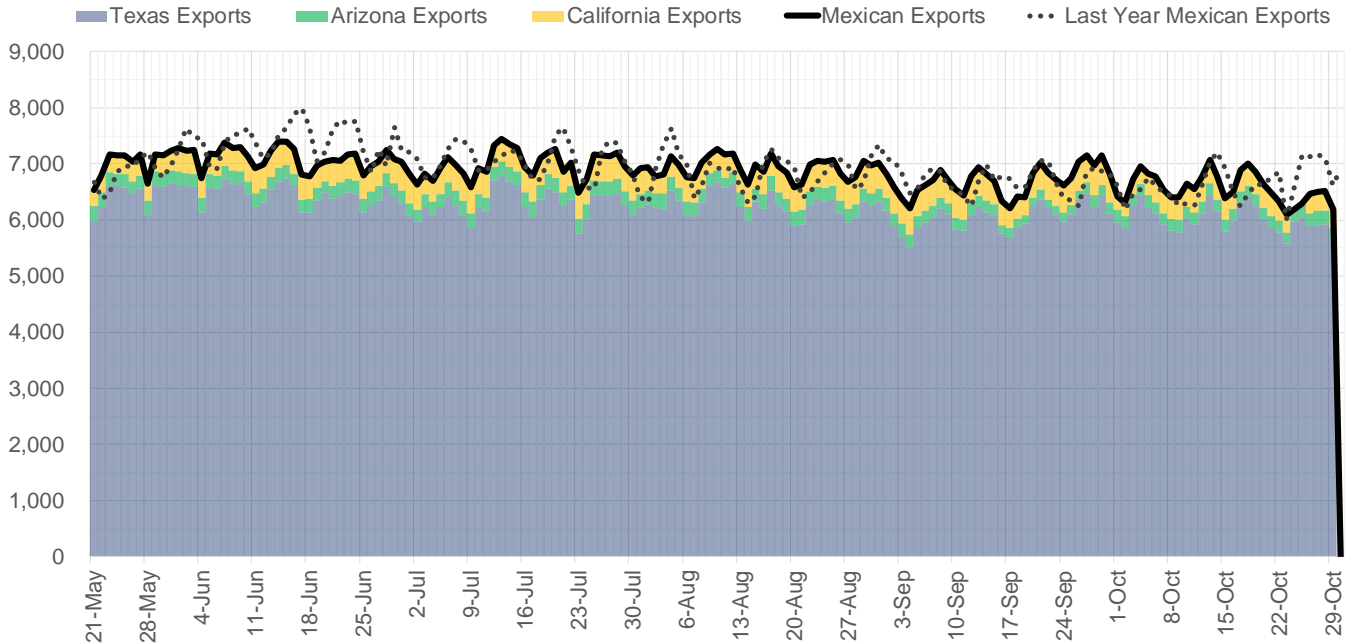
Supply – Demand Trends



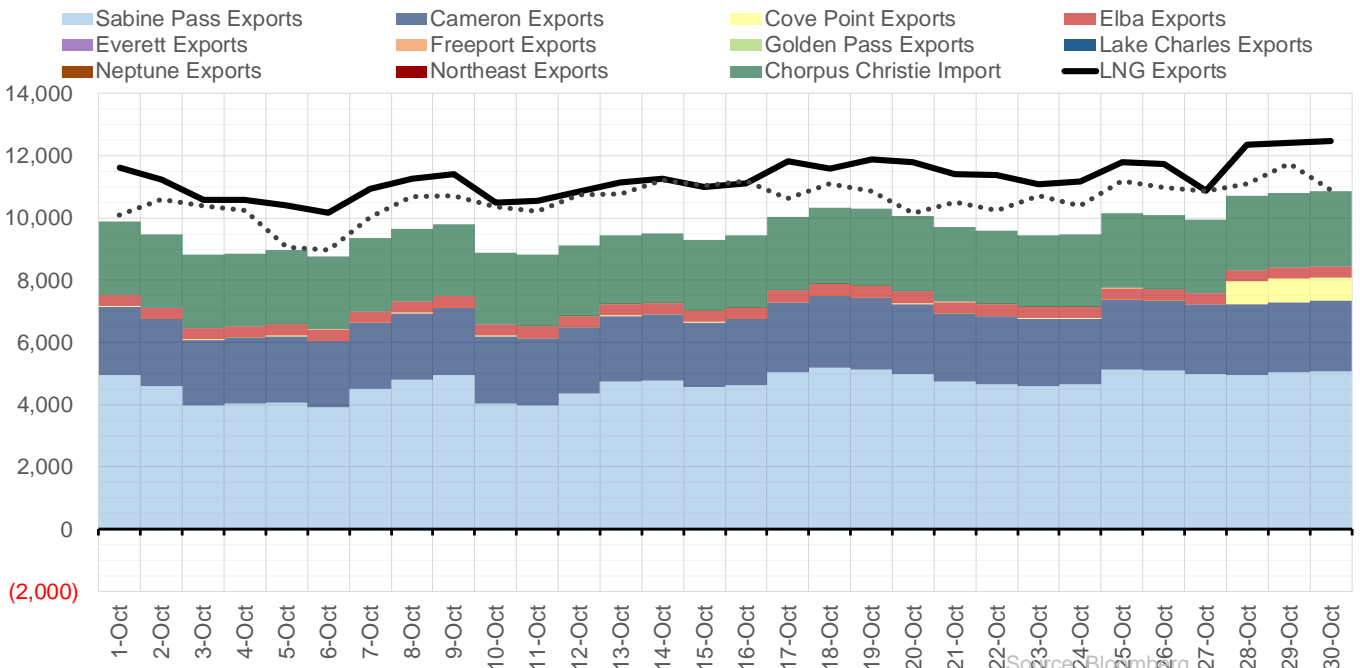
Source: Bloomberg

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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	4.00	31676	12	2022	P	4.00	48869
12	2022	P	3.50	20458	12	2022	P	5.00	29722
12	2022	P	4.50	15780	5	2023	P	2.00	27374
12	2022	P	5.00	8406	12	2022	P	6.00	24799
3	2023	C	1.00	7000	12	2022	P	4.50	24694
3	2023	P	1.00	7000	10	2023	P	3.00	23144
12	2022	P	3.00	6365	3	2023	C	10.00	22948
1	2023	P	3.00	5311	4	2023	P	3.00	22268
12	2022	C	8.00	4965	1	2023	C	10.00	22183
12	2022	C	10.00	4434	12	2022	C	10.00	22068
1	2023	C	8.00	3478	3	2023	P	4.00	20924
1	2023	P	5.00	3405	12	2022	P	3.50	20790
12	2022	P	3.75	2928	2	2023	C	10.00	20266
1	2023	P	6.00	2875	4	2023	P	3.50	19550
12	2022	C	9.00	2785	4	2023	P	2.00	19334
12	2022	P	4.75	2534	10	2023	P	4.00	19286
12	2022	P	5.50	2465	3	2023	C	20.00	18865
12	2022	C	6.00	2405	1	2023	P	4.00	18813
3	2023	C	8.00	2297	10	2023	P	2.00	18630
12	2022	C	7.00	2177	10	2023	P	2.50	18390
1	2023	C	8.50	2141	3	2023	P	3.00	18337
8	2023	C	8.00	2020	12	2022	C	5.00	18279
1	2023	P	3.25	1954	5	2023	P	3.00	17963
12	2022	C	50.00	1930	6	2023	P	3.00	17585
4	2023	C	8.00	1920	4	2023	P	4.00	17527
11	2023	C	8.00	1850	12	2022	P	5.50	17512
12	2023	C	8.00	1850	9	2023	P	4.00	17211
2	2023	C	8.00	1803	3	2023	C	8.00	17082
5	2023	C	8.00	1741	5	2023	P	3.50	16869
6	2023	C	8.00	1720	8	2023	P	3.00	16476
7	2023	C	8.00	1720	7	2023	P	3.00	16375
9	2023	C	8.00	1720	9	2023	P	3.00	16375
10	2023	C	8.00	1720	1	2023	P	5.00	16345
2	2023	C	8.50	1711	10	2023	P	3.50	16218
1	2023	C	6.50	1708	12	2022	C	4.00	16195
3	2023	C	8.50	1700	12	2022	C	8.00	16159
4	2023	C	8.50	1700	6	2023	P	3.50	16115
5	2023	C	8.50	1700	6	2023	P	4.00	15966
6	2023	C	8.50	1700	6	2023	P	2.00	15949
7	2023	C	8.50	1700	8	2023	P	3.50	15901
8	2023	C	8.50	1700	7	2023	P	3.50	15869
9	2023	C	8.50	1700	9	2023	P	3.50	15859
10	2023	C	8.50	1700	7	2023	P	4.00	15849
11	2023	C	8.50	1700	2	2023	C	8.00	15845
12	2023	C	8.50	1700	5	2023	P	2.50	15805
12	2022	C	8.50	1700	12	2022	P	3.00	15740
12	2022	C	12.00	1673	3	2023	P	2.75	15712
2	2023	P	5.00	1671	5	2023	P	4.00	15648
6	2023	P	2.50	1650	1	2023	P	3.00	15620
12	2022	C	8.50	1637	12	2022	C	6	15580.25

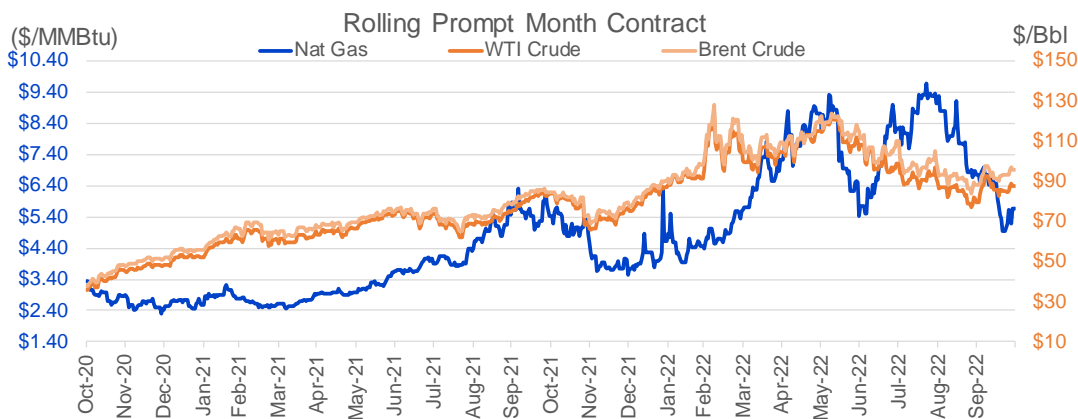
Source: CME, ICE

Nat Gas Futures Open Interest

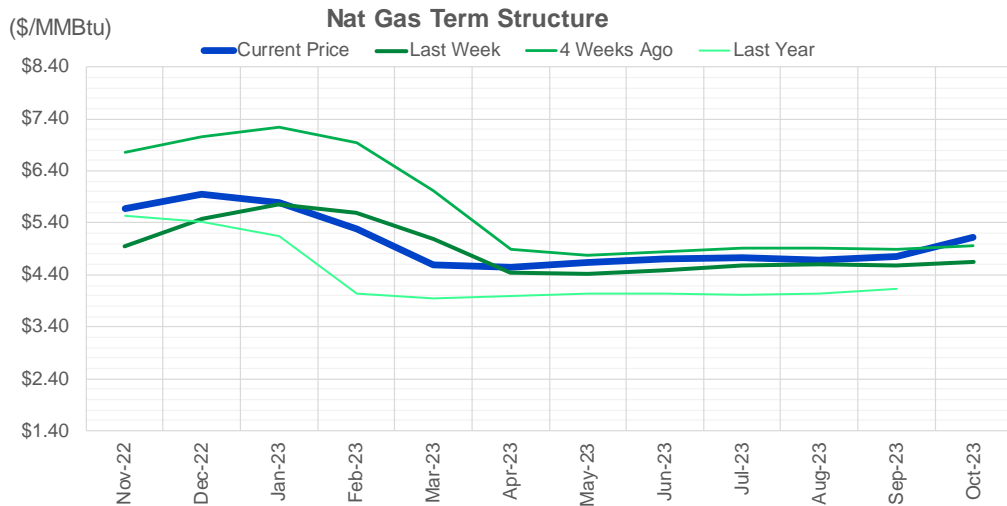
CME and ICE data combined

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	487	1355	-868	DEC 22	83367	83660	-294
JAN 23	103228	100137	3091	JAN 23	78339	76888	1451
FEB 23	137904	139761	-1857	FEB 23	74288	72409	1879
MAR 23	58175	58311	-136	MAR 23	66800	67555	-755
APR 23	96185	96101	84	APR 23	59638	60115	-477
MAY 23	77704	78988	-1284	MAY 23	57156	57645	-489
JUN 23	86967	86823	144	JUN 23	59588	59434	154
JUL 23	23875	23960	-85	JUL 23	48998	48698	300
AUG 23	34078	33601	477	AUG 23	48974	48643	331
SEP 23	22439	22391	48	SEP 23	47341	47095	246
OCT 23	30175	30090	85	OCT 23	44826	44900	-74
NOV 23	51542	51576	-34	NOV 23	56181	56117	64
DEC 23	22924	23679	-755	DEC 23	47416	47326	90
JAN 24	26795	27034	-239	JAN 24	41681	41741	-60
FEB 24	36609	36469	140	FEB 24	45704	45750	-46
MAR 24	10549	10543	6	MAR 24	31345	31287	58
APR 24	22152	22470	-318	APR 24	37045	36683	363
MAY 24	20584	20536	48	MAY 24	30466	30417	49
JUN 24	8743	8708	35	JUN 24	29165	29122	43
JUL 24	3232	3206	26	JUL 24	26215	26165	50
AUG 24	4321	4295	26	AUG 24	25547	25512	36
SEP 24	3976	3998	-22	SEP 24	25054	25023	31
OCT 24	2620	2568	52	OCT 24	24902	24866	36
NOV 24	9024	8916	108	NOV 24	29174	29100	74
DEC 24	4883	4905	-22	DEC 24	26281	26251	31
JAN 25	8633	8628	5	JAN 25	30196	30196	-1
FEB 25	17789	17785	4	FEB 25	23041	23084	-43
MAR 25	1845	1845	0	MAR 25	15729	15715	15
APR 25	6099	5294	805	APR 25	18079	18043	36
MAY 25	5777	5422	355	MAY 25	16523	16485	38

Source: CME, ICE



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	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23
Current Price	\$5.684	\$5.953	\$5.794	\$5.276	\$4.601	\$4.556	\$4.630	\$4.708	\$4.727	\$4.688	\$4.756	\$5.116
Last Week	\$4.959	\$5.472	\$5.754	\$5.587	\$5.086	\$4.448	\$4.417	\$4.494	\$4.579	\$4.604	\$4.574	\$4.648
vs. Last Week	\$0.725	\$0.481	\$0.040	-\$0.311	-\$0.485	\$0.108	\$0.213	\$0.214	\$0.148	\$0.084	\$0.182	\$0.468
4 Weeks Ago	\$6.766	\$7.065	\$7.247	\$6.937	\$6.028	\$4.887	\$4.784	\$4.848	\$4.914	\$4.924	\$4.894	\$4.965
vs. 4 Weeks Ago	-\$1.082	-\$1.112	-\$1.453	-\$1.661	-\$1.427	-\$0.331	-\$0.154	-\$0.140	-\$0.187	-\$0.236	-\$0.138	\$0.151
Last Year	\$5.426	\$5.529	\$5.433	\$5.145	\$4.047	\$3.955	\$3.989	\$4.031	\$4.035	\$4.018	\$4.050	\$4.140
vs. Last Year	\$0.258	\$0.424	\$0.361	\$0.131	\$0.554	\$0.601	\$0.641	\$0.677	\$0.692	\$0.670	\$0.706	\$0.976

	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	▼ -1.505
NatGas Apr22/Oct22	\$/MMBtu	1.532	▲ 0.000	▲ 0.000	▲ 1.529
WTI Crude	\$/Bbl	87.90	▲ 2.850	▲ 8.410	▲ 4.330
Brent Crude	\$/Bbl	95.77	▲ 2.270	▲ 7.810	▲ 11.390
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	454.98	▲ 71.750	▲ 118.080	▲ 205.340
Propane, Mt. Bel	cents/Gallon	0.86	▲ 0.010	▼ -0.137	▼ -0.590
Ethane, Mt. Bel	cents/Gallon	0.40	▲ 0.005	▼ -0.061	▼ -0.032
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▲ 0.000
Coal, PRB	\$/MMBtu	0.70			

Source: CME, Bloomberg

Baker Hughes Rig Counts

Rotary Rig Count						Baker Hughes 
10/28/2022						
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago	
Oil	610	-2	612	166	444	
Gas	156	-1	157	56	100	
Miscellaneous	2	0	2	2	0	
Directional	43	2	41	11	32	
Horizontal	703	-5	708	220	483	
Vertical	22	0	22	-7	29	
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago	
Ardmore Woodford	5	0	5	3	2	
Arkoma Woodford	4	1	3	2	2	
Barnett	3	0	3	3	0	
Cana Woodford	28	2	26	6	22	
DJ-Niobrara	20	0	20	8	12	
Eagle Ford	70	-1	71	30	40	
Granite Wash	5	-1	6	2	3	
Haynesville	70	0	70	24	46	
Marcellus	41	0	41	14	27	
Mississippian	1	0	1	0	1	
Permian	346	0	346	78	268	
Utica	12	0	12	2	10	
Williston	39	-1	40	15	24	