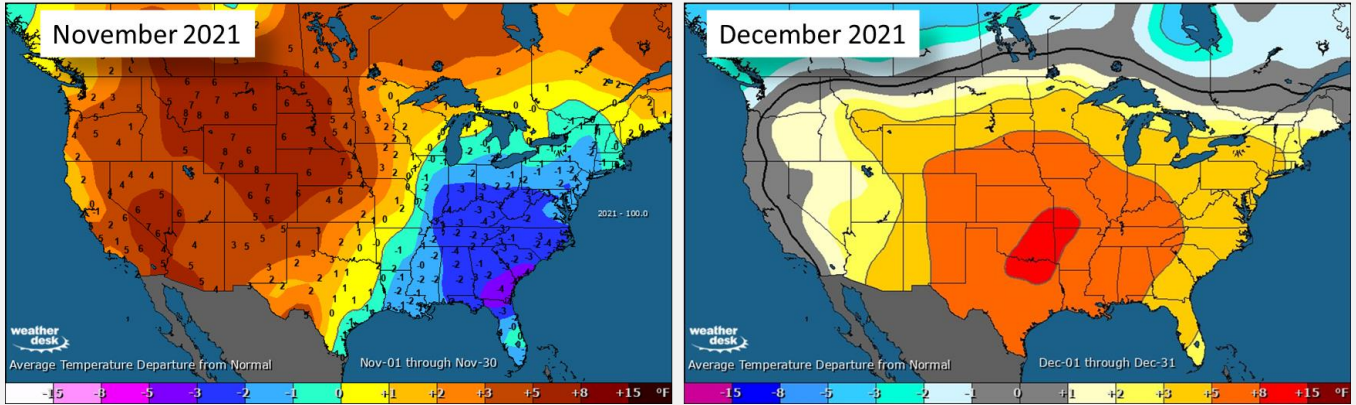


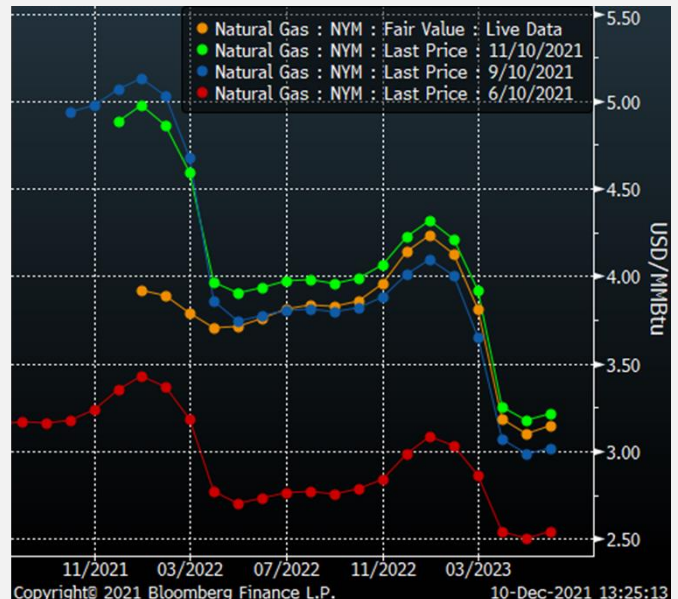
What a winter this has been so far. Weather has dominated the #natgas headlines with Nov and Dec realizing to be extremely warm at the national level. The following two weather maps put everything we need to know into perspective.



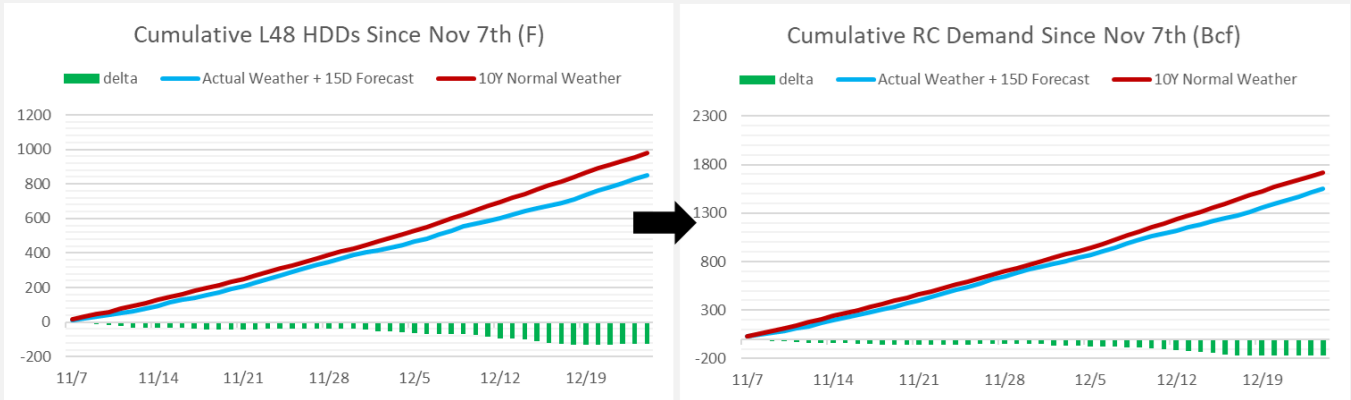
Source: Maxar Weather, enelyst.com

We had a hunch that weather would play a key role in price direction based on where storage levels were at the end of Oct (more that years where storage finishes above the 5Yr Avg). Starting mid-summer, the balances started pointing to very tight conditions and as a result, natgas was trading at a premium to encourage more production and reduced power burns.

Now that winter has had an extremely warm start (Nov warmer than the 10Y, and Dec on record to be the 2nd warmest in the past 50 years), the market has sold off quickly. Here are a couple of quick charts showing prompt and the term structure has changed over the past 6 months.



As part of today's report, we try to put some numbers around this weather move. By our calculation, the current warmer-than-normal weather shows 128 fewer HDDs between Nov 7th and Dec 24th than we would have seen with 10Y normal weather [Friday's 00z gives us visibility to Dec 24th]. This has resulted in rescomm demand lower by 168 Bcf [RC Demand: 1719 Bcf with 10Y normal weather & 1551 Bcf with Actuals + 15D forecast].



- Note:**
- 1) This does not take into consideration the lower industrial demand or reduced production freeze-off that also adds to the bearish tone. So it's fair to say that weather has added at least 168 Bcf to the end of March storage forecasts made before the start of winter.
  - 2) We only have visibility to ~40% of winter days so far, and therefore there is still the opportunity for much cooler or warmer days ahead. Even though the market looks to have written of this winter, there is still a lot of time left for some variability.

This takes us to the next part of our report where we go through a simple quantitative exercise to see how the daily 15D forecast has impacted price this winter so far. Please treat this analysis as only a simplistic approach to understanding the daily weather factor on price change.

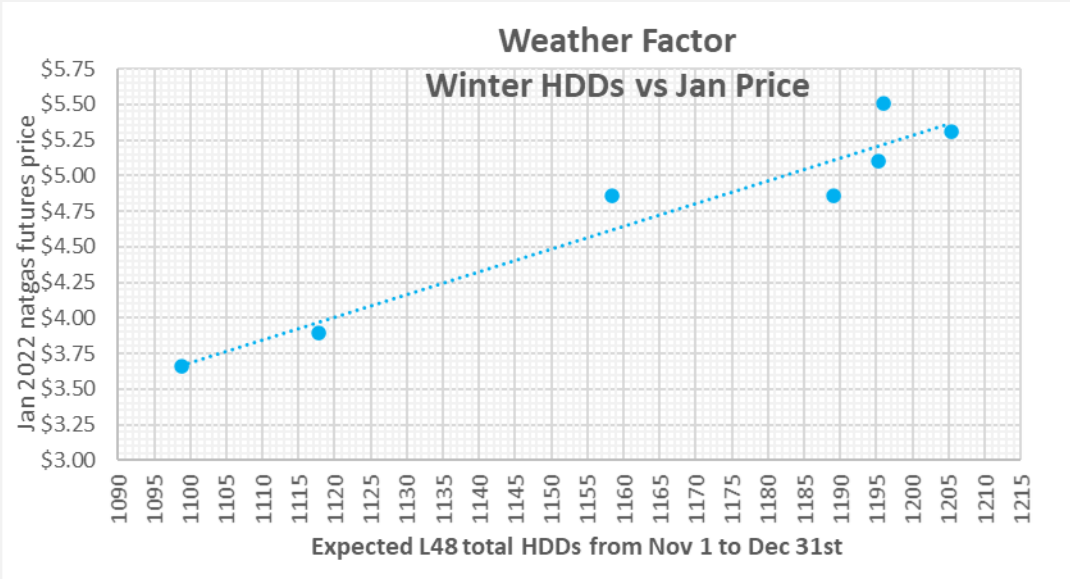
Starting the first Monday of November we calculated the expected total HDDs between Nov 1st to Dec 31st. Each week going forward, we compared the total HDD for that same time range (61 days) and compared it to the closing price for that day. So the assumption is that the daily temp change gets embedded into price by end of day.

$$\text{Total HDD} = \text{historical HDDs} + \text{the expected from the the Euro Ensemble 15D} + \text{the 10Y normal}$$

		00z HDD forecast date -->							
		01-Nov	08-Nov	15-Nov	22-Nov	29-Nov	06-Dec	10-Dec	10Y Normal
Weather Days	01-Nov	10.7	11.7	11.7	11.7	11.7	11.7	11.7	11.3
	02-Nov	13.4	14.4	14.4	14.4	14.4	14.4	14.4	10.9
	03-Nov	15.7	16.0	16.0	16.0	16.0	16.0	16.0	11.4
	04-Nov	15.7	16.4	16.4	16.4	16.4	16.4	16.4	12.3
	05-Nov	15.7	16.2	16.2	16.2	16.2	16.2	16.2	11.9
	06-Nov	15.4	14.9	14.9	14.9	14.9	14.9	14.9	12.1
	07-Nov	14.0	13.7	13.7	13.7	13.7	13.7	13.7	14.3
	08-Nov	12.7	9.9	10.5	10.5	10.5	10.5	10.5	15.5
	09-Nov	12.3	9.1	8.7	8.7	8.7	8.7	8.7	15.2
	10-Nov	11.8	9.4	9.0	9.0	9.0	9.0	9.0	15.1
	11-Nov	11.2	9.5	10.0	10.0	10.0	10.0	10.0	16.0
	12-Nov	10.7	8.9	10.7	10.7	10.7	10.7	10.7	17.5
	13-Nov	11.2	12.8	16.0	16.0	16.0	16.0	16.0	18.4
	14-Nov	12.5	15.6	17.8	17.8	17.8	17.8	17.8	18.1
	15-Nov	13.2	16.4	16.3	17.0	17.0	17.0	17.0	17.1
	16-Nov	16.1	16.9	15.2	15.5	15.5	15.5	15.5	16.1
	17-Nov	16.5	15.5	12.3	12.7	12.7	12.7	12.7	16.5
	18-Nov	17.4	14.5	10.9	12.3	12.3	12.3	12.3	17.4
	19-Nov	17.9	15.6	17.1	19.4	19.4	19.4	19.4	17.9
	20-Nov	18.1	16.7	19.2	19.2	19.2	19.2	19.2	18.1
	21-Nov	18.5	17.5	17.0	16.4	16.4	16.4	16.4	18.5
	22-Nov	18.5	18.1	17.4	16.8	19.6	19.6	19.6	18.5
	23-Nov	19.5	19.5	20.5	21.9	22.3	22.3	22.3	19.5
	24-Nov	19.7	19.7	20.9	20.1	20.1	20.1	20.1	19.7
	25-Nov	18.9	18.9	19.3	17.3	18.0	18.0	18.0	18.9
	26-Nov	18.8	18.8	17.9	20.0	21.2	21.2	21.2	18.8
	27-Nov	20.2	20.2	18.3	21.4	21.3	21.3	21.3	20.2
	28-Nov	21.0	21.0	19.0	20.5	18.8	18.8	18.8	21.0
	29-Nov	19.9	19.9	19.8	20.5	19.7	20.4	20.4	19.9
	30-Nov	19.1	19.1	19.1	19.9	19.0	18.3	18.3	19.1
	01-Dec	19.4	19.4	19.4	19.4	16.5	15.5	15.5	19.4
02-Dec	20.0	20.0	20.0	18.7	12.1	10.6	10.6	20.0	
03-Dec	19.5	19.5	19.5	16.6	14.1	15.5	15.5	19.5	
04-Dec	20.0	20.0	20.0	15.5	17.5	17.3	17.3	20.0	
05-Dec	21.1	21.1	21.1	16.5	22.6	17.6	17.6	21.1	
06-Dec	22.3	22.3	22.3	18.8	20.9	14.8	16.8	22.3	
07-Dec	24.4	24.4	24.4	24.4	20.1	21.5	24.7	24.4	
08-Dec	25.3	25.3	25.3	25.3	18.8	22.9	23.2	25.3	
09-Dec	24.4	24.4	24.4	24.4	19.9	21.6	23.1	24.4	
10-Dec	24.3	24.3	24.3	24.3	20.3	18.1	18.8	24.3	
11-Dec	24.6	24.6	24.6	24.6	19.9	15.1	14.3	24.6	
12-Dec	23.7	23.7	23.7	23.7	20.0	18.9	18.0	23.7	
13-Dec	23.7	23.7	23.7	23.7	20.9	20.0	19.5	23.7	
14-Dec	23.2	23.2	23.2	23.2	23.2	18.9	19.0	23.2	
15-Dec	23.9	23.9	23.9	23.9	23.9	17.8	17.2	23.9	
16-Dec	24.4	24.4	24.4	24.4	24.4	16.2	14.8	24.4	
17-Dec	24.7	24.7	24.7	24.7	24.7	16.4	17.9	24.7	
18-Dec	25.5	25.5	25.5	25.5	25.5	17.3	21.4	25.5	
19-Dec	25.4	25.4	25.4	25.4	25.4	18.8	23.6	25.4	
20-Dec	23.8	23.8	23.8	23.8	23.8	20.3	22.2	23.8	
21-Dec	21.2	21.2	21.2	21.2	21.2	21.2	22.4	21.2	
22-Dec	20.7	20.7	20.7	20.7	20.7	20.7	23.5	20.7	
23-Dec	21.4	21.4	21.4	21.4	21.4	21.4	21.9	21.4	
24-Dec	23.2	23.2	23.2	23.2	23.2	23.2	21.6	23.2	
25-Dec	24.6	24.6	24.6	24.6	24.6	24.6	24.6	24.6	
26-Dec	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
27-Dec	24.3	24.3	24.3	24.3	24.3	24.3	24.3	24.3	
28-Dec	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	
29-Dec	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6	
30-Dec	27.0	27.0	27.0	27.0	27.0	27.0	27.0	27.0	
31-Dec	27.6	27.6	27.6	27.6	27.6	27.6	27.6	27.6	
Cumulative HDDs		1205.4	1195.9	1195.3	1189.0	1158.4	1098.7	1117.7	1226.5
Prompt Month Price		5.186	5.427	5.017	4.789	4.854	3.657	3.89	
Jan 22 Price		5.305	5.505	5.104	4.861	4.854	3.657	3.89	

Historical
15D Forecast
10Y Normal

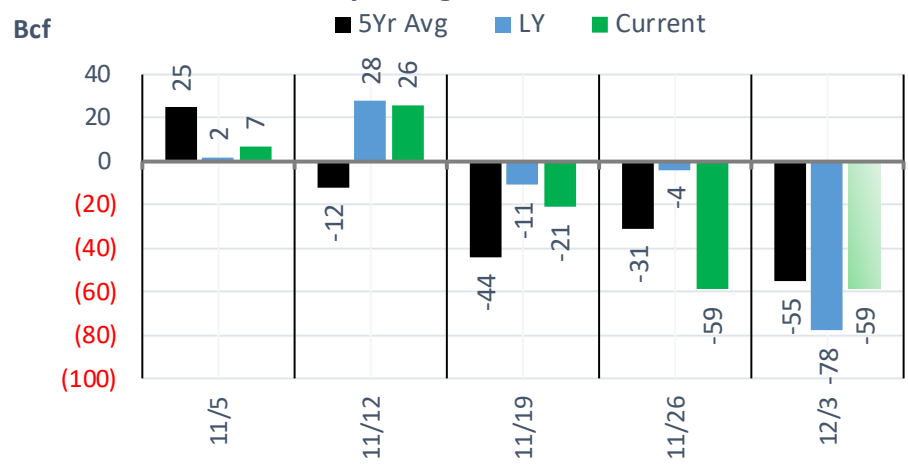
When we chart the Total HDDs (for that 61 day strip) from each week against the closing daily price, we see a strong relationship that roughly translates into each change in HDD equating to a ~1.6c price move.



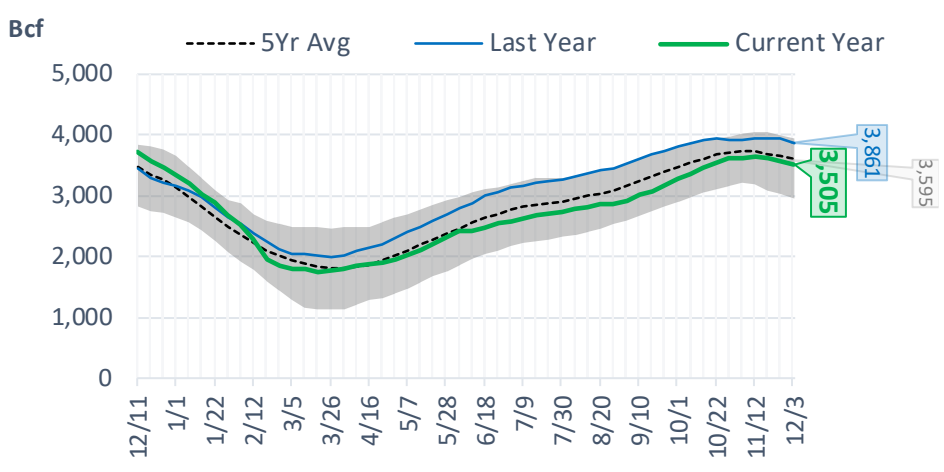
Note: There is some noise to this analysis because many fundamental factors influence the daily price change such as production levels, LNG feedgas levels, change in power burn levels with changing price, and longer range weather forecasts. Please use this only for informational purposes.

## EIA Storage Report

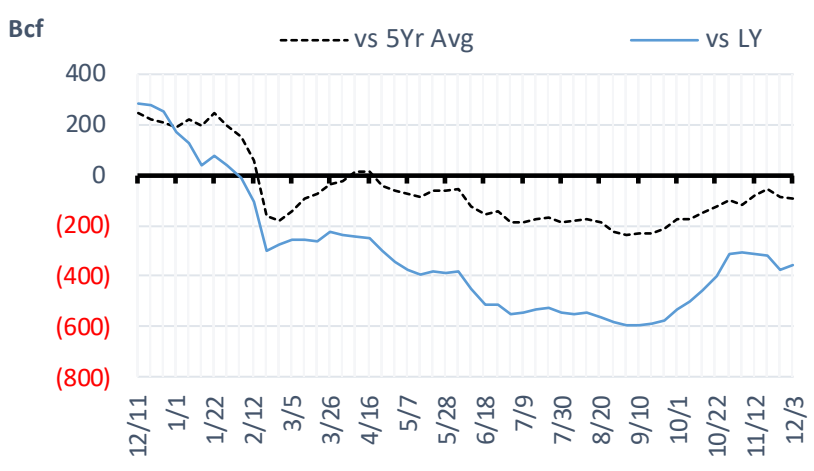
### Total Lower 48 YoY Weekly Change



### Total Lower 48 Storage Levels



### Total Lower 48 LY Surplus/Deficit

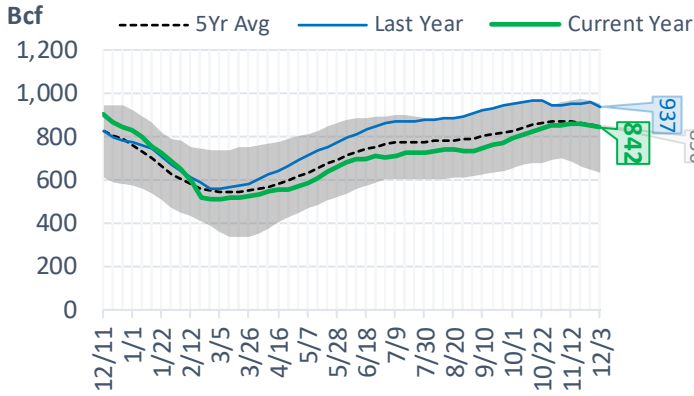


The risk of trading futures and options and other derivatives involves a substantial risk of loss and is not suitable for all persons. Each person must consider whether a particular trade, combination of trades, or strategy is suitable for that person's financial means and objectives. Past results are 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.

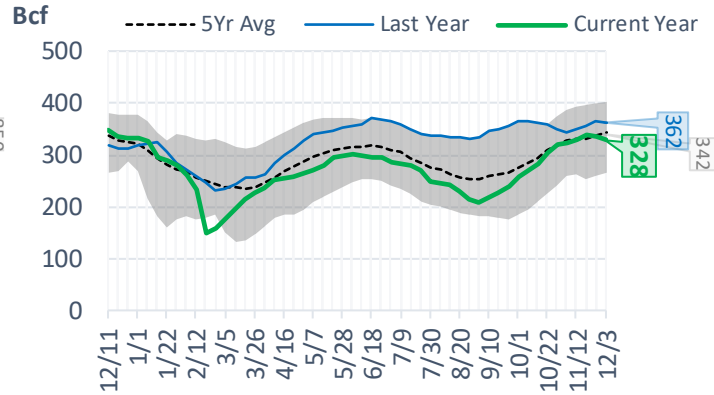
## Natural Gas Storage Stats - Last 5 Weeks

Week Ending	Current 3-Dec	Week - 1 26-Nov	Week - 2 19-Nov	Week - 3 12-Nov	Week - 4 5-Nov	Week - 5 29-Oct
<b>Total Lower 48 Storage Level</b>	<b>3505</b>	3564	3623	3644	3618	3611
Weekly Change	-59	-59	-21	+26	+7	+63
vs LY	-356	-375	-320	-310	-308	-313
vs 5Yr Avg	-90	-86	-58	-81	-119	-101
<b>S. Central Salt Storage Level</b>	<b>328</b>	335	338	331	324	320
Weekly Change	-7	-3	+7	+7	+4	+16
vs LY	-34	-31	-17	-18	-21	-30
vs 5Yr Avg	-14	-3	+8	+1	-4	+1
<b>S. Central NonSalt Storage Level</b>	<b>842</b>	851	859	860	850	852
Weekly Change	-9	-8	-1	+10	-2	+12
vs LY	-95	-107	-97	-95	-98	-96
vs 5Yr Avg	-8	-9	-6	-11	-23	-17
<b>Midwest Storage Level</b>	<b>1019</b>	1043	1066	1079	1075	1071
Weekly Change	-24	-23	-13	+4	+4	+19
vs LY	-80	-81	-68	-58	-51	-48
vs 5Yr Avg	-17	-15	-9	-12	-21	-15
<b>East Storage Level</b>	<b>843</b>	867	889	900	897	899
Weekly Change	-24	-22	-11	+3	-2	+14
vs LY	-75	-67	-48	-51	-46	-47
vs 5Yr Avg	-16	-8	-1	-8	-18	-14
<b>Mountain Storage Level</b>	<b>206</b>	206	210	212	213	213
Weekly Change	0	-4	-2	-1	0	+1
vs LY	-27	-34	-32	-29	-30	-28
vs 5Yr Avg	-7	-12	-10	-8	-9	-8
<b>Pacific Storage Level</b>	<b>266</b>	263	262	261	258	256
Weekly Change	+3	+1	+1	+3	+2	+1
vs LY	-47	-55	-58	-58	-64	-64
vs 5Yr Avg	-28	-37	-40	-42	-46	-48

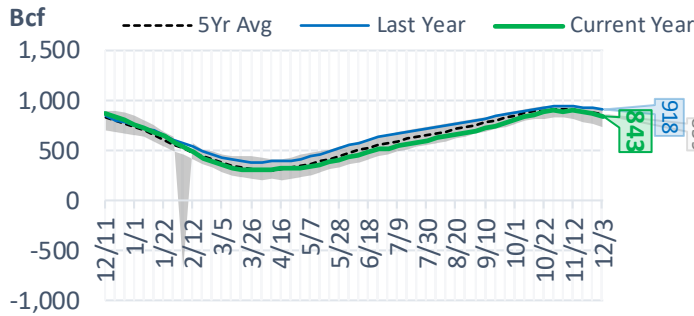
## NonSalt Storage Levels



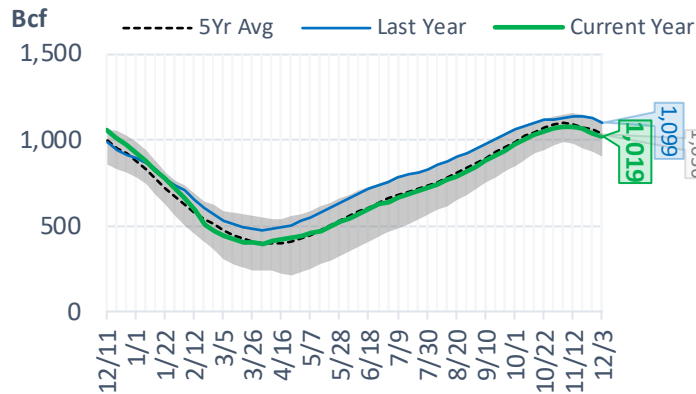
## Salt Storage Levels



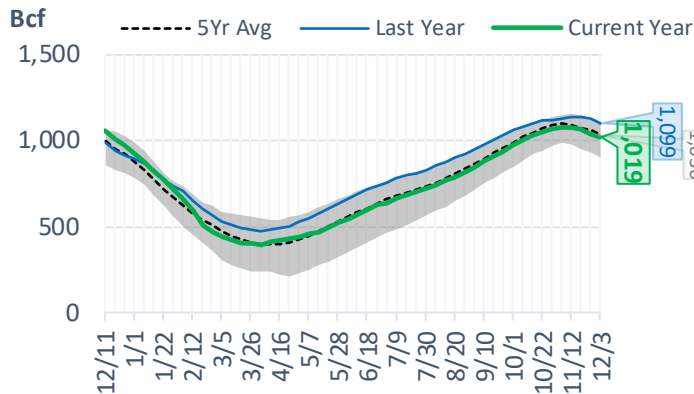
## East Storage Levels



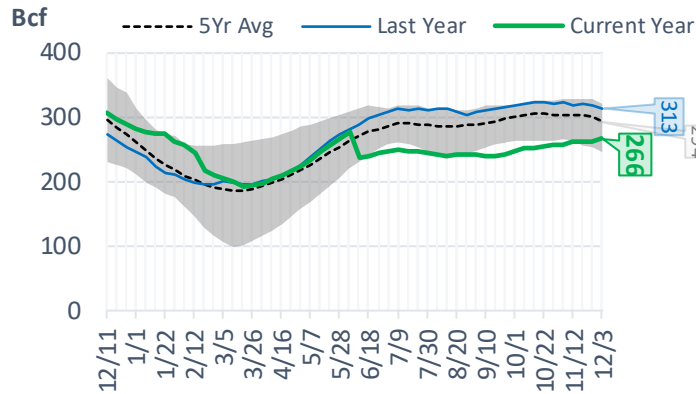
## Midwest Storage Levels



## Midwest Storage Levels



## Pacific Storage Levels



## EIA Storage Week Balances

	5-Nov	12-Nov	19-Nov	26-Nov	3-Dec	10-Dec	WoW	vs. 4W
<b>Lower 48 Dry Production</b>	<b>95.1</b>	<b>95.9</b>	<b>95.1</b>	<b>96.2</b>	<b>96.9</b>	<b>96.7</b>	▼ -0.2	▲ 0.7
<b>Canadian Imports</b>	<b>5.5</b>	<b>5.1</b>	<b>4.9</b>	<b>5.5</b>	<b>5.6</b>	<b>5.3</b>	▼ -0.3	▲ 0.0
L48 Power	29.6	27.5	27.8	29.2	28.8	28.9	▲ 0.1	▲ 0.6
L48 Residential & Commercial	24.3	23.6	28.0	33.3	33.3	35.4	▲ 2.1	▲ 5.9
L48 Industrial	21.2	21.4	23.1	22.4	22.4	23.8	▲ 1.4	▲ 1.5
L48 Lease and Plant Fuel	5.2	5.2	5.2	5.2	5.3	5.2	▼ 0.0	▲ 0.0
L48 Pipeline Distribution	2.9	2.7	3.0	3.3	3.3	3.2	▼ 0.0	▲ 0.1
<b>L48 Regional Gas Consumption</b>	<b>83.2</b>	<b>80.3</b>	<b>87.0</b>	<b>93.5</b>	<b>93.1</b>	<b>96.6</b>	▲ 3.6	▲ 8.2
<b>Net LNG Exports</b>	<b>10.9</b>	<b>11.2</b>	<b>11.1</b>	<b>11.7</b>	<b>11.8</b>	<b>12.0</b>	▲ 0.2	▲ 0.6
<b>Total Mexican Exports</b>	<b>6.1</b>	<b>6.2</b>	<b>6.1</b>	<b>6.0</b>	<b>6.4</b>	<b>6.5</b>	▲ 0.1	▲ 0.3
<b>Implied Daily Storage Activity</b>	<b>0.4</b>	<b>3.2</b>	<b>-4.2</b>	<b>-9.6</b>	<b>-8.8</b>	<b>-13.2</b>	<b>-4.4</b>	
<b>EIA Reported Daily Storage Activity</b>	<b>1.0</b>	<b>3.7</b>	<b>-3.0</b>	<b>-8.4</b>	<b>-8.4</b>			
<b>Daily Model Error</b>	<b>-0.6</b>	<b>-0.5</b>	<b>-1.2</b>	<b>-1.1</b>	<b>-0.4</b>			

## Monthly Balances

	2Yr Ago Dec-19	LY Dec-20	Aug-21	Sep-21	Oct-21	Nov-21	MTD Dec-21	MoM	vs. LY
<b>Lower 48 Dry Production</b>	<b>95.9</b>	<b>91.6</b>	<b>94.0</b>	<b>93.4</b>	<b>94.0</b>	<b>95.9</b>	<b>96.6</b>	▲ 0.7	▲ 5.0
<b>Canadian Imports</b>	<b>4.5</b>	<b>5.8</b>	<b>5.1</b>	<b>5.1</b>	<b>5.4</b>	<b>5.3</b>	<b>5.2</b>	▼ -0.1	▼ -0.6
L48 Power	29.3	28.0	40.1	33.0	30.2	28.8	28.8	▲ 0.1	▲ 0.8
L48 Residential & Commercial	39.1	40.3	7.9	8.7	13.2	29.6	33.6	▲ 4.0	▼ -6.7
L48 Industrial	24.6	23.4	21.5	20.3	20.3	22.3	23.4	▲ 1.2	▲ 0.0
L48 Lease and Plant Fuel	5.2	5.0	5.1	5.1	5.1	5.2	5.2	▲ 0.0	▲ 0.3
L48 Pipeline Distribution	3.4	3.4	2.6	2.3	2.3	3.1	3.1	▲ 0.0	▼ -0.3
<b>L48 Regional Gas Consumption</b>	<b>101.6</b>	<b>100.0</b>	<b>77.2</b>	<b>69.4</b>	<b>71.3</b>	<b>88.9</b>	<b>94.2</b>	▲ 5.3	▼ -5.8
<b>Net LNG Exports</b>	<b>7.8</b>	<b>11.0</b>	<b>10.5</b>	<b>10.3</b>	<b>10.6</b>	<b>11.4</b>	<b>11.8</b>	▲ 0.5	▲ 0.9
<b>Total Mexican Exports</b>	<b>4.9</b>	<b>5.8</b>	<b>6.9</b>	<b>6.7</b>	<b>6.6</b>	<b>6.1</b>	<b>6.5</b>	▲ 0.4	▲ 0.7
<b>Implied Daily Storage Activity</b>	<b>-13.8</b>	<b>-19.5</b>	<b>4.6</b>	<b>12.1</b>	<b>10.9</b>	<b>-5.3</b>	<b>-10.8</b>		
<b>EIA Reported Daily Storage Activity</b>									
<b>Daily Model Error</b>									

Source: Bloomberg, analytix.ai



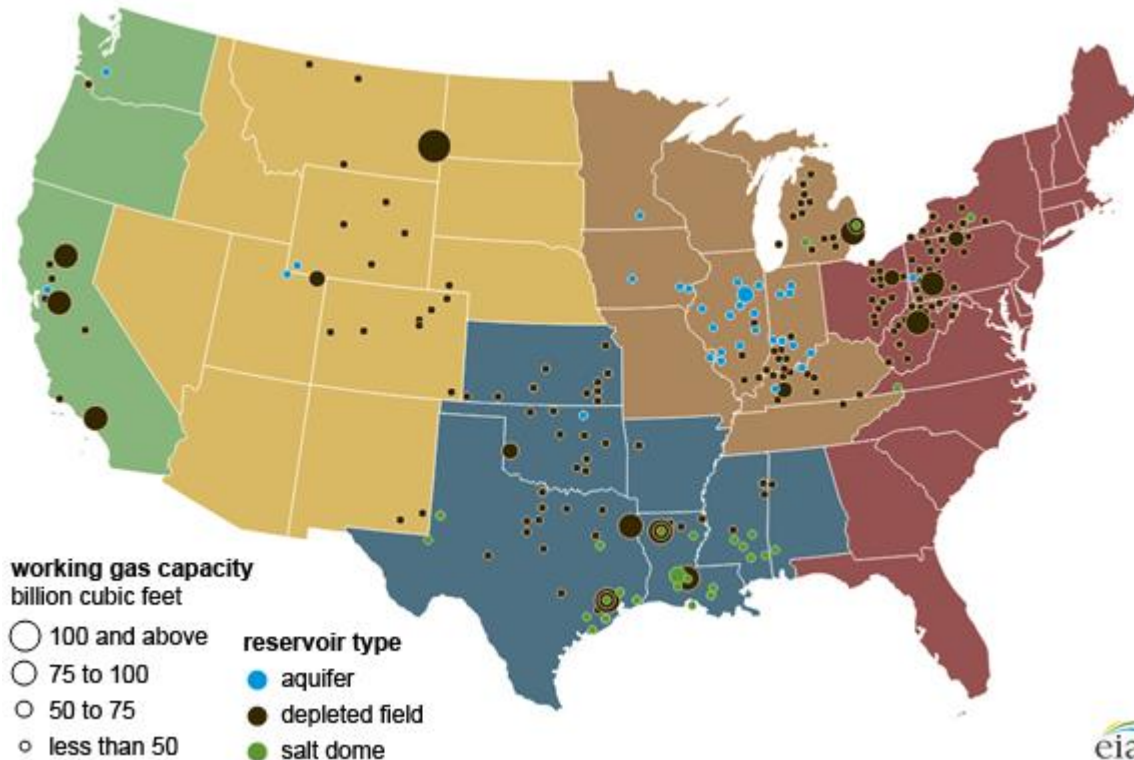
## Regional S/D Models Storage Projection

Week Ending 10-Dec

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	-13.5	1.0	-12.5	-87
East	-6.1	1.8	-4.3	-30
Midwest	-5.3	0.2	-5.1	-36
Mountain	2.3	-3.5	-1.2	-8
South Central	-4.4	2.7	-1.6	-11
Pacific	0.1	-0.3	-0.2	-2

\*Adjustment Factor is calculated based on historical regional deltas

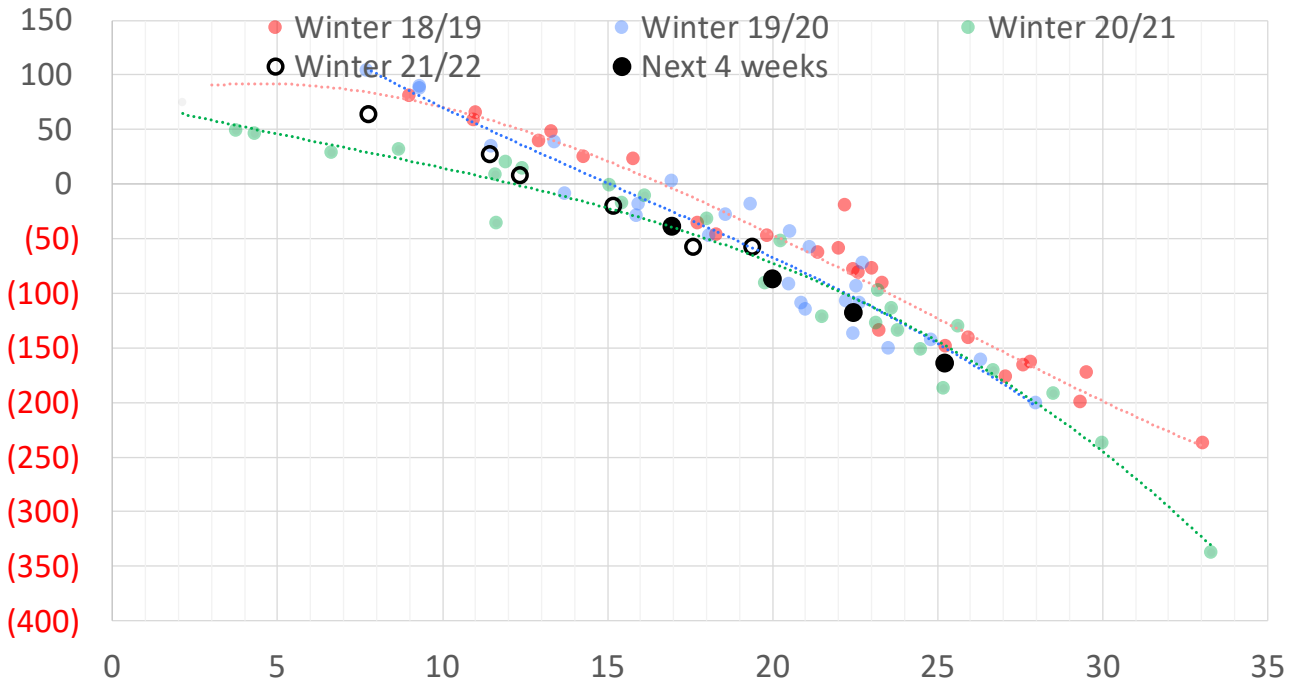
U.S. underground natural gas storage facilities by type (July 2015)



## Weather Model Storage Projection

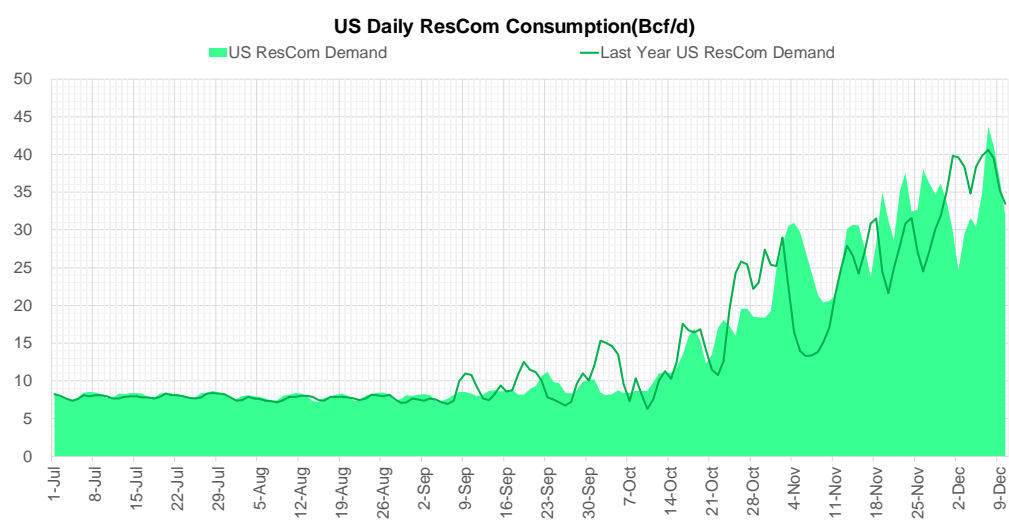
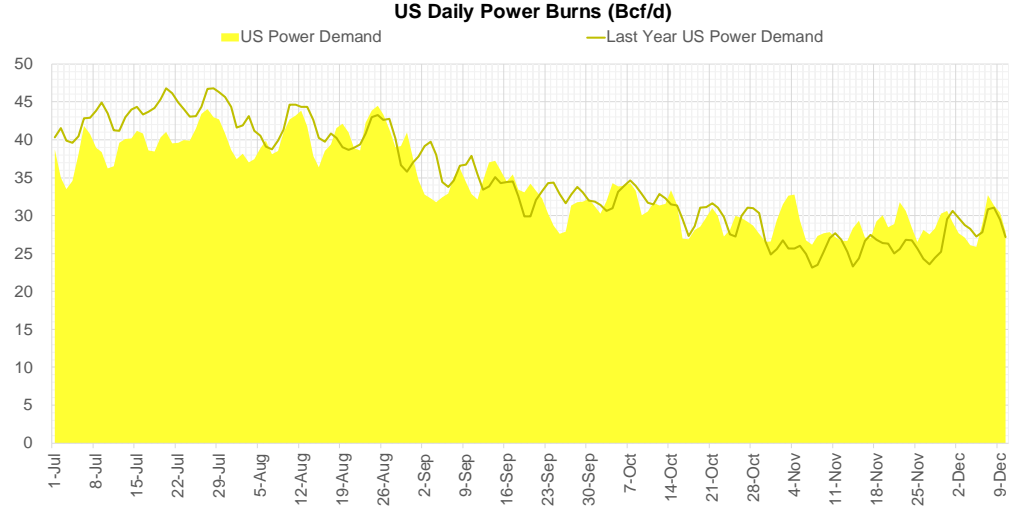
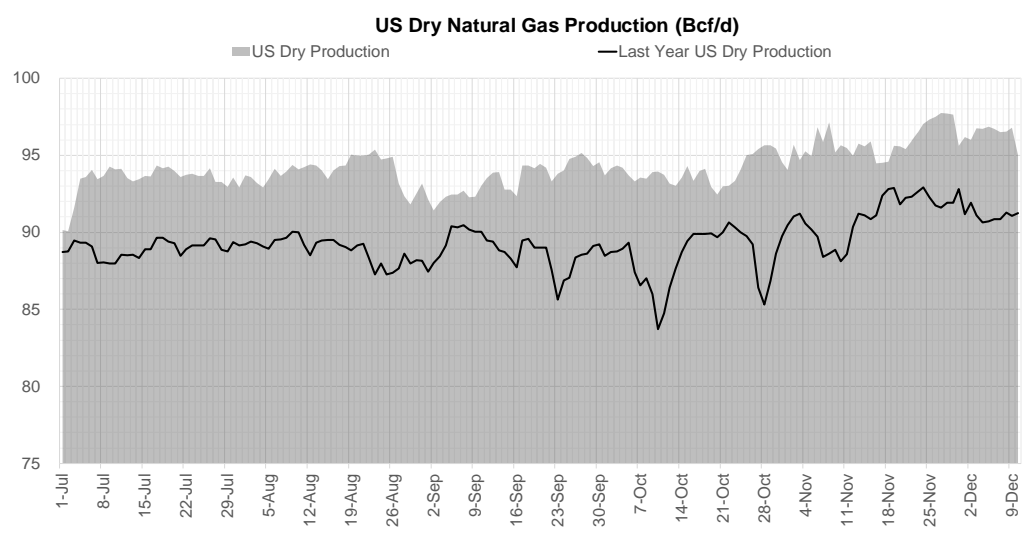
Next report and beyond		
Week Ending	GWDDs	Week Storage Projection
10-Dec	20	-87
17-Dec	17	-39
24-Dec	22	-118
31-Dec	25	-164

## 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

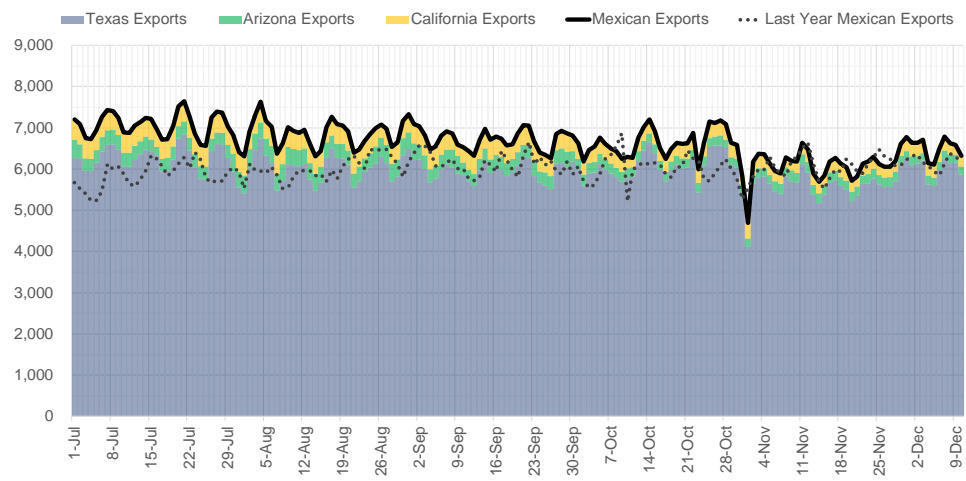
## Supply – Demand Trends



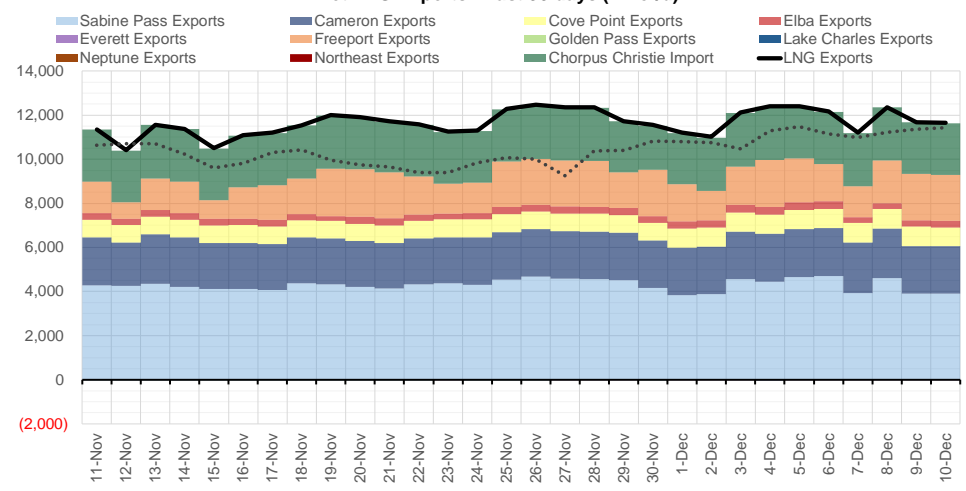
Source: Bloomberg

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**Mexican Exports (MMcf/d)**



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



Source: Bloomberg

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.

## Nat Gas Options Volume and Open Interest CME, ICE and Nasdaq Combined

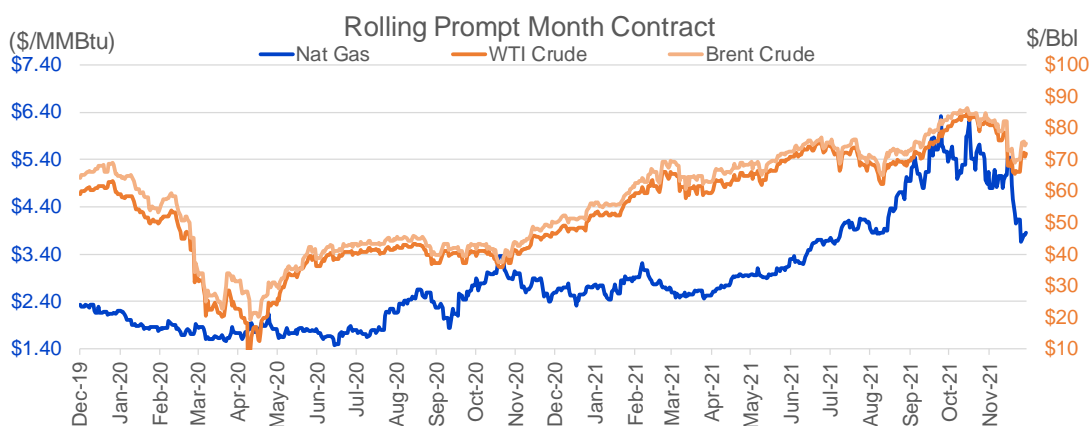
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
1	2022	P	3.00	6720	3	2022	C	10.00	34516
1	2022	C	4.00	3587	1	2022	P	4.00	26758
3	2022	P	2.25	3502	1	2022	P	3.00	26127
3	2022	C	4.00	3169	3	2022	C	8.00	25901
4	2022	C	4.00	3025	3	2022	C	5.00	24341
1	2022	C	5.00	3011	1	2022	C	6.00	24150
4	2022	P	2.25	3000	1	2022	C	4.00	23610
2	2022	C	5.00	2833	1	2022	P	2.75	23308
1	2022	C	4.50	2718	1	2022	C	5.00	23154
1	2022	P	3.50	2454	2	2022	C	5.00	21503
3	2022	P	3.50	2281	3	2022	P	2.50	21445
4	2022	P	2.50	2250	1	2022	P	3.50	20756
1	2022	C	4.25	2218	4	2022	C	5.00	20630
3	2022	P	3.00	2052	12	2022	C	5.00	20297
3	2022	P	2.50	2007	3	2022	C	6.00	20007
5	2022	P	2.25	2000	4	2022	C	3.00	19710
6	2022	P	2.25	2000	3	2022	P	3.00	18624
7	2022	P	2.25	2000	1	2022	C	10.00	18360
8	2022	P	2.25	2000	1	2022	C	7.00	17806
9	2022	P	2.25	2000	3	2022	C	4.00	17460
10	2022	P	2.25	2000	1	2022	P	3.25	17195
5	2022	C	5.00	1840	2	2022	C	6.00	17076
1	2022	P	3.25	1760	3	2022	P	4.00	17065
4	2022	C	5.00	1683	1	2022	C	4.50	16860
3	2022	C	6.00	1614	3	2022	P	3.50	16462
2	2022	C	5.50	1594	2	2022	P	3.50	16374
4	2022	P	3.50	1400	2	2022	C	4.00	16252
2	2022	P	3.00	1394	2	2022	P	4.00	15802
1	2022	C	4.75	1291	5	2022	C	5.00	15608
2	2022	P	3.50	1178	6	2022	C	5.00	15502
3	2022	C	6.75	1150	4	2022	P	2.50	15089
4	2022	P	2.00	1100	3	2022	C	7.00	15087
10	2022	P	2.00	1100	2	2022	C	10.00	13964
2	2022	P	3.25	1043	5	2022	C	3.00	13733
3	2022	C	10.00	943	1	2022	C	8.00	13469
1	2022	C	5.50	932	3	2022	P	5.00	13464
2	2022	C	4.25	927	6	2022	C	3.00	13438
4	2022	C	5.25	900	1	2022	C	5.50	13368
1	2022	P	3.75	840	12	2022	C	4.50	13272
1	2022	P	3.40	817	7	2022	C	3.00	13230
3	2022	P	3.70	800	8	2022	C	3.00	13226
4	2022	P	3.70	800	9	2022	C	3.00	13225
1	2022	P	3.85	677	3	2022	C	3.00	13178
4	2022	P	2.35	650	5	2022	P	3.00	13178
5	2022	C	6.00	650	10	2022	C	3.00	13114
5	2022	P	2.35	650	12	2022	C	5.25	13063
6	2022	P	2.35	650	8	2022	C	5.00	13003
7	2022	P	2.35	650	2	2022	P	3.00	12752
8	2022	P	2.35	650	3	2022	C	3.50	12744
					2	2022	C	5.5	12733

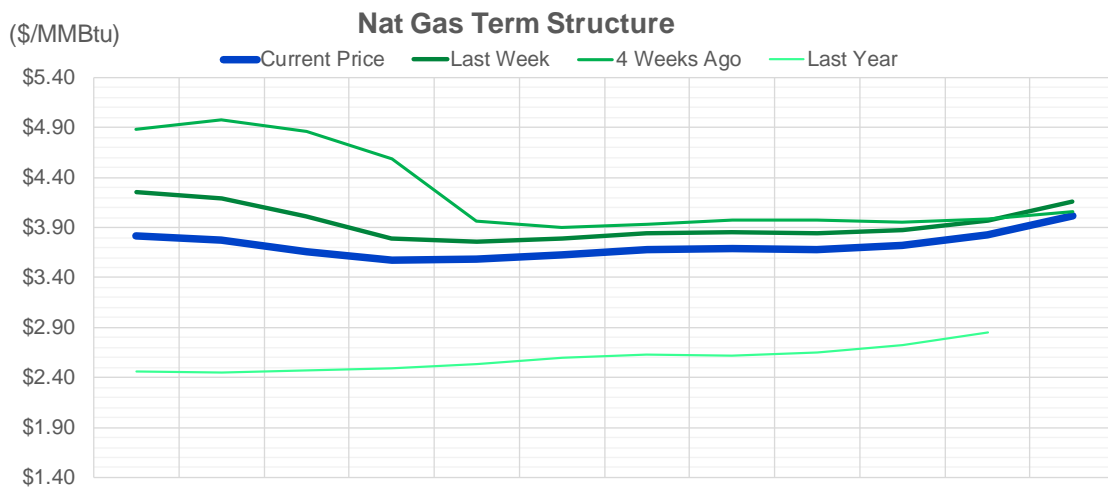
Source: CME, Nasdaq, ICE

## Nat Gas Futures Open Interest CME, ICE and Nasdaq 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
JAN 22	157919	188897	-30978	JAN 22	101457	104280	-2823
FEB 22	84669	79489	5180	FEB 22	73380	71997	1382
MAR 22	200687	189533	11154	MAR 22	89611	89031	580
APR 22	91966	94716	-2750	APR 22	73002	72763	240
MAY 22	115714	117594	-1880	MAY 22	70846	70685	161
JUN 22	48826	49002	-176	JUN 22	53277	53114	163
JUL 22	40384	42585	-2201	JUL 22	56955	56708	247
AUG 22	31967	32019	-52	AUG 22	54840	54566	274
SEP 22	44584	42619	1965	SEP 22	55917	55852	65
OCT 22	79138	78545	593	OCT 22	63086	62942	144
NOV 22	34780	34661	119	NOV 22	49575	49149	427
DEC 22	32601	32381	220	DEC 22	58144	57659	486
JAN 23	43165	43376	-211	JAN 23	45019	45074	-55
FEB 23	11794	11884	-90	FEB 23	35257	35114	144
MAR 23	25894	26081	-187	MAR 23	39862	39638	225
APR 23	18323	17991	332	APR 23	39961	39872	89
MAY 23	12977	12957	20	MAY 23	35454	35372	82
JUN 23	9924	9842	82	JUN 23	32026	31852	174
JUL 23	7226	7203	23	JUL 23	31552	31393	159
AUG 23	5014	4978	36	AUG 23	32549	32329	221
SEP 23	6754	6706	48	SEP 23	31004	30810	194
OCT 23	10898	10637	261	OCT 23	35339	35102	237
NOV 23	5997	5980	17	NOV 23	33764	33812	-48
DEC 23	8543	8496	47	DEC 23	32374	32354	21
JAN 24	6462	6277	185	JAN 24	22899	22889	10
FEB 24	1470	1469	1	FEB 24	16050	16042	9
MAR 24	9068	9066	2	MAR 24	21822	21589	233
APR 24	4732	4727	5	APR 24	15371	15262	109
MAY 24	2047	2036	11	MAY 24	15846	15842	4
JUN 24	928	928	0	JUN 24	16234	16238	-4

Source: CME, ICE






	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22
<b>Current Price</b>	<b>\$3.815</b>	<b>\$3.774</b>	<b>\$3.658</b>	<b>\$3.575</b>	<b>\$3.583</b>	<b>\$3.628</b>	<b>\$3.680</b>	<b>\$3.695</b>	<b>\$3.684</b>	<b>\$3.721</b>	<b>\$3.823</b>	<b>\$4.015</b>
Last Week	\$4.258	\$4.188	\$4.014	\$3.786	\$3.756	\$3.791	\$3.838	\$3.851	\$3.838	\$3.875	\$3.971	\$4.158
vs. Last Week	-\$0.443	-\$0.414	-\$0.356	-\$0.211	-\$0.173	-\$0.163	-\$0.158	-\$0.156	-\$0.154	-\$0.154	-\$0.148	-\$0.143
4 Weeks Ago	\$4.880	\$4.974	\$4.861	\$4.590	\$3.967	\$3.900	\$3.930	\$3.973	\$3.977	\$3.956	\$3.984	\$4.061
vs. 4 Weeks Ago	-\$1.065	-\$1.200	-\$1.203	-\$1.015	-\$0.384	-\$0.272	-\$0.250	-\$0.278	-\$0.293	-\$0.235	-\$0.161	-\$0.046
Last Year	\$2.442	\$2.456	\$2.452	\$2.466	\$2.489	\$2.538	\$2.601	\$2.627	\$2.622	\$2.648	\$2.719	\$2.850
vs. Last Year	\$1.373	\$1.318	\$1.206	\$1.109	\$1.094	\$1.090	\$1.079	\$1.068	\$1.062	\$1.073	\$1.104	\$1.165

	Units	Current Price	vs. Last Week	vs. 4 Weeks Ago	vs. Last Year
NatGas Jul21/Oct21	\$/MMBtu	2.224	▲ 0.000	▲ 0.000	▲ 2.191
NatGas Oct21/Nov21	\$/MMBtu	0.361	▲ 0.000	▲ 0.000	▲ 0.302
NatGas Oct21/Jan22	\$/MMBtu	-2.027	▼ -0.242	▼ -1.431	▼ -2.300
NatGas Apr22/Oct22	\$/MMBtu	0.157	▲ 0.057	▲ 0.161	▲ 0.110
WTI Crude	\$/Bbl	70.94	▲ 4.440	▼ -10.650	▲ 24.160
Brent Crude	\$/Bbl	74.42	▲ 4.750	▼ -8.450	▲ 24.170
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	225.03	▲ 14.690	▼ -19.680	▲ 81.460
Propane, Mt. Bel	cents/Gallon	1.01	▲ 0.046	▼ -0.345	▲ 0.421
Ethane, Mt. Bel	cents/Gallon	0.34	▼ -0.012	▼ -0.072	▲ 0.140
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 
12/10/2021						
U.S. Breakout Information	This Week	+/-	Last Week	+/-	Year Ago	
Oil	471	4	467	213	258	
Gas	105	3	102	26	79	
Miscellaneous	0	0	0	-1	1	
Directional	31	0	31	14	17	
Horizontal	521	8	513	215	306	
Vertical	24	-1	25	9	15	
Canada Breakout	This Week	+/-	Last Week	+/-	Year Ago	
Oil	110	-3	113	58	52	
Gas	67	0	67	8	59	
Major Basin Variances	This Week	+/-	Last Week	+/-	Year Ago	
Arkoma Woodford	2	-1	3	2	0	
Barnett	0	-1	1	0	0	
Cana Woodford	25	2	23	17	8	
DJ-Niobrara	11	0	11	4	7	
Eagle Ford	44	2	42	18	26	
Granite Wash	4	1	3	3	1	
Haynesville	46	0	46	6	40	
Marcellus	30	0	30	3	27	
Permian	286	3	283	118	168	
Utica	11	1	10	5	6	
Williston	27	0	27	16	11	