

Page Menu

[Short-term Weather Model Outlooks](#)

[Lower 48 Component Models](#)

[Regional S/D Models Storage Projection](#)

[Weather Model Storage Projection](#)

[Supply – Demand Trends](#)

[Nat Gas Options Volume and Open Interest](#)

[Nat Gas Futures Open Interest](#)

[Price Summary](#)

	Current	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$ 3.02 ▲	\$ 0.00 ▲	\$ 0.02 ▲

	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 37.66 ▼	\$ (1.91) ▼	\$ (2.1) ▼

	Current	Δ from YD	Δ from 7D Avg
Brent Prompt	\$ 39.53 ▼	\$ (1.67) ▼	\$ (2.1) ▼

00z GWDD Change

Cooler Change

Warmer Change

ECMWF Ensemble 00z	1-5 Day	6-10 Day	11-15 Day	Total
12 Hr Chg	-1.9	-3.1	0.3	-4.7
24 Hr Chg	-2.7	-3.8	3.1	-3.4

GFS Ensemble 00z	1-5 Day	6-10 Day	11-15 Day	Total
12 Hr Chg	-0.5	5.9	-5.1	0.3
24 Hr Chg	1.1	5.6	6.0	12.7

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	85.3 ▼	-0.04 ▼	-3.16 ▼

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	30.3 ▲	0.00 ▲	2.24 ▲

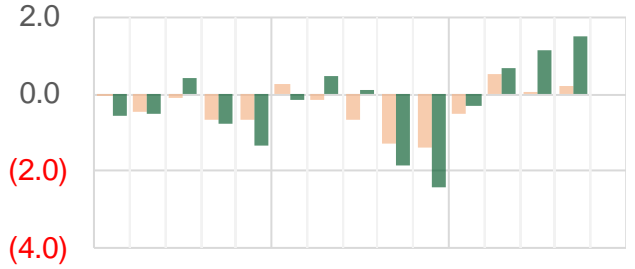
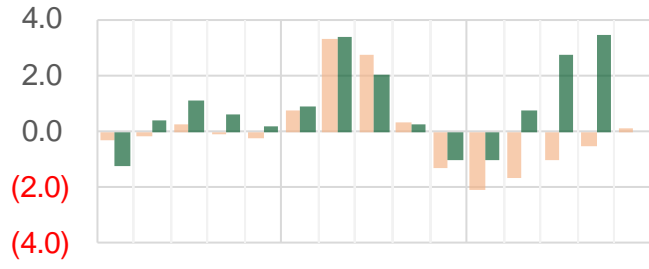
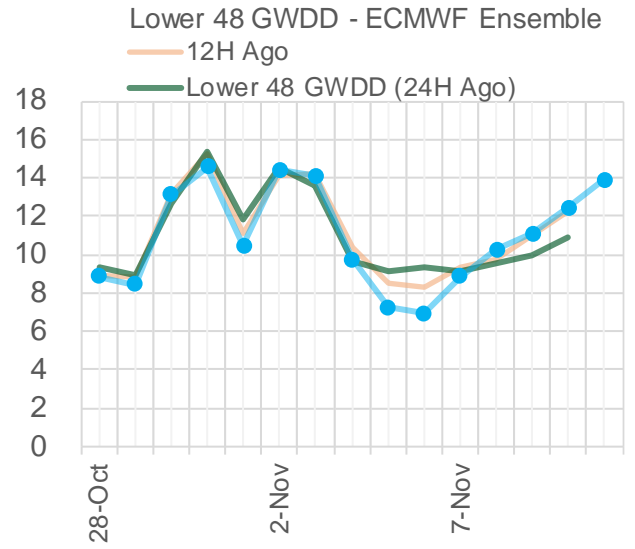
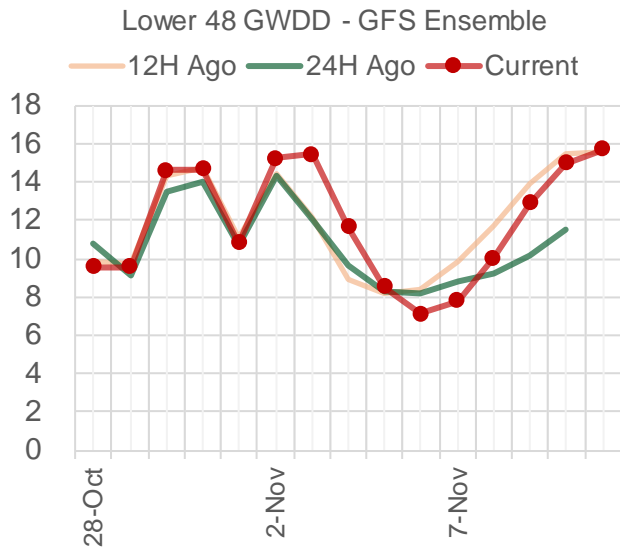
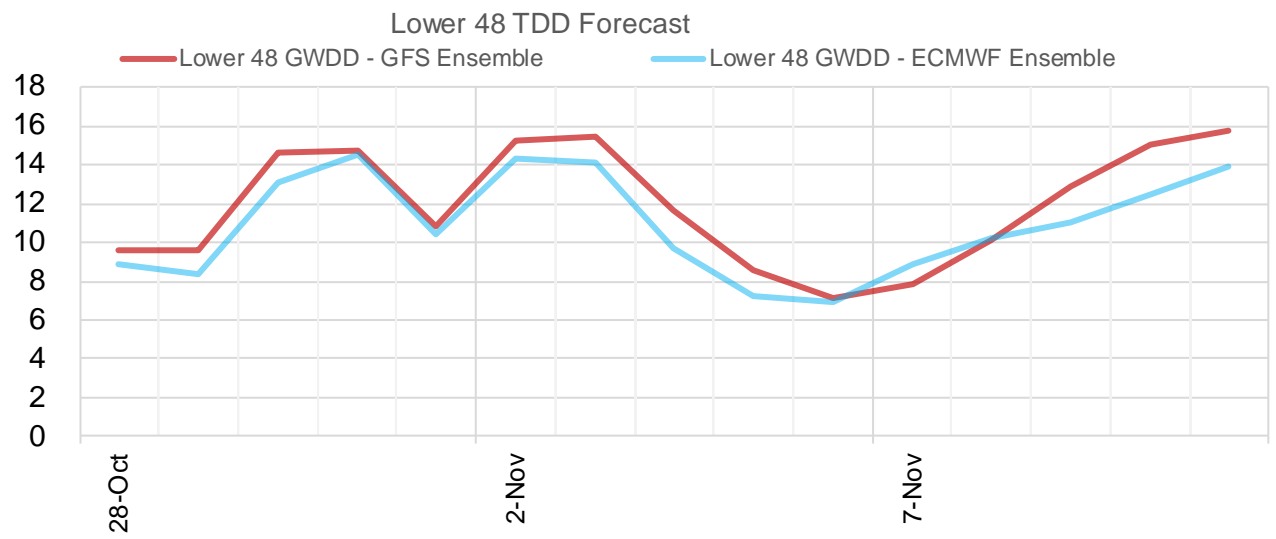
	Current	Δ from YD	Δ from 7D Avg
US ResComm	23.1 ▼	-3.93 ▲	2.83 ▲

	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.6 ▼	-0.08 ▲	0.19 ▲

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	9.2 ▲	0.28 ▲	0.20 ▲

	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.3 ▲	0.09 ▼	-0.01 ▼

Short-term Weather Model Outlooks (00z)



Source: WSI, Bloomberg

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Lower 48 Component Models

Daily Balances

	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct	DoD	vs. 7D
Lower 48 Dry Production	89.6	89.3	89.0	88.8	88.3	85.4	85.3	▼ 0.0	▼ -3.1
Canadian Imports	4.1	4.3	4.5	4.5	4.6	4.7	4.6	▼ -0.1	▲ 0.2
L48 Power	29.1	28.1	25.7	24.8	29.2	30.3	30.3	▲ 0.0	▲ 2.5
L48 Residential & Commercial	12.7	14.4	21.3	26.0	27.3	27.1	23.1	▼ -3.9	▲ 1.7
L48 Industrial	22.5	22.7	23.3	23.4	23.4	23.2	22.5	▼ -0.7	▼ -0.6
L48 Lease and Plant Fuel	4.9	4.9	4.9	4.9	4.9	4.7	4.7	▼ 0.0	▼ -0.2
L48 Pipeline Distribution	2.0	2.1	2.3	2.5	2.8	2.8	2.6	▼ -0.2	▲ 0.2
L48 Regional Gas Consumption	71.2	72.2	77.6	81.6	87.5	88.1	83.3	▼ -4.8	▲ 3.6
Net LNG Delivered	8.33	8.70	9.37	9.41	9.33	8.91	9.19	▲ 0.3	▲ 0.2
Total Mexican Exports	6.6	6.6	6.1	5.8	6.3	6.2	6.3	▲ 0.1	▲ 0.0
Implied Daily Storage Activity	7.6	6.2	0.5	-3.6	-10.2	-13.1	-8.8		
EIA Reported Daily Storage Activity									
Daily Model Error									

EIA Storage Week Balances

	18-Sep	25-Sep	2-Oct	9-Oct	16-Oct	23-Oct	WoW	vs. 4W
Lower 48 Dry Production	87.8	86.9	87.3	87.2	85.8	89.1	▲ 3.3	▲ 2.3
Canadian Imports	3.8	3.6	3.9	4.5	4.0	3.6	▼ -0.4	▼ -0.4
L48 Power	33.5	30.8	30.7	31.0	30.5	28.5	▼ -2.0	▼ -2.2
L48 Residential & Commercial	8.0	9.9	9.5	13.5	11.5	17.0	▲ 5.5	▲ 5.9
L48 Industrial	21.3	21.1	22.2	21.5	21.9	22.8	▲ 0.9	▲ 1.1
L48 Lease and Plant Fuel	4.8	4.8	4.8	4.8	4.7	4.9	▲ 0.2	▲ 0.1
L48 Pipeline Distribution	2.1	2.0	2.0	2.2	2.1	2.2	▲ 0.2	▲ 0.2
L48 Regional Gas Consumption	69.7	68.6	69.2	73.0	70.7	75.4	▲ 4.7	▲ 5.1
Net LNG Exports	7.3	5.8	6.8	7.5	6.9	8.0	▲ 1.1	▲ 1.3
Total Mexican Exports	6.2	6.4	6.3	6.2	6.2	6.3	▲ 0.1	▲ 0.0
Implied Daily Storage Activity	8.3	9.6	8.9	5.1	6.0	2.9	-3.1	
EIA Reported Daily Storage Activity	9.4	10.9	10.7	6.6	7.0			
Daily Model Error	-1.1	-1.2	-1.8	-1.5	-1.0			

Monthly Balances

	2Yr Ago Oct-18	LY Oct-19	Jun-20	Jul-20	Aug-20	Sep-20	MTD Oct-20	MoM	vs. LY
Lower 48 Dry Production	86.7	95.0	86.6	87.8	87.7	87.7	87.5	▼ -0.2	▼ -7.5
Canadian Imports	4.7	4.6	4.0	4.4	4.9	3.8	4.1	▲ 0.3	▼ -0.5
L48 Power	28.8	30.8	35.0	43.8	40.7	33.2	29.6	▼ -3.7	▼ -1.2
L48 Residential & Commercial	16.1	15.2	8.8	8.0	7.7	8.7	15.9	▲ 7.3	▲ 0.7
L48 Industrial	22.6	24.0	19.2	19.3	20.6	21.0	22.3	▲ 1.3	▼ -1.7
L48 Lease and Plant Fuel	4.9	5.2	4.8	4.9	4.8	4.8	4.8	▼ 0.0	▼ -0.4
L48 Pipeline Distribution	2.1	2.3	2.2	2.4	2.3	2.1	2.2	▲ 0.1	▼ 0.0
L48 Regional Gas Consumption	74.5	77.4	70.1	78.4	76.1	69.8	74.9	▲ 5.1	▼ -2.6
Net LNG Exports	3.3	6.7	4.0	3.3	4.0	5.9	7.8	▲ 1.9	▲ 1.1
Total Mexican Exports	5.0	5.5	5.7	6.1	6.3	6.4	6.2	▼ -0.1	▲ 0.8
Implied Daily Storage Activity	8.6	10.0	10.9	4.4	6.2	9.4	2.7		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

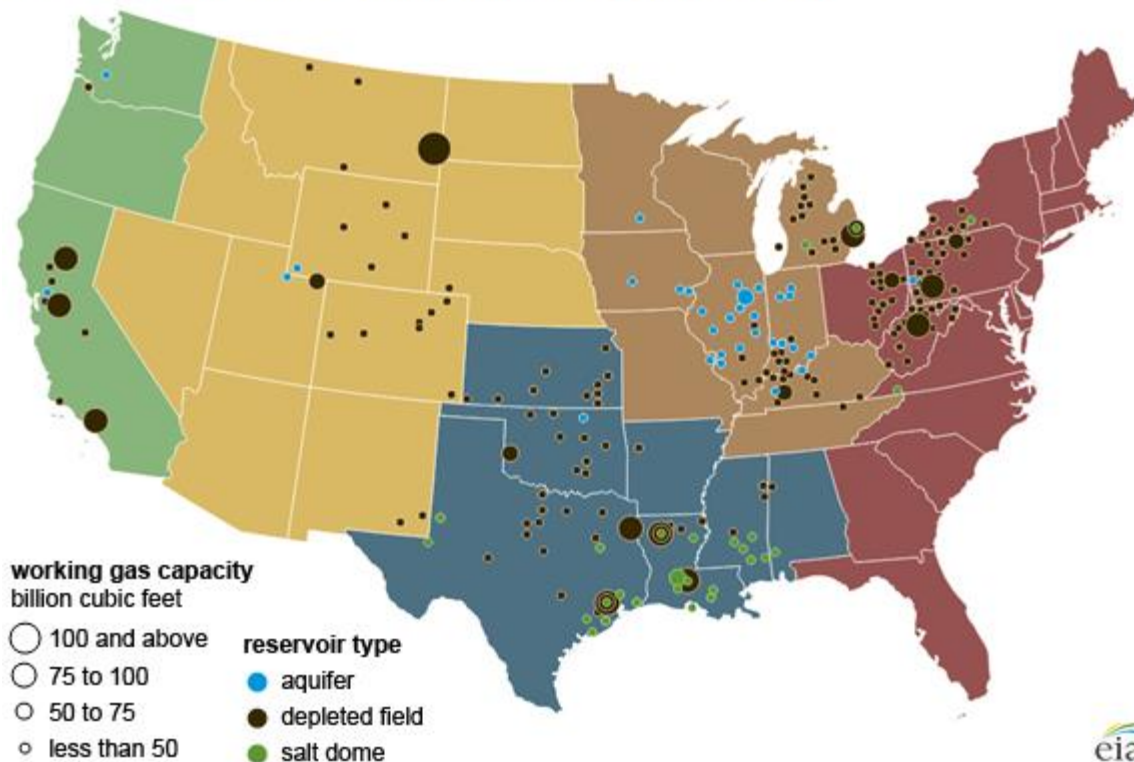
Regional S/D Models Storage Projection

Week Ending 23-Oct

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	2.6	1.5	4.1	29
East	0.3	1.9	2.2	15
Midwest	0.3	0.7	1.0	7
Mountain	3.3	-3.2	0.2	1
South Central	-1.2	2.0	0.8	6
Pacific	0.0	0.0	0.0	0

*Adjustment Factor is calculated based on historical regional deltas

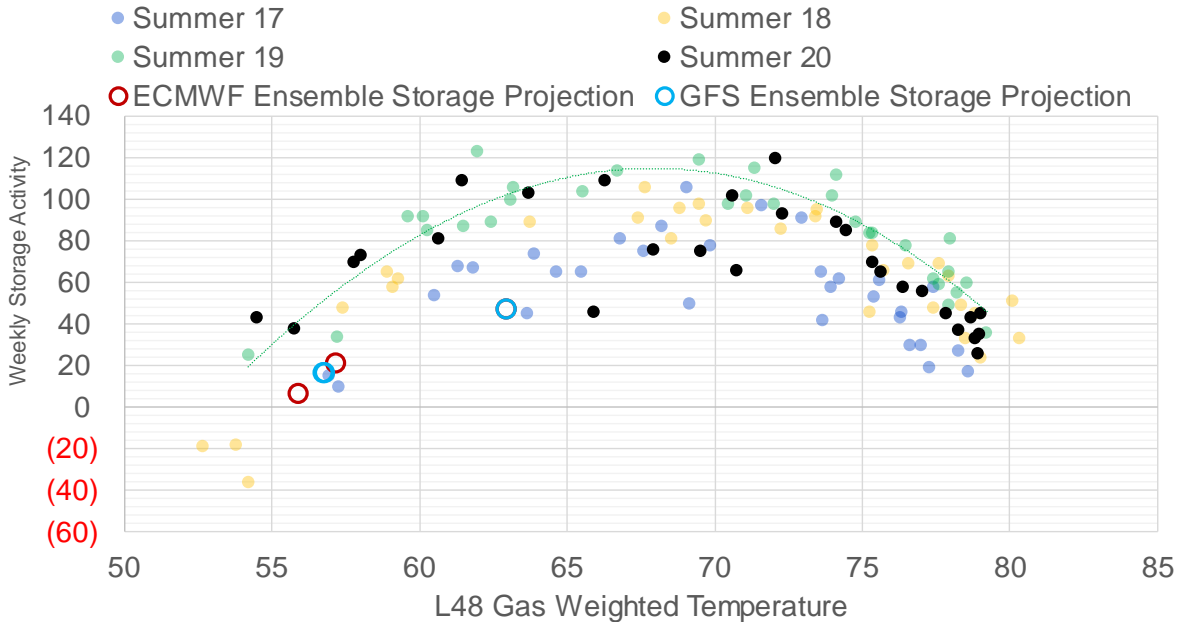
U.S. underground natural gas storage facilities by type (July 2015)



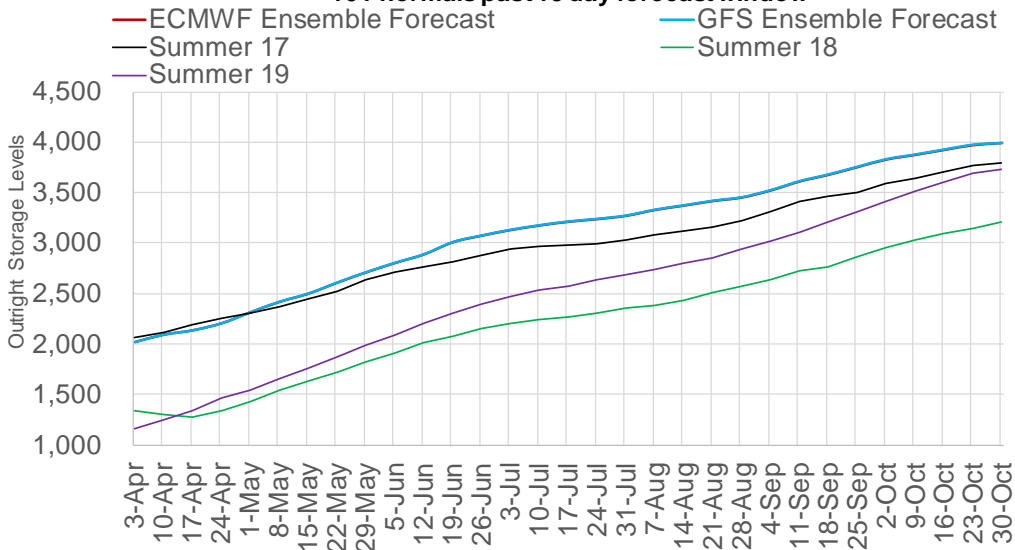
Weather Model Storage Projection

Next report and beyond	
Week Ending	Week Storage Projection
30-Oct	19
06-Nov	12
13-Nov	-5

Weather Storage Model - Next 4 Week Forecast



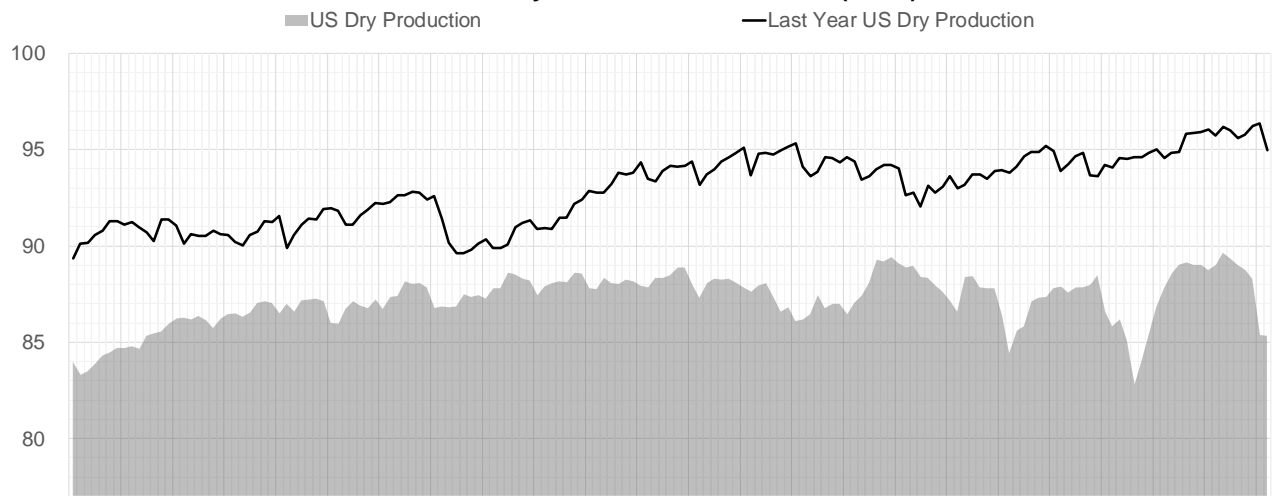
Weather Based End of Winter Projection (Bcf) 10Y normals past 15 day forecast window



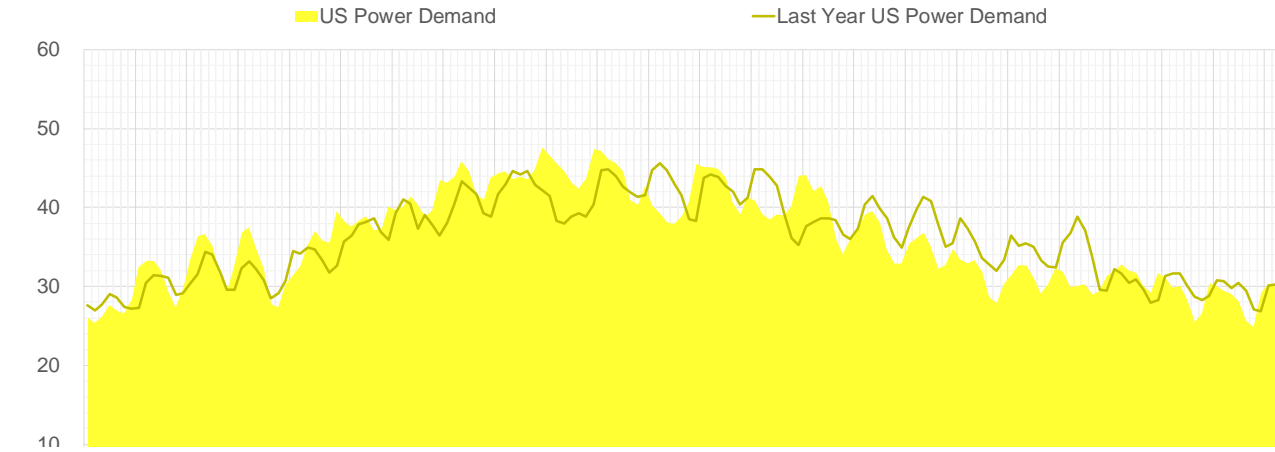
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Supply – Demand Trends

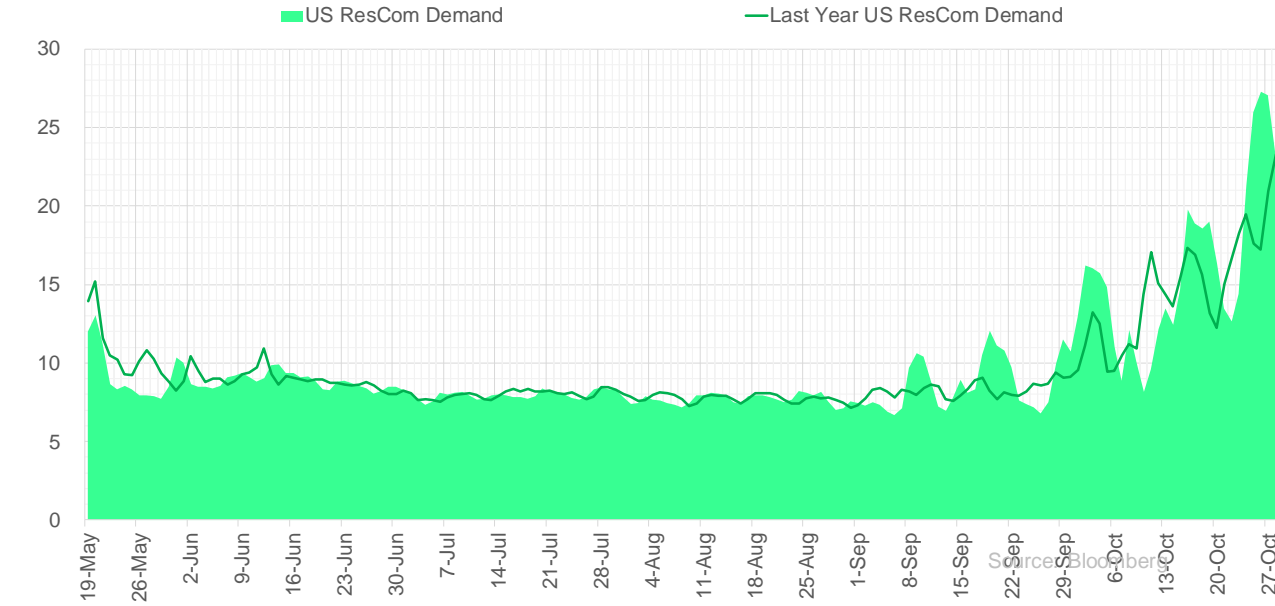
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)

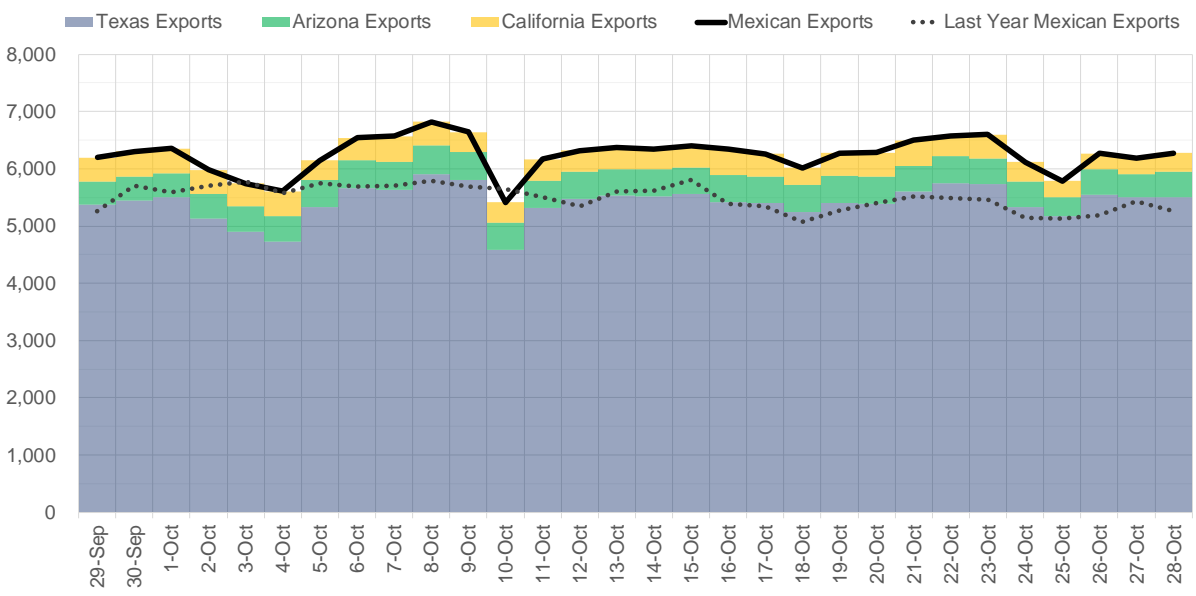


US Daily ResCom Consumption (Bcf/d)

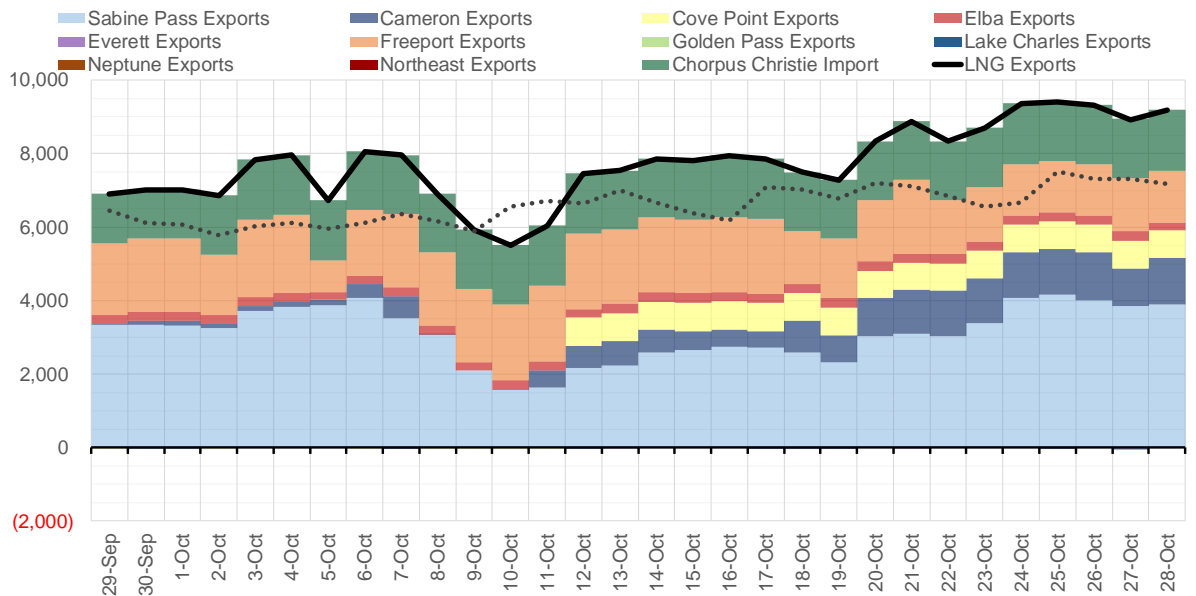


Source: Bloomberg

Mexican Exports - Last 30 days (MMcf/d)



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



Source: Bloomberg

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

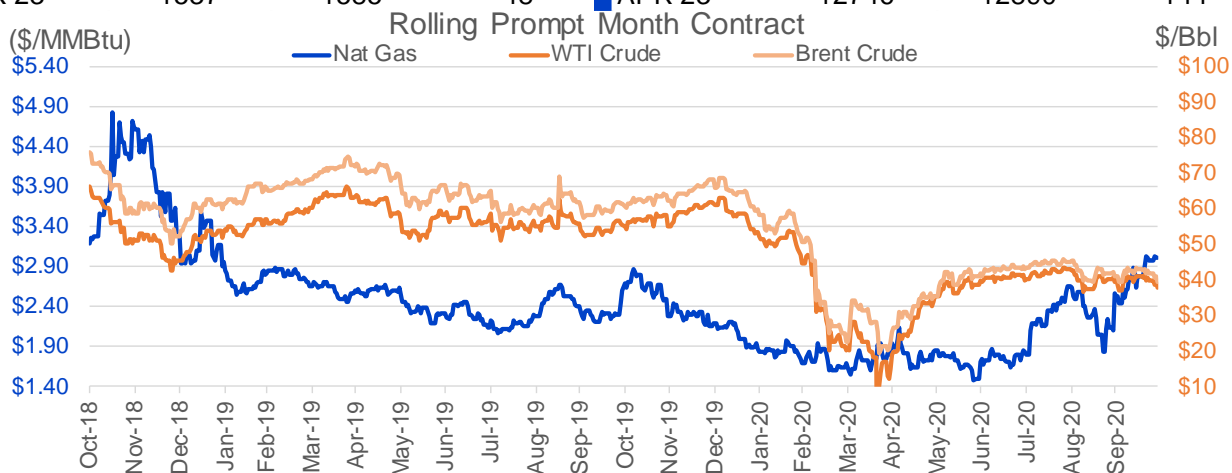
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
12	2020	C	4.00	8649	11	2020	P	2.00	56083
12	2020	C	4.50	4175	11	2020	C	3.50	38981
12	2020	P	2.50	4112	3	2021	P	2.00	36558
12	2020	C	3.50	3823	12	2020	P	2.00	32634
11	2020	C	3.15	3691	3	2021	C	6.00	31769
12	2020	C	3.75	3146	3	2021	C	5.00	30753
11	2020	C	3.10	3098	11	2020	C	3.25	29831
12	2020	P	2.75	2638	1	2021	C	4.50	29271
12	2020	P	3.25	2559	10	2021	C	4.00	28260
1	2021	C	3.50	2513	3	2021	C	3.25	28028
1	2021	C	5.00	2402	4	2021	C	5.00	27070
4	2021	P	2.75	2008	3	2021	C	4.00	26184
5	2021	P	2.75	2008	1	2021	C	3.50	25971
6	2021	P	2.75	2008	10	2021	C	3.25	25790
7	2021	P	2.75	2008	3	2021	C	7.00	25708
8	2021	P	2.75	2008	12	2020	P	2.50	25566
9	2021	P	2.75	2008	11	2020	C	4.00	23906
10	2021	P	2.75	2008	11	2020	P	2.25	23580
11	2020	C	3.25	2003	12	2020	C	3.75	23454
11	2020	C	3.05	1746	11	2020	C	5.00	22403
12	2020	P	2.85	1678	12	2020	C	4.50	21955
11	2020	P	2.90	1661	1	2021	C	6.00	21349
12	2020	C	3.00	1501	3	2021	C	3.00	21156
3	2021	C	4.00	1480	11	2020	C	3.00	20143
11	2020	C	3.00	1448	11	2020	P	2.50	20088
12	2020	P	2.00	1416	8	2021	C	4.00	20049
12	2020	P	3.00	1397	2	2021	C	5.00	19954
2	2021	C	4.50	1315	1	2021	P	2.50	19599
3	2021	C	5.00	1301	11	2020	P	1.75	19541
12	2020	C	4.25	1238	12	2020	C	5.00	19354
6	2021	P	2.50	1206	11	2020	C	2.75	19302
12	2020	C	5.00	1205	12	2020	C	3.50	19261
4	2021	P	2.50	1185	3	2021	C	3.50	19053
5	2021	P	2.50	1180	2	2021	P	2.25	19037
7	2021	P	2.50	1180	4	2021	C	4.00	18898
8	2021	P	2.50	1180	1	2021	P	2.25	18168
9	2021	P	2.50	1180	8	2021	P	2.25	17742
10	2021	P	2.50	1180	12	2020	C	4.00	17714
12	2020	P	2.25	1142	1	2021	C	3.00	17295
1	2021	C	3.00	1019	1	2021	C	5.00	17270
4	2021	P	3.00	1000	5	2021	C	4.00	17030
5	2021	P	3.00	1000	1	2021	C	3.75	16997
6	2021	P	3.00	1000	10	2021	C	5.00	16815
7	2021	P	3.00	1000	11	2020	P	2.65	16673
8	2021	P	3.00	1000	2	2021	C	3.50	16619
9	2021	P	3.00	1000	2	2021	P	2.50	16256
10	2021	P	3.00	1000	11	2020	P	2.75	15899
3	2021	P	1.75	900	3	2021	P	2.50	15856
11	2020	P	3.05	875	12	2020	P	2.75	15847
					1	2021	C	7	15522

Source: CME, ICE

Nat Gas Futures Open Interest

CME and ICE Combined

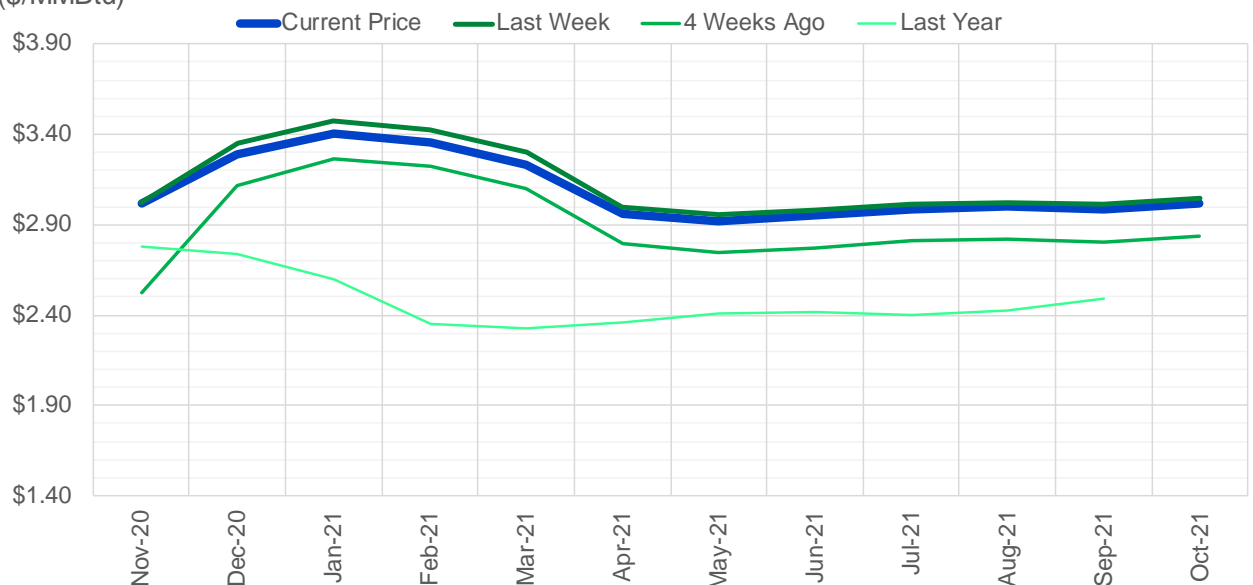
CME Henry Hub Futures (10,000 MMBtu)				ICE Henry Hub Futures Contract Equivalent (10,000 MM			
	Current	Prior	Daily Change	FOR JUNE 26	Current	Prior	Daily Change
NOV 20	3575	14731	-11156	NOV 20	63880	62131	1748.5
DEC 20	178469	181714	-3245	DEC 20	80378	78470	1907.5
JAN 21	204298	203251	1047	JAN 21	89600	90331	-730.75
FEB 21	84385	84060	325	FEB 21	64740	64675	65
MAR 21	134839	136391	-1552	MAR 21	86783	85825	957.75
APR 21	73593	74030	-437	APR 21	68781	67429	1352
MAY 21	50626	49803	823	MAY 21	65428	65052	375.75
JUN 21	34766	34335	431	JUN 21	57173	56930	242.75
JUL 21	26486	26400	86	JUL 21	59195	58959	235.5
AUG 21	27762	27931	-169	AUG 21	62431	62010	421.25
SEP 21	39394	39415	-21	SEP 21	57225	57047	177.5
OCT 21	95676	89992	5684	OCT 21	65433	69675	-4242.5
NOV 21	34079	33935	144	NOV 21	52042	51829	212.5
DEC 21	28141	27561	580	DEC 21	47391	47321	69.75
JAN 22	31902	32034	-132	JAN 22	46086	45300	786
FEB 22	20417	20311	106	FEB 22	37405	37247	158
MAR 22	21969	21909	60	MAR 22	40243	40092	151.25
APR 22	21543	21536	7	APR 22	38031	37956	75.25
MAY 22	10033	9591	442	MAY 22	29314	29314	0.25
JUN 22	5149	5125	24	JUN 22	28118	28080	37.5
JUL 22	4451	4456	-5	JUL 22	29813	29718	94.25
AUG 22	3310	3320	-10	AUG 22	28219	28093	125.5
SEP 22	3388	3356	32	SEP 22	27712	27682	30
OCT 22	4342	4305	37	OCT 22	32095	32026	69.75
NOV 22	3571	3571	0	NOV 22	27393	27278	115.5
DEC 22	4273	4270	3	DEC 22	30926	30752	173.5
JAN 23	3777	3806	-29	JAN 23	14679	14520	159.25
FEB 23	939	941	-2	FEB 23	13707	13564	143.5
MAR 23	2305	2140	165	MAR 23	13779	13656	123.5
APR 23	1537	1585	-48	APR 23	12746	12890	-144



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(\$/MMBtu)

Nat Gas Term Structure



	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21
Current Price	\$3.020	\$3.291	\$3.401	\$3.359	\$3.229	\$2.960	\$2.918	\$2.951	\$2.987	\$3.000	\$2.984	\$3.020
Last Week	\$3.023	\$3.348	\$3.471	\$3.427	\$3.304	\$2.996	\$2.953	\$2.980	\$3.016	\$3.024	\$3.011	\$3.046
vs. Last Week	-\$0.003	-\$0.057	-\$0.070	-\$0.068	-\$0.075	-\$0.036	-\$0.035	-\$0.029	-\$0.029	-\$0.024	-\$0.027	-\$0.026
4 Weeks Ago	\$2.527	\$3.117	\$3.267	\$3.221	\$3.099	\$2.794	\$2.748	\$2.774	\$2.809	\$2.816	\$2.803	\$2.833
vs. 4 Weeks Ago	\$0.493	\$0.174	\$0.134	\$0.138	\$0.130	\$0.166	\$0.170	\$0.177	\$0.178	\$0.184	\$0.181	\$0.187
Last Year	\$2.691	\$2.781	\$2.737	\$2.598	\$2.347	\$2.327	\$2.363	\$2.406	\$2.415	\$2.399	\$2.427	\$2.490
vs. Last Year	\$0.329	\$0.510	\$0.664	\$0.761	\$0.882	\$0.633	\$0.555	\$0.545	\$0.572	\$0.601	\$0.557	\$0.530

	Units	Cash Settled	Prompt Settle	Cash to Prompt
AGT Citygate	\$/MMBtu	2.60	3.75	1.15
TETCO M3	\$/MMBtu	1.76	2.52	0.76
FGT Zone 3	\$/MMBtu	2.09	3.06	0.97
Zone 6 NY	\$/MMBtu	2.09	2.67	0.58
Chicago Citygate	\$/MMBtu	3.05	2.99	-0.06
Michcon	\$/MMBtu	2.64	2.89	0.25
Columbia TCO Pool	\$/MMBtu	2.31	2.58	0.27
Ventura	\$/MMBtu	7.30	3.04	-4.26
Rockies/Opal	\$/MMBtu	3.62	2.82	-0.80
El Paso Permian Basin	\$/MMBtu	3.05	1.74	-1.31
Socal Citygate	\$/MMBtu	4.39	3.53	-0.86
Malin	\$/MMBtu	3.69	3.44	-0.25
Houston Ship Channel	\$/MMBtu	3.03	3.02	-0.01
Henry Hub Cash	\$/MMBtu	3.03	2.90	-0.13
AECO Cash	C\$/GJ	2.41	2.55	0.14
Station2 Cash	C\$/GJ	2.41	4.97	2.56
Dawn Cash	C\$/GJ	2.82	2.95	0.13

Source: CME, Bloomberg

	Units	Current Price	vs. 4 Weeks			
			vs. Last Week	Ago	vs. Last Year	
NatGas Jan/Apr	\$/MMBtu	-0.44	▲ 0.034	▲ 0.032	▲ 0.012	
NatGas Mar/Apr	\$/MMBtu	-0.269	▲ 0.039	▼ -0.574	▼ -0.549	
NatGas Oct/Nov	\$/MMBtu	0.92	▼ -0.003	▲ 0.493	▲ 0.856	
NatGas Oct/Jan	\$/MMBtu	1.30	▼ -0.070	▲ 0.134	▲ 0.957	
WTI Crude	\$/Bbl	37.66	▼ -2.370	▼ -2.560	▼ -17.400	
Brent Crude	\$/Bbl	39.53	▼ -2.200	▼ -1.420	▼ -21.080	
Fuel Oil, NY Harbour 1%	\$/Bbl	98.03	▲ 0.000	▲ 0.000	▲ 0.000	
Heating Oil	cents/Gallon	112.18	▼ -1.810	▼ -2.360	▼ -79.180	
Propane, Mt. Bel	cents/Gallon	0.52	▲ 0.001	▲ 0.029	▲ 0.057	
Ethane, Mt. Bel	cents/Gallon	0.22	▼ -0.002	▲ 0.016	▲ 0.027	
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▲ 0.050	
Coal, ILB	\$/MTon	31.05	▲ 0.000	▲ 0.000	▼ -4.500	