

	Current	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$ 3.26 ▲	\$ 0.26 ▲	\$ 0.26

	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 35.87 ▼	\$ (1.52) ▼	\$ (3.5)

	Current	Δ from YD	Δ from 7D Avg
Brent Prompt	\$ 37.58 ▼	\$ (1.54) ▼	\$ (3.6)

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00z GWDD Change

Cooler Change

Warmer Change

ECMWF Ensemble 00z	1-5 Day	6-10 Day	11-15 Day	Total
12 Hr Chg	-0.7	-2.9	-3.9	-7.5
24 Hr Chg	1.0	-0.6	-6.0	-5.6

GFS Ensemble 00z	1-5 Day	6-10 Day	11-15 Day	Total
12 Hr Chg	1.7	-1.1	-0.3	0.3
24 Hr Chg	0.6	-5.0	-9.3	-13.7

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	85.4 ▲	1.07 ▼	-2.41

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	0.0 ▼	-30.36 ▼	-28.23

	Current	Δ from YD	Δ from 7D Avg
US ResComm	0.0 ▼	-23.01 ▼	-21.65

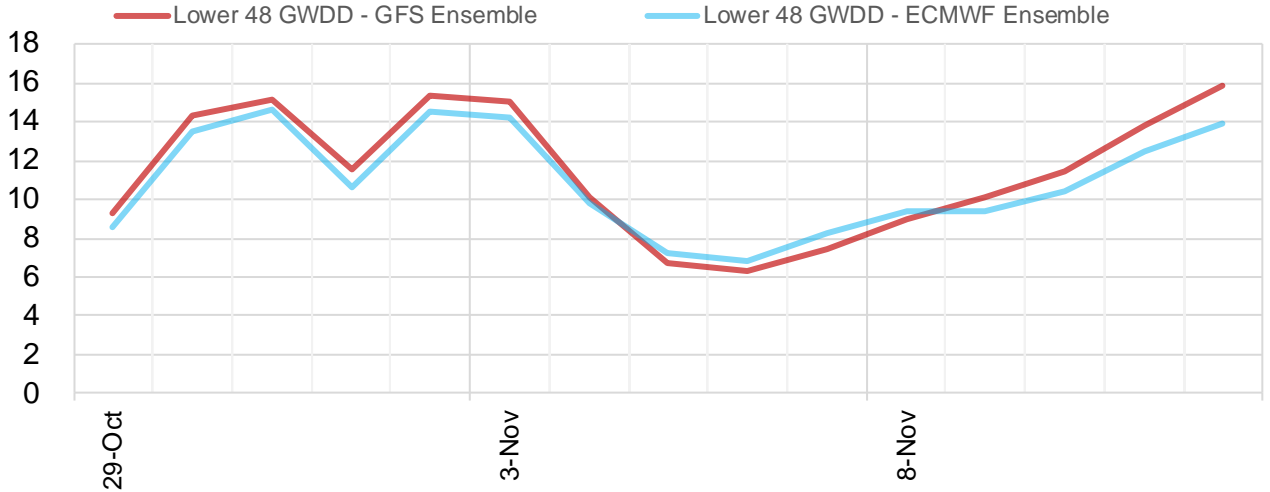
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	5.4 ▲	0.33 ▲	0.81

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	9.7 ▲	0.39 ▲	0.61

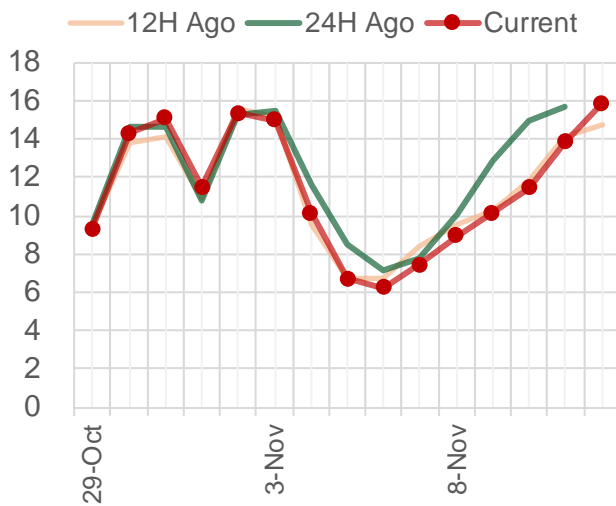
	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.1 ▼	-0.34 ▼	-0.24

Short-term Weather Model Outlooks (00z)

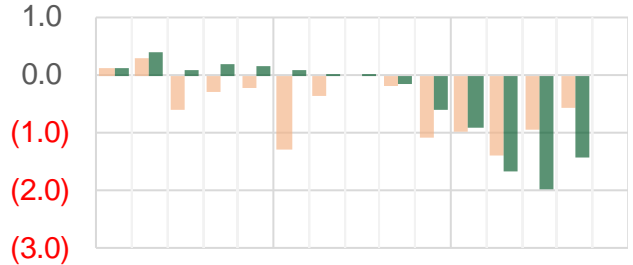
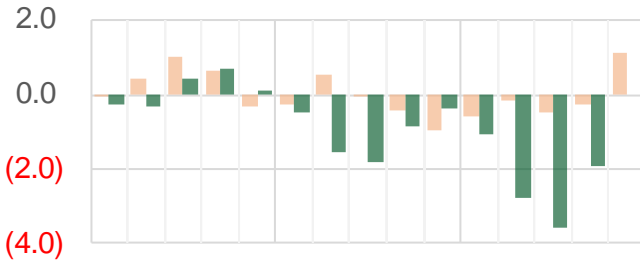
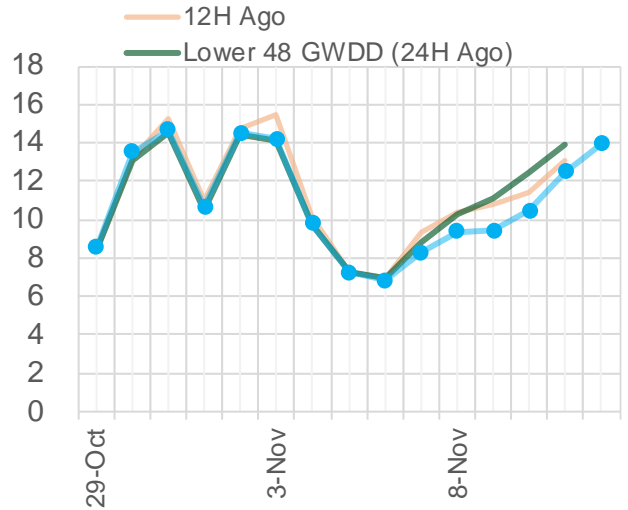
Lower 48 TDD Forecast



Lower 48 GWDD - GFS Ensemble



Lower 48 GWDD - ECMWF Ensemble



Source: WSI, Bloomberg

Lower 48 Component Models

Daily Balances

	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct	29-Oct	DoD	vs. 7D
Lower 48 Dry Production	89.3	89.0	88.8	88.3	85.4	84.3	85.4	▲ 1.1	▼ -2.1
Canadian Imports	4.3	4.5	4.5	4.6	5.0	5.1	5.4	▲ 0.3	▲ 0.7
L48 Power	28.1	25.7	24.8	29.2	30.3	30.4	0.0	▼ -30.4	▼ -28.1
L48 Residential & Commercial	14.4	21.3	26.0	27.3	26.9	23.0	0.0	▼ -23.0	▼ -23.2
L48 Industrial	22.9	23.5	23.6	23.6	23.4	22.7	0.0	▼ -22.7	▼ -23.3
L48 Lease and Plant Fuel	4.9	4.9	4.9	4.9	4.7	4.7	0.0	▼ -4.7	▼ -4.8
L48 Pipeline Distribution	2.1	2.3	2.5	2.8	2.8	2.6	0.0	▼ -2.6	▼ -2.5
L48 Regional Gas Consumption	72.4	77.8	81.8	87.7	88.1	83.3	0.0	▼ -83.3	▼ -81.8
Net LNG Delivered	8.70	9.37	9.41	9.33	8.91	9.27	9.66	▲ 0.4	▲ 0.5
Total Mexican Exports	6.6	6.1	5.8	6.3	6.3	6.4	6.1	▼ -0.3	▼ -0.2
Implied Daily Storage Activity	6.0	0.3	-3.8	-10.4	-12.9	-9.6	75.1		
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	▲ 3.2	▲ 2.3
Canadian Imports	3.9	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	13.6	11.5	17.0	▲ 5.5	▲ 5.9
L48 Industrial	21.3	21.1	22.2	21.5	21.9	22.8	▲ 0.9	▲ 1.2
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	▲ 0.1
Implied Daily Storage Activity	8.4	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	-1.0	-1.2	-1.8	-1.5	-1.0			

Monthly Balances

	2Yr Ago	LY					MTD	MoM	vs. LY
	Oct-18	Oct-19	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20		
Lower 48 Dry Production	86.7	95.0	86.6	87.8	87.7	87.7	87.3	▼ -0.3	▼ -7.6
Canadian Imports	4.7	4.6	4.0	4.4	4.9	3.8	4.2	▲ 0.4	▼ -0.4
L48 Power	28.8	30.8	35.0	43.8	40.7	33.2	28.6	▼ -4.7	▼ -2.2
L48 Residential & Commercial	16.1	15.2	8.8	8.0	7.7	8.7	15.4	▲ 6.7	▲ 0.2
L48 Industrial	22.6	24.0	19.2	19.3	20.6	21.0	21.6	▲ 0.6	▼ -2.4
L48 Lease and Plant Fuel	4.9	5.2	4.8	4.9	4.8	4.8	4.6	▼ -0.2	▼ -0.6
L48 Pipeline Distribution	2.1	2.3	2.2	2.4	2.3	2.1	2.2	▲ 0.1	▼ -0.1
L48 Regional Gas Consumption	74.5	77.4	70.1	78.4	76.1	69.8	72.3	▲ 2.5	▼ -5.1
Net LNG Exports	3.3	6.7	4.0	3.3	4.0	5.9	7.9	▲ 1.9	▲ 1.2
Total Mexican Exports	5.0	5.5	5.7	6.1	6.3	6.4	6.3	▼ -0.1	▲ 0.8
Implied Daily Storage Activity	8.6	10.0	10.9	4.4	6.2	9.4	5.1		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

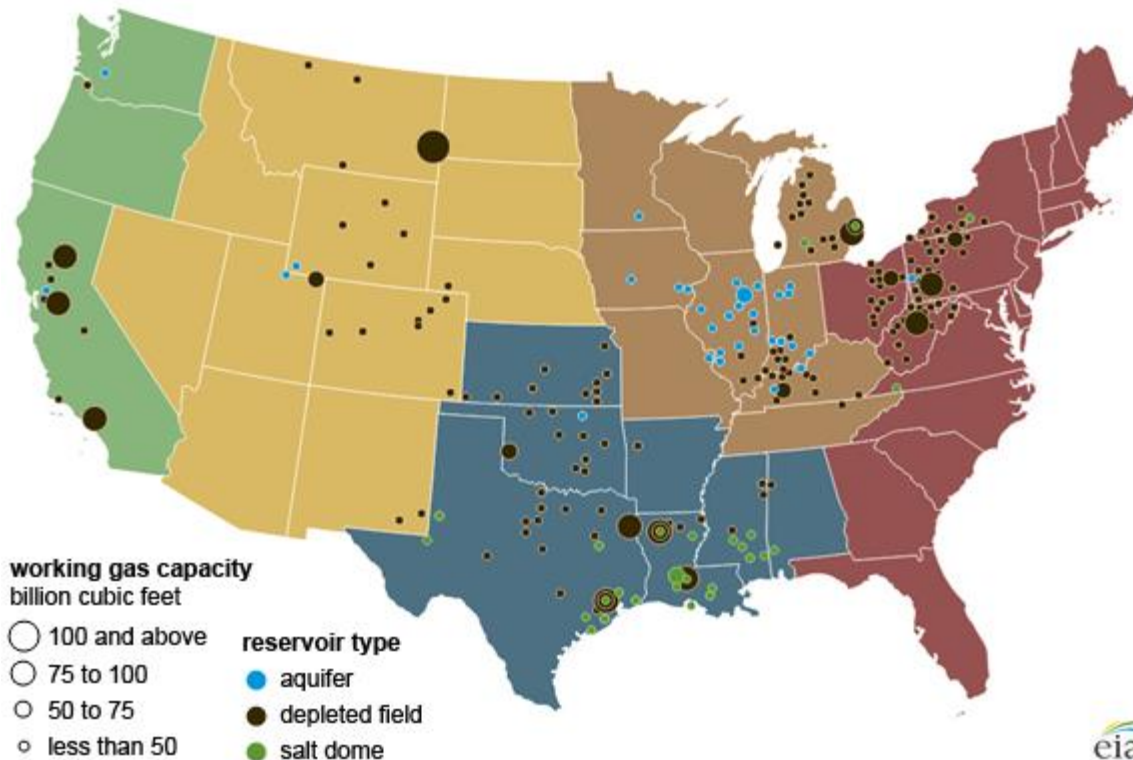
Regional S/D Models Storage Projection

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	5
Pacific	0.0	0.0	0.0	0

*Adjustment Factor is calculated based on historical regional deltas

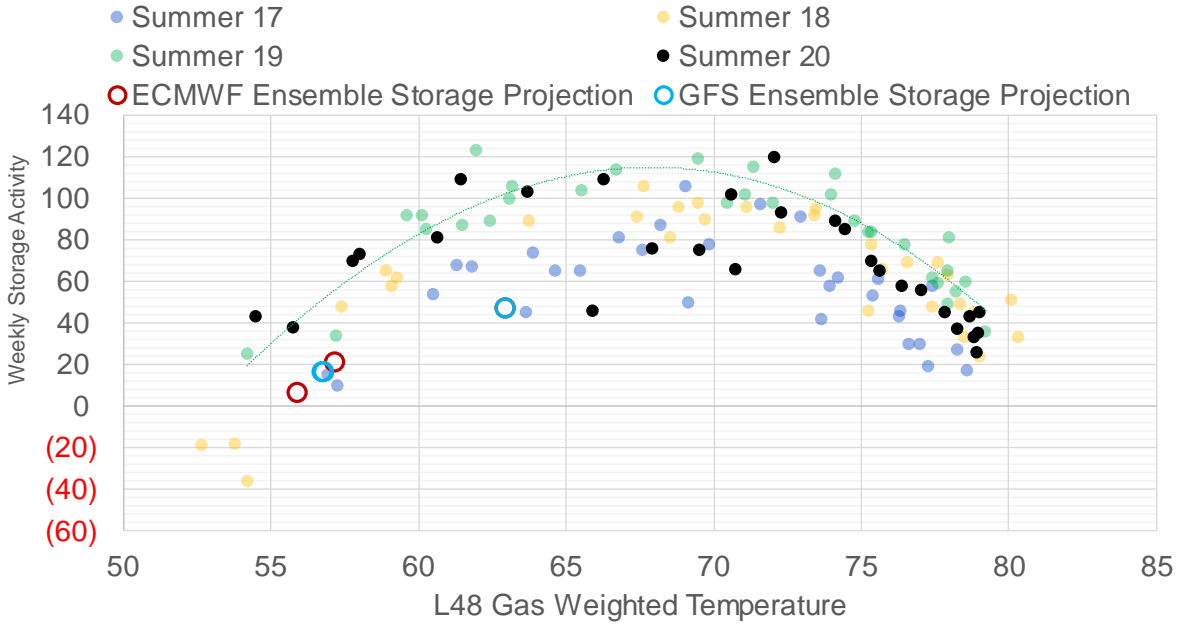
U.S. underground natural gas storage facilities by type (July 2015)



Weather Model Storage Projection

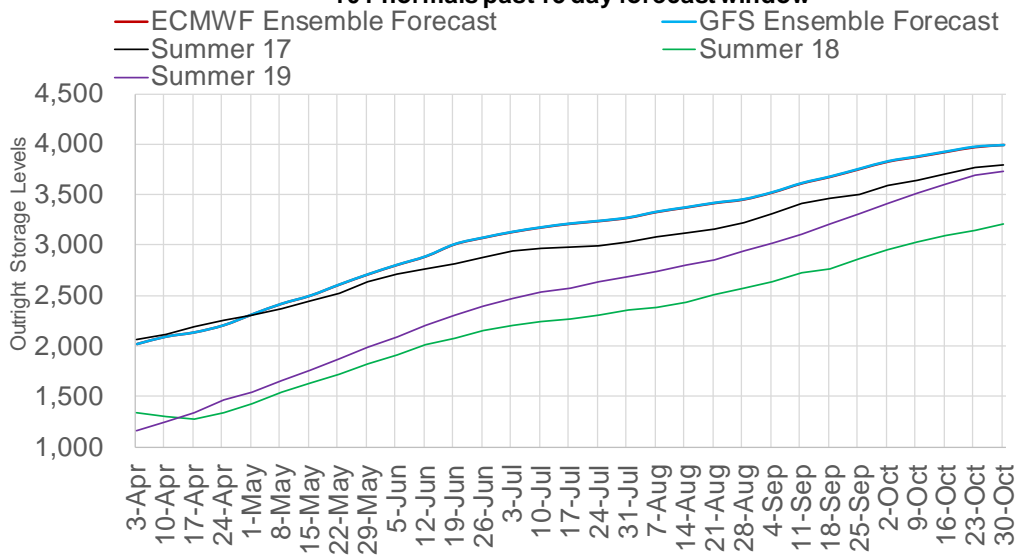
Next report and beyond	
Week Ending	Week Storage Projection
30-Oct	19
06-Nov	12
13-Nov	-5

Weather Storage Model - Next 4 Week Forecast



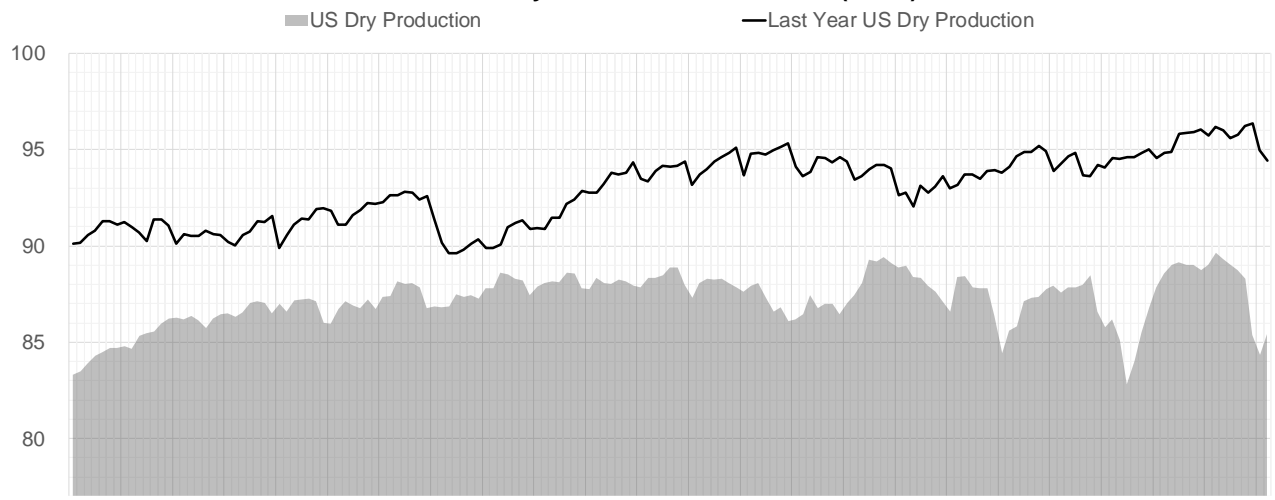
Weather Based End of Winter Projection (Bcf)

10Y normals past 15 day forecast window

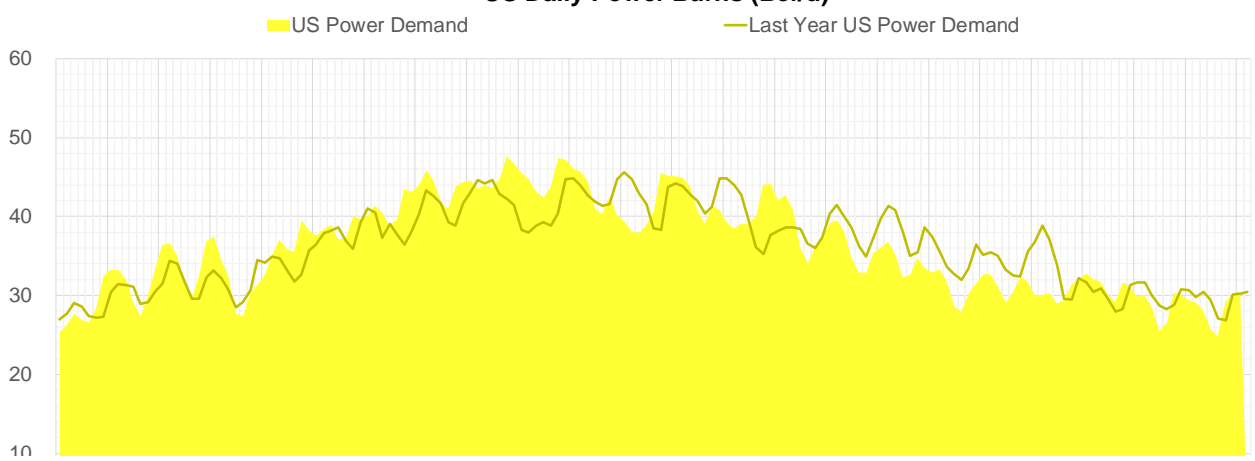


The risk of trading futures and options and other derivatives involves a substantial risk of loss and is not suitable for all persons. Each person must consider whether a particular trade, combination of trades, or strategy is suitable for that person's financial means and objectives. Past results are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

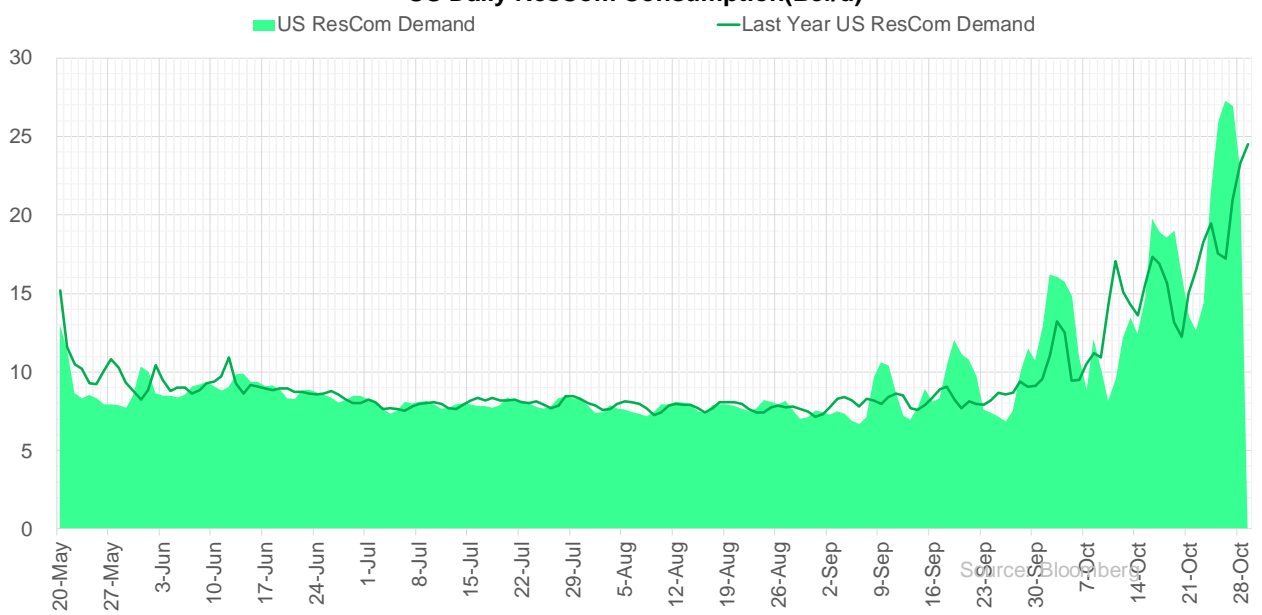
Supply – Demand Trends US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)

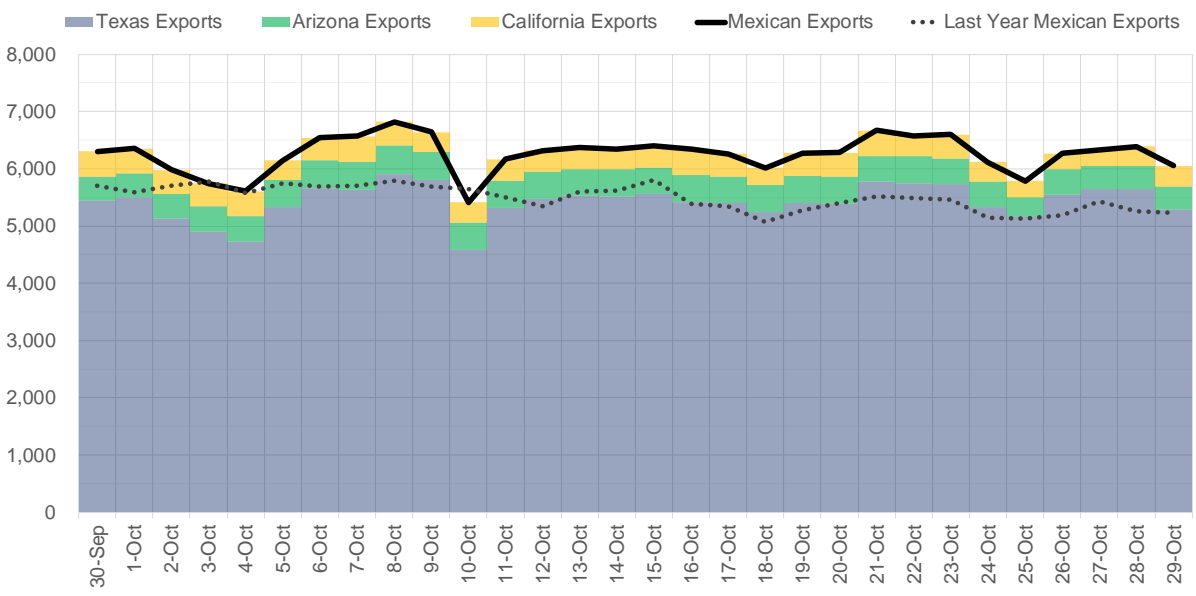


US Daily ResCom Consumption (Bcf/d)

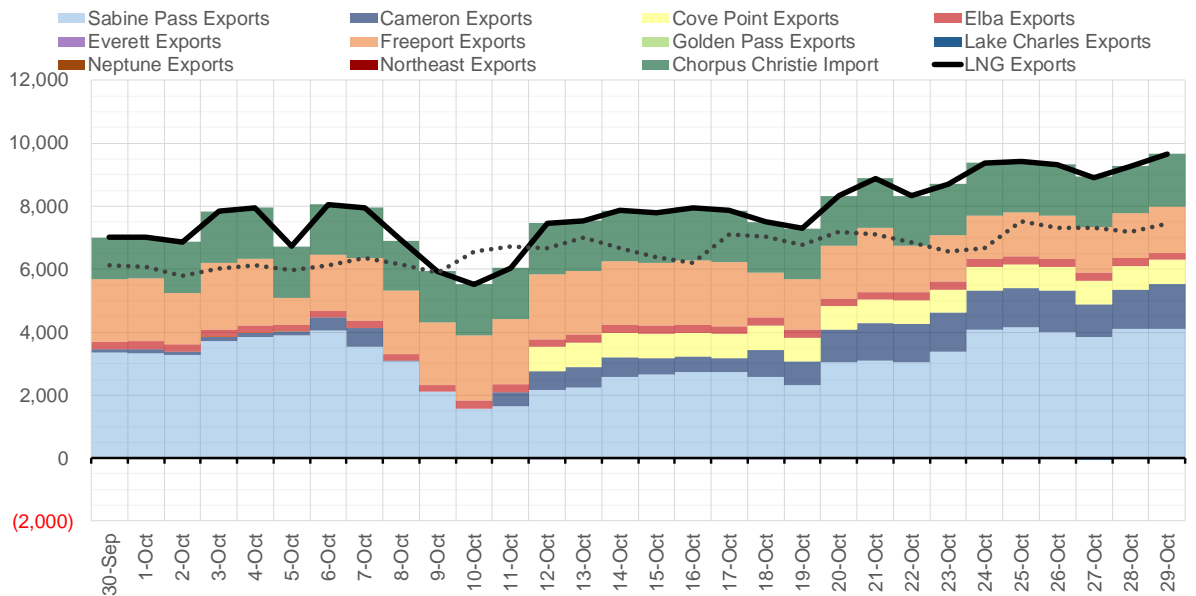


Source: Bloomberg

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

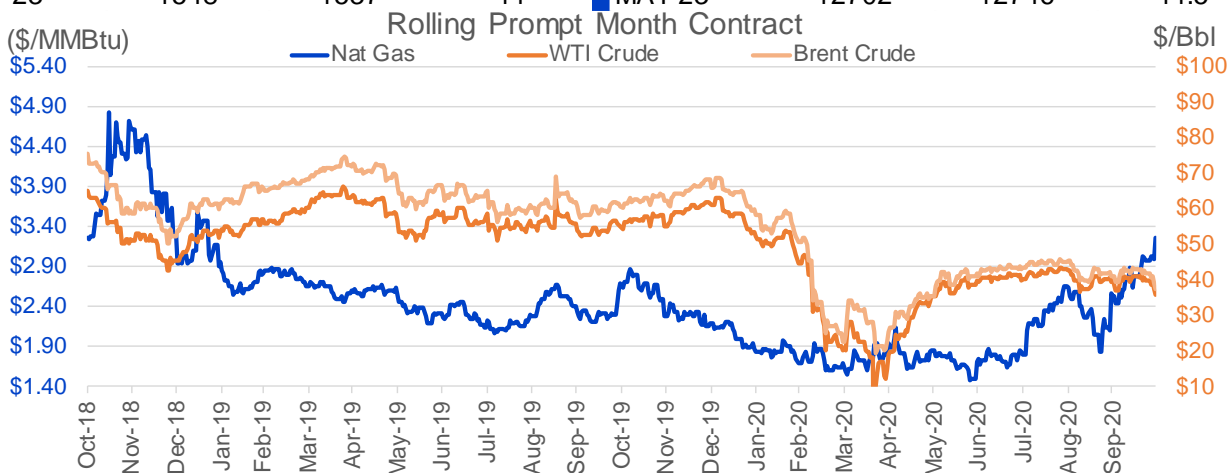
Nat Gas Futures Open Interest

CME and ICE Combined

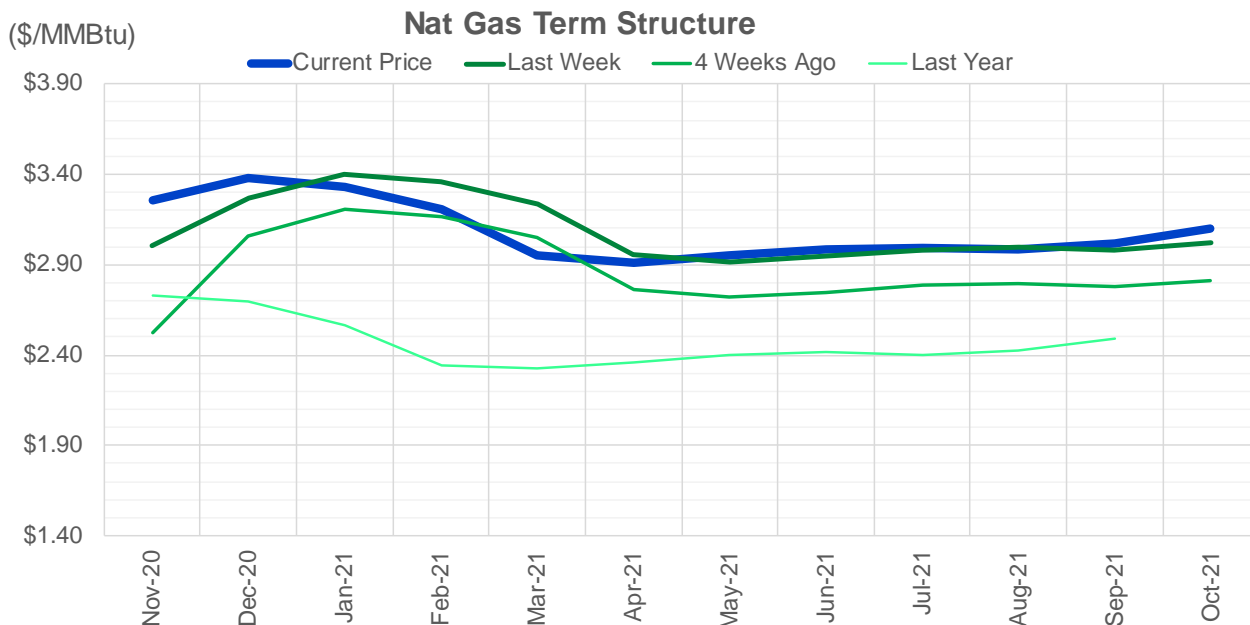
CME Henry Hub Futures (10,000 MMBtu)

ICE Henry Hub Futures Contract Equivalent (10,000 MM

	Current	Prior	Daily Change	FOR JUNE 26	Current	Prior	Daily Change
DEC 20	589	3576	-2987	DEC 20	65067	63880	1187
JAN 21	178059	178443	-384	JAN 21	82400	80378	2022
FEB 21	205600	204274	1326	FEB 21	89947	89600	347.25
MAR 21	84683	84362	321	MAR 21	64864	64740	124.25
APR 21	134147	134829	-682	APR 21	86678	86783	-104.25
MAY 21	73760	73360	400	MAY 21	68647	68781	-134
JUN 21	52087	50594	1493	JUN 21	65724	65428	296.5
JUL 21	34891	34766	125	JUL 21	57362	57173	188.5
AUG 21	26498	26486	12	AUG 21	59389	59195	194.5
SEP 21	27689	27762	-73	SEP 21	62980	62431	549.5
OCT 21	39495	39394	101	OCT 21	57379	57225	154
NOV 21	94789	95676	-887	NOV 21	65832	65433	399.25
DEC 21	34101	34079	22	DEC 21	52274	52042	231.75
JAN 22	28501	28141	360	JAN 22	47554	47391	163
FEB 22	31864	31902	-38	FEB 22	46018	46086	-67.5
MAR 22	20494	20417	77	MAR 22	37444	37405	39.5
APR 22	22563	21969	594	APR 22	40323	40243	80
MAY 22	21915	21543	372	MAY 22	38106	38031	75
JUN 22	9711	10033	-322	JUN 22	29531	29314	217.25
JUL 22	5181	5149	32	JUL 22	28283	28118	165
AUG 22	4564	4451	113	AUG 22	30018	29813	205
SEP 22	3323	3310	13	SEP 22	28323	28219	104
OCT 22	3384	3388	-4	OCT 22	27869	27712	157.5
NOV 22	4337	4342	-5	NOV 22	32229	32095	134
DEC 22	3575	3571	4	DEC 22	27442	27393	48.5
JAN 23	4274	4273	1	JAN 23	30960	30926	34.25
FEB 23	3777	3777	0	FEB 23	14692	14679	12.25
MAR 23	944	939	5	MAR 23	13719	13707	12.25
APR 23	2310	2305	5	APR 23	13784	13779	4.5
MAY 23	1548	1537	11	MAY 23	12702	12746	-44.5



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	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	\$3.255	\$3.379	\$3.332	\$3.209	\$2.951	\$2.907	\$2.948	\$2.984	\$2.992	\$2.986	\$3.019	\$3.099
Last Week	\$3.007	\$3.272	\$3.397	\$3.356	\$3.239	\$2.956	\$2.916	\$2.945	\$2.984	\$2.994	\$2.982	\$3.019
vs. Last Week	\$0.248	\$0.107	-\$0.065	-\$0.147	-\$0.288	-\$0.049	\$0.032	\$0.039	\$0.008	-\$0.008	\$0.037	\$0.080
4 Weeks Ago	\$2.527	\$3.062	\$3.204	\$3.163	\$3.049	\$2.761	\$2.719	\$2.748	\$2.785	\$2.793	\$2.780	\$2.809
vs. 4 Weeks Ago	\$0.728	\$0.317	\$0.128	\$0.046	-\$0.098	\$0.146	\$0.229	\$0.236	\$0.207	\$0.193	\$0.239	\$0.290
Last Year	\$2.633	\$2.732	\$2.697	\$2.568	\$2.340	\$2.322	\$2.360	\$2.404	\$2.413	\$2.398	\$2.426	\$2.491
vs. Last Year	\$0.622	\$0.647	\$0.635	\$0.641	\$0.611	\$0.585	\$0.588	\$0.580	\$0.579	\$0.588	\$0.593	\$0.608

	Units	Cash Settled	Prompt Settle	Cash to Prompt
AGT Citygate	\$/MMBtu	6.50	3.62	-2.88
TETCO M3	\$/MMBtu	2.09	2.40	0.31
FGT Zone 3	\$/MMBtu	2.38	3.01	0.63
Zone 6 NY	\$/MMBtu	2.38	2.57	0.19
Chicago Citygate	\$/MMBtu	2.99	2.95	-0.04
Michcon	\$/MMBtu	2.73	2.84	0.11
Columbia TCO Pool	\$/MMBtu	2.36	2.49	0.13
Ventura	\$/MMBtu	2.97	2.98	0.01
Rockies/Opal	\$/MMBtu	3.62	2.82	-0.80
El Paso Permian Basin	\$/MMBtu	2.87	1.73	-1.14
Socal Citygate	\$/MMBtu	4.39	3.49	-0.90
Malin	\$/MMBtu	3.33	3.40	0.07
Houston Ship Channel	\$/MMBtu	3.02	2.97	-0.05
Henry Hub Cash	\$/MMBtu	3.03	2.85	-0.18
AECO Cash	C\$/GJ	2.49	2.42	-0.07
Station2 Cash	C\$/GJ	2.49	4.94	2.45
Dawn Cash	C\$/GJ	2.89	2.91	0.02

Source: CME, Bloomberg

	Units	Current Price	vs. Last Week	vs. 4 Weeks		vs. Last Year
				Ago		
NatGas Jan/Apr	\$/MMBtu	-0.43	▲ 0.013	▲ 0.015	▲ 0.028	
NatGas Mar/Apr	\$/MMBtu	-0.258	▲ 0.025	▼ -0.546	▼ -0.541	
NatGas Oct/Nov	\$/MMBtu	0.90	▼ -0.011	▲ 0.469	▲ 0.830	
NatGas Oct/Jan	\$/MMBtu	1.28	▼ -0.018	▲ 0.175	▲ 0.929	
WTI Crude	\$/Bbl	35.87	▼ -4.770	▼ -2.850	▼ -18.310	
Brent Crude	\$/Bbl	37.58	▼ -4.880	▼ -3.350	▼ -22.650	
Fuel Oil, NY Harbour 1%	\$/Bbl	98.03	▲ 0.000	▲ 0.000	▲ 0.000	
Heating Oil	cents/Gallon	108.54	▼ -7.530	▼ -3.960	▼ -79.260	
Propane, Mt. Bel	cents/Gallon	0.52	▼ -0.003	▲ 0.031	▲ 0.055	
Ethane, Mt. Bel	cents/Gallon	0.22	▼ -0.001	▲ 0.027	▲ 0.027	
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▲ 0.050	
Coal, ILB	\$/MTon	31.05	▲ 0.000	▲ 0.000	▼ -4.500	