

	Current	Δ from YD	Δ from 7D Avg
Nat Gas Prompt	\$ 2.93	▼ \$ (0.08)	▲ \$ 0.06

	Current	Δ from YD	Δ from 7D Avg
WTI Prompt	\$ 40.82	▲ \$ 0.18	▲ \$ 0.0

	Current	Δ from YD	Δ from 7D Avg
Brent Prompt	\$ 42.68	▲ \$ 0.22	▲ \$ -

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](#)

00z GWDD Change

Cooler Change

Warmer Change

ECMWF Ensemble 00z	1-5 Day	6-10 Day	11-15 Day	Total
12 Hr Chg	-1.3	-1.1	-7.3	-9.6
24 Hr Chg	-0.4	-4.5	-3.1	-7.9

GFS Ensemble 00z	1-5 Day	6-10 Day	11-15 Day	Total
12 Hr Chg	0.6	-0.1	-6.2	-5.7
24 Hr Chg	1.9	0.3	-5.8	-3.6

	Current	Δ from YD	Δ from 7D Avg
US Dry Production	88.6	▼ -1.04	▼ -0.48

	Current	Δ from YD	Δ from 7D Avg
US Power Burns	30.2	▲ 1.74	▲ 2.22

	Current	Δ from YD	Δ from 7D Avg
US ResComm	13.9	▲ 1.08	▼ -3.10

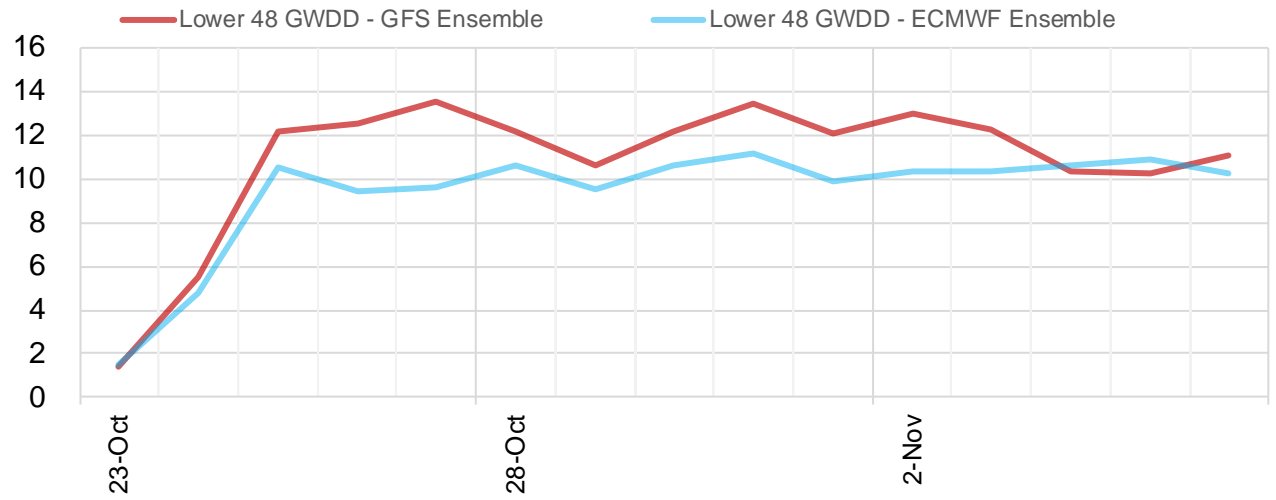
	Current	Δ from YD	Δ from 7D Avg
Canadian Imports	4.3	▲ 0.21	▲ 0.72

	Current	Δ from YD	Δ from 7D Avg
Net LNG Exports	8.1	▼ -0.20	▲ 0.09

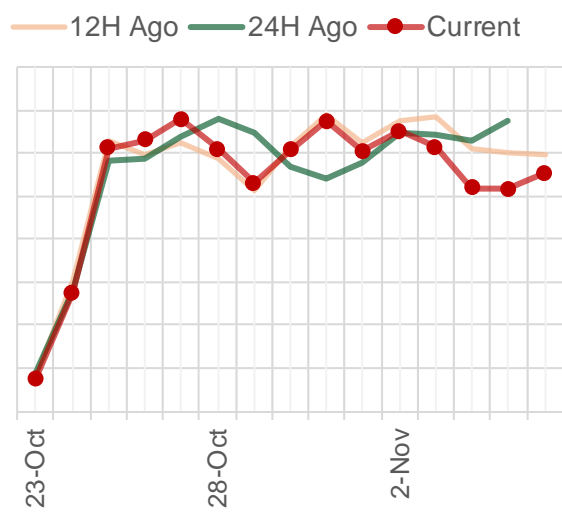
	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.5	▼ -0.06	▲ 0.22

Short-term Weather Model Outlooks (00z)

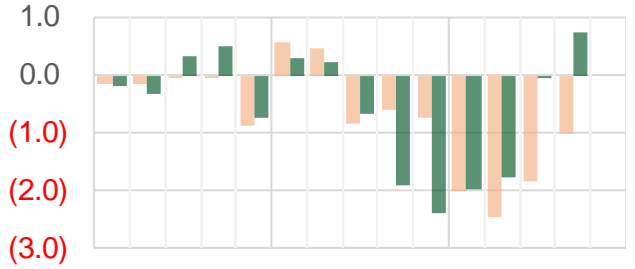
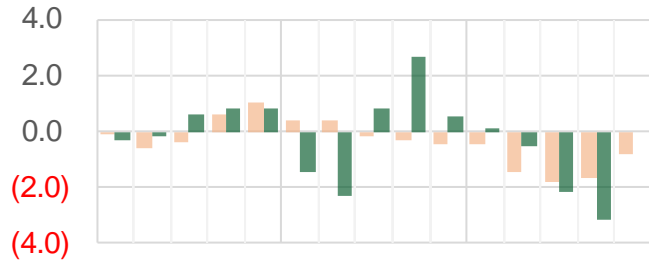
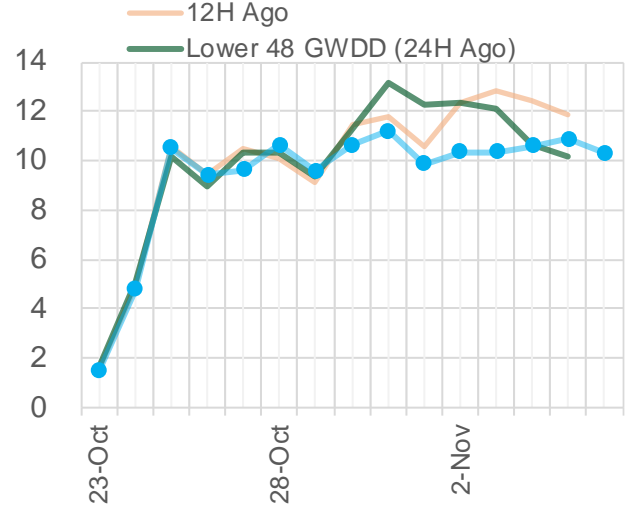
Lower 48 TDD Forecast



Lower 48 GWDD - GFS Ensemble



Lower 48 GWDD - ECMWF Ensemble



Source: WSI, 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.

Lower 48 Component Models

Daily Balances

	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	DoD	vs. 7D
Lower 48 Dry Production	89.2	89.0	89.0	88.7	89.0	89.6	88.6	▼ -1.0	▼ -0.5
Canadian Imports	3.3	3.2	3.6	3.4	4.2	4.1	4.3	▲ 0.2	▲ 0.7
L48 Power	25.1	26.2	29.8	29.5	28.8	28.4	30.2	▲ 1.7	▲ 2.2
L48 Residential & Commercial	18.9	18.6	19.0	16.3	13.5	12.8	13.9	▲ 1.1	▼ -2.6
L48 Industrial	24.0	24.1	24.0	23.4	22.6	21.8	21.0	▼ -0.8	▼ -2.3
L48 Lease and Plant Fuel	4.9	4.9	4.9	4.9	4.9	4.9	4.9	▼ -0.1	▼ 0.0
L48 Pipeline Distribution	2.2	2.2	2.4	2.2	2.1	2.0	2.2	▲ 0.1	▼ 0.0
L48 Regional Gas Consumption	75.1	75.9	80.1	76.4	71.8	70.0	72.1	▲ 2.1	▼ -2.8
Net LNG Delivered	7.86	7.50	7.29	8.33	8.88	8.31	8.11	▼ -0.2	▲ 0.1
Total Mexican Exports	6.3	5.9	6.3	6.3	6.5	6.6	6.5	▼ -0.1	▲ 0.2
Implied Daily Storage Activity	3.2	2.9	-1.1	1.2	6.0	8.8	6.2		
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	87.2	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	30.8	30.1	28.0	▼ -2.1	▼ -2.6
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	21.7	22.3	23.4	▲ 1.1	▲ 1.6
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	2.0	2.2	▲ 0.2	▲ 0.1
L48 Regional Gas Consumption	69.7	68.6	69.2	73.0	70.6	75.4	▲ 4.8	▲ 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	9.7	8.9	5.1	6.1	2.9	-3.2	
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	-0.9			

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	87.4	▼ -0.2	▼ -7.5
Canadian Imports	4.7	4.6	4.0	4.4	4.9	3.8	4.0	▲ 0.2	▼ -0.6
L48 Power	28.8	30.8	35.0	43.8	40.7	33.2	29.6	▼ -3.6	▼ -1.1
L48 Residential & Commercial	16.1	15.2	8.8	8.0	7.7	8.7	14.0	▲ 5.3	▼ -1.3
L48 Industrial	22.6	24.0	19.2	19.3	20.6	21.0	22.4	▲ 1.4	▼ -1.6
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	2.1	▲ 0.1	▼ -0.1
L48 Regional Gas Consumption	74.5	77.4	70.1	78.4	76.1	69.8	72.9	▲ 3.1	▼ -4.5
Net LNG Exports	3.3	6.7	4.0	3.3	4.0	5.9	7.5	▲ 1.5	▲ 0.8
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	4.8		
EIA Reported Daily Storage Activity									
Daily Model Error									

Source: Bloomberg, analytix.ai

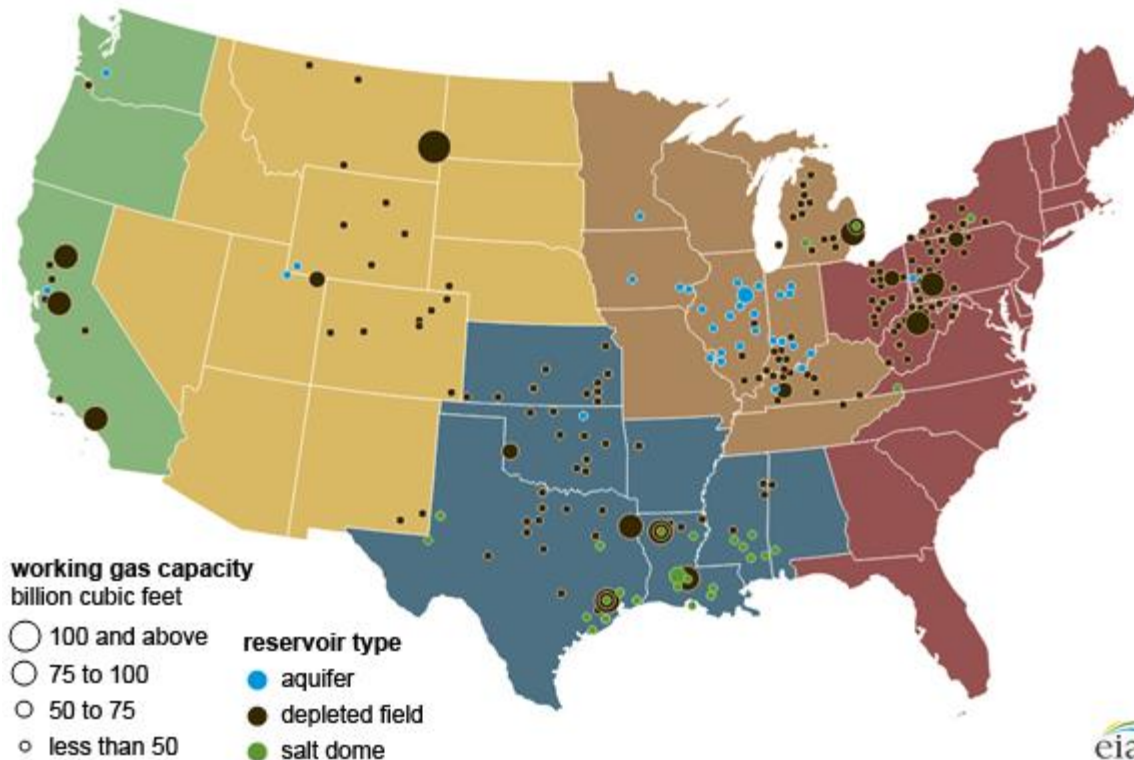
Regional S/D Models Storage Projection

Week Ending 23-Oct

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	2.6	1.4	4.1	29
East	0.6	1.7	2.3	16
Midwest	0.1	0.8	0.9	6
Mountain	3.3	-3.2	0.1	1
South Central	-1.4	2.1	0.8	5
Pacific	-0.1	0.0	-0.1	-1

*Adjustment Factor is calculated based on historical regional deltas

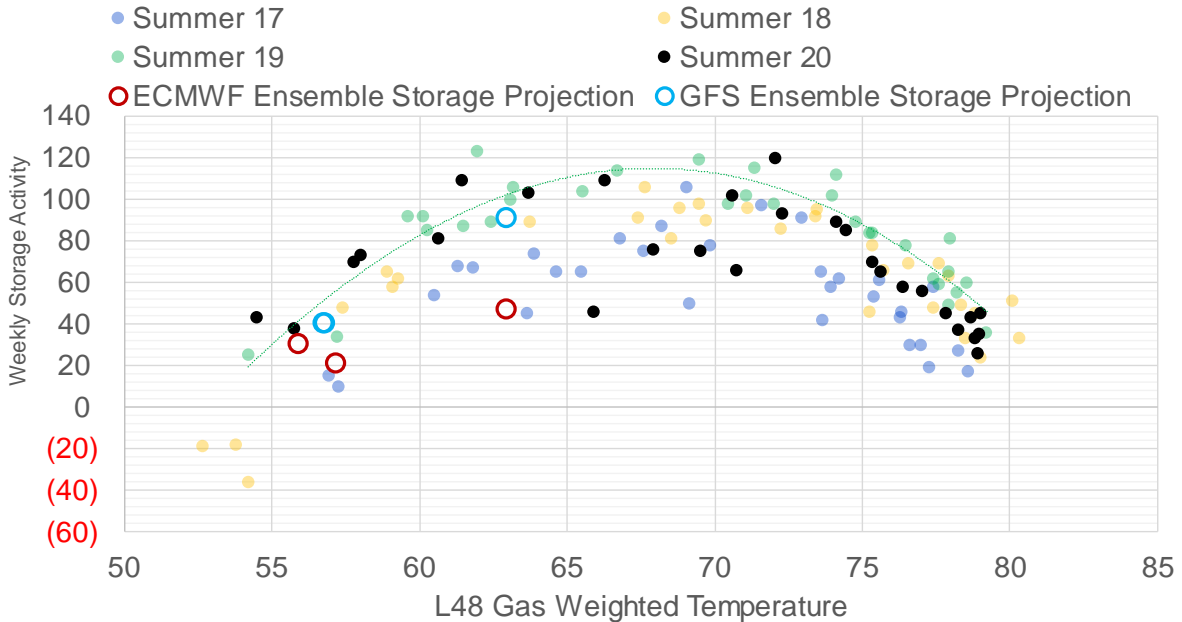
U.S. underground natural gas storage facilities by type (July 2015)



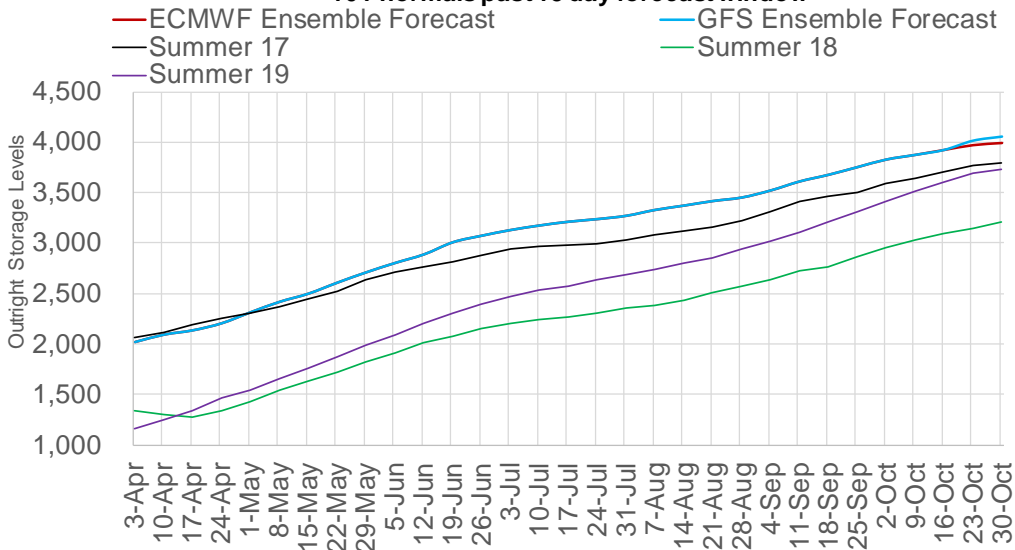
Weather Model Storage Projection

Next report and beyond	
Week Ending	Week Storage Projection
30-Oct	31
06-Nov	36
13-Nov	#N/A

Weather Storage Model - Next 4 Week Forecast



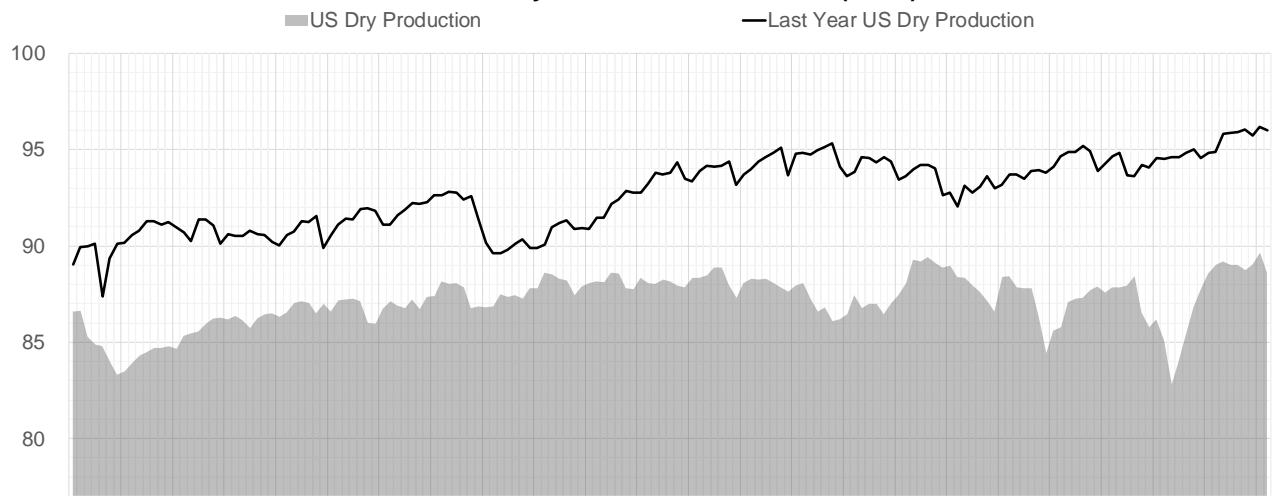
Weather Based End of Winter Projection (Bcf) 10Y normals past 15 day forecast window



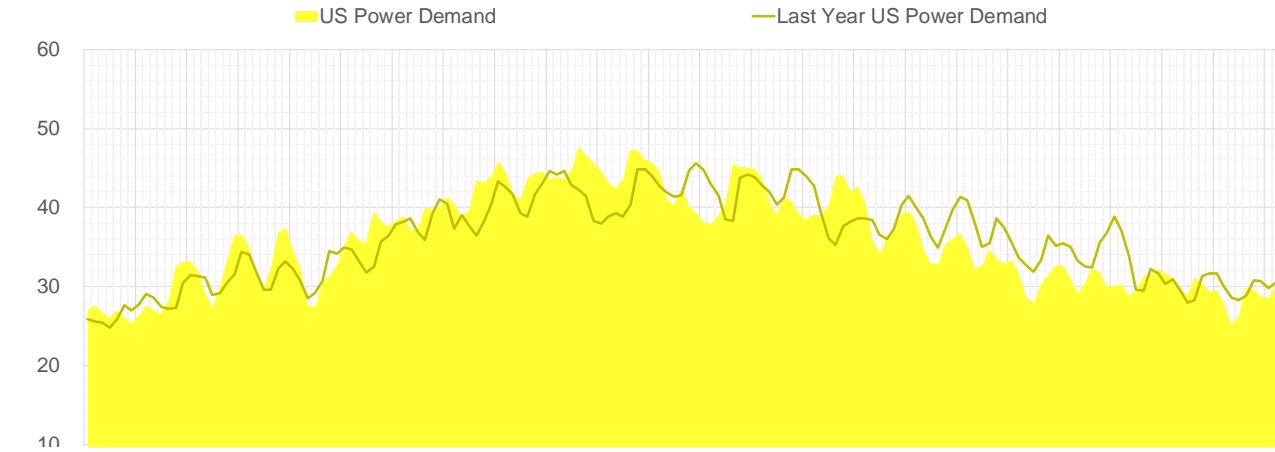
The risk of trading futures and options and other derivatives involves a substantial risk of loss and is not suitable for all persons. Each person must consider whether a particular trade, combination of trades, or strategy is suitable for that person's financial means and objectives. Past results are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

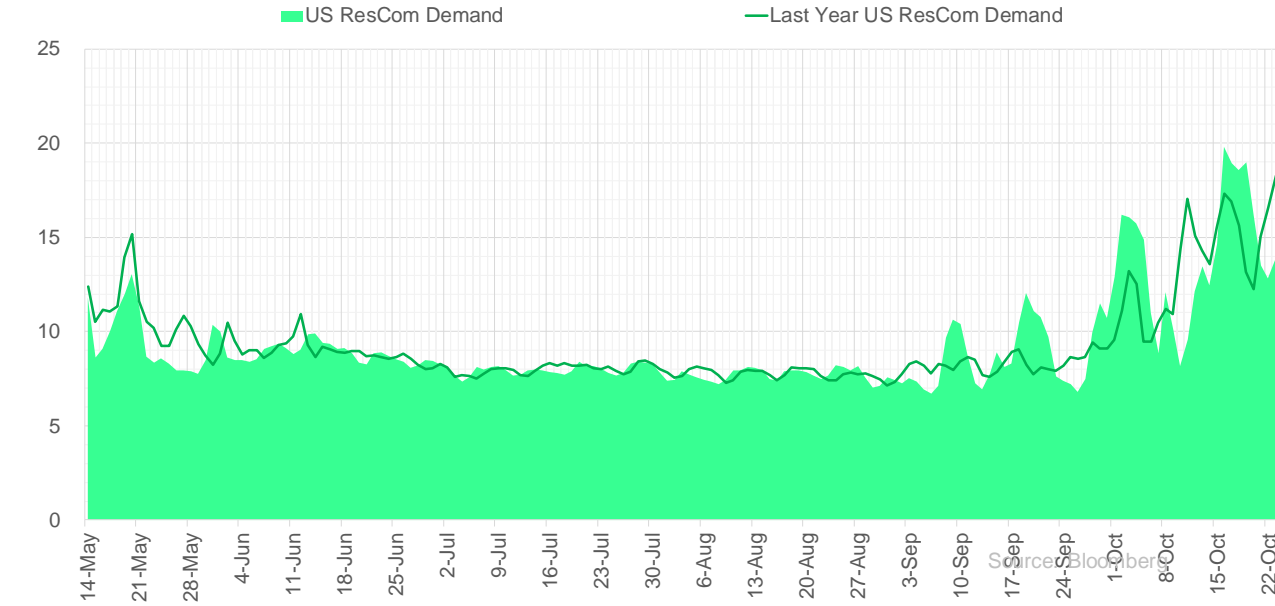
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)

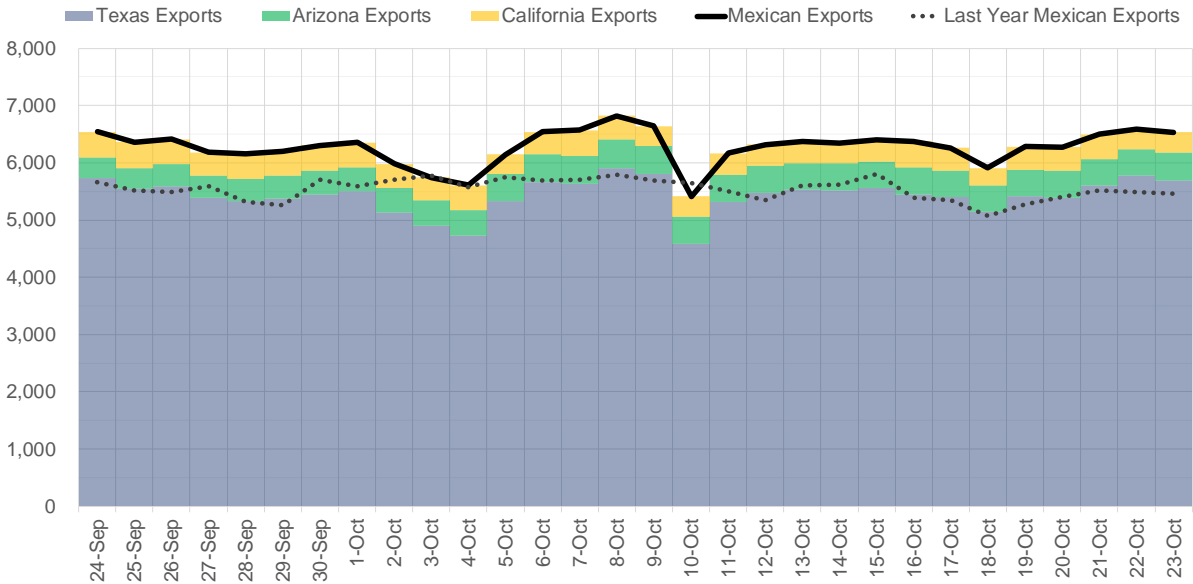


US Daily ResCom Consumption (Bcf/d)

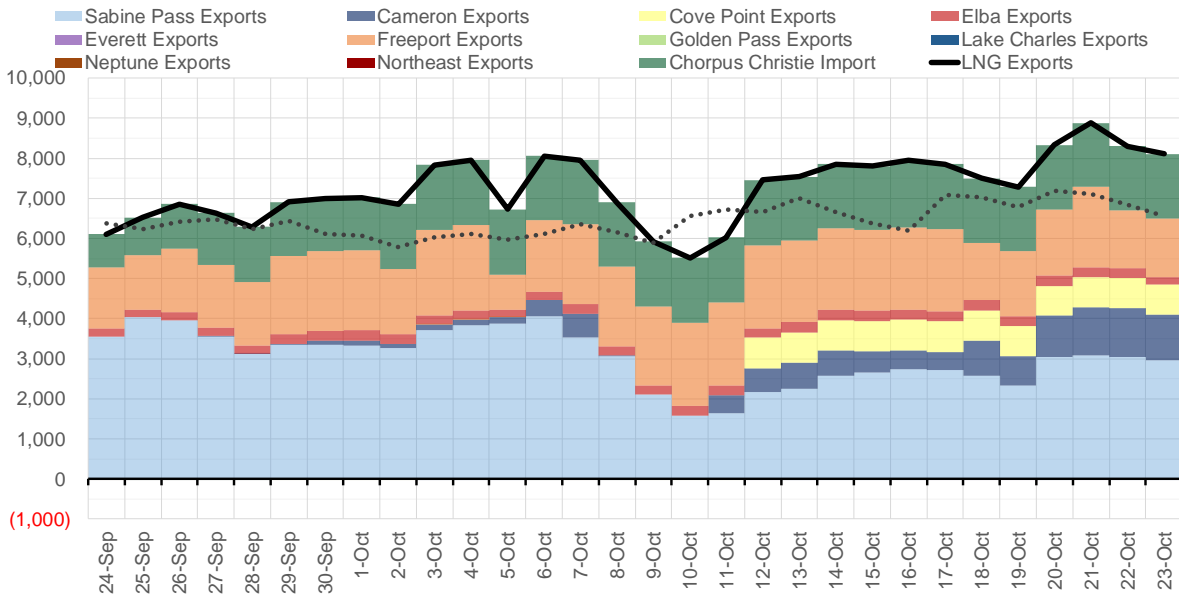


Source: Bloomberg

Mexican Exports - Last 30 days (MMcf/d)



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



Source: Bloomberg

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
11	2020	P	2.75	9719	11	2020	P	2.00	56098
11	2020	C	3.25	9254	11	2020	C	3.50	38643
11	2020	C	3.00	5182	3	2021	P	2.00	36314
3	2021	C	4.00	4813	11	2020	C	3.25	34264
11	2020	P	2.80	4718	12	2020	P	2.00	32704
12	2020	C	3.60	4071	3	2021	C	5.00	31674
12	2020	C	4.25	3922	3	2021	C	6.00	30051
11	2020	C	3.50	3915	1	2021	C	4.50	29582
11	2020	C	3.40	3514	3	2021	C	3.25	28033
11	2020	P	3.00	3212	12	2020	P	2.50	27473
3	2021	C	3.25	3006	12	2020	C	4.00	27128
12	2020	C	4.00	2384	4	2021	C	5.00	26870
11	2020	P	2.50	2233	3	2021	C	4.00	26429
11	2020	C	3.15	2131	10	2021	C	4.00	26275
12	2020	C	3.80	2014	10	2021	C	3.25	25790
12	2020	C	3.40	2007	3	2021	C	7.00	25380
11	2020	P	2.85	1606	1	2021	C	3.50	25311
4	2021	C	4.00	1565	11	2020	C	4.00	24005
11	2020	C	3.75	1560	11	2020	P	2.25	23577
11	2020	P	2.90	1520	11	2020	C	5.00	22403
12	2020	C	3.75	1468	11	2020	C	3.00	21749
11	2020	C	3.20	1461	1	2021	C	6.00	21314
11	2020	C	3.10	1372	3	2021	C	3.00	21049
1	2021	C	4.00	1340	12	2020	C	4.50	20011
1	2021	P	2.60	1298	8	2021	C	4.00	19924
11	2020	P	2.70	1292	4	2021	C	4.00	19746
11	2020	P	2.95	1248	11	2020	P	2.50	19707
3	2021	C	6.00	1225	3	2021	C	3.50	19541
2	2021	P	2.60	1195	11	2020	P	1.75	19541
3	2021	P	2.60	1195	2	2021	C	5.00	19428
4	2021	P	2.60	1195	11	2020	C	2.75	19317
5	2021	P	2.60	1195	2	2021	P	2.25	18787
6	2021	P	2.60	1195	12	2020	C	3.75	18551
7	2021	P	2.60	1195	1	2021	P	2.50	18214
8	2021	P	2.60	1195	12	2020	C	3.50	18200
9	2021	P	2.60	1195	1	2021	C	5.00	18200
10	2021	P	2.60	1195	1	2021	P	2.25	18135
11	2021	P	2.60	1195	8	2021	P	2.25	17442
12	2021	P	2.60	1195	1	2021	C	3.00	17187
11	2020	C	3.35	1180	1	2021	C	3.75	17117
11	2020	C	3.05	1177	2	2021	C	3.50	16999
12	2020	P	3.00	1172	2	2021	P	2.50	16455
6	2021	C	4.00	1165	5	2021	C	4.00	16430
1	2021	P	2.50	1137	3	2021	P	2.50	15766
5	2021	P	2.25	1100	11	2020	P	2.65	15580
11	2020	P	2.65	1085	2	2021	C	4.00	15171
5	2021	C	4.00	1065	10	2021	C	5.00	15065
4	2021	C	6.00	1000	12	2020	C	5.00	14527
11	2021	C	4.00	990	1	2021	C	7.00	14511
					12	2020	P	1.5	14450

Source: CME, ICE

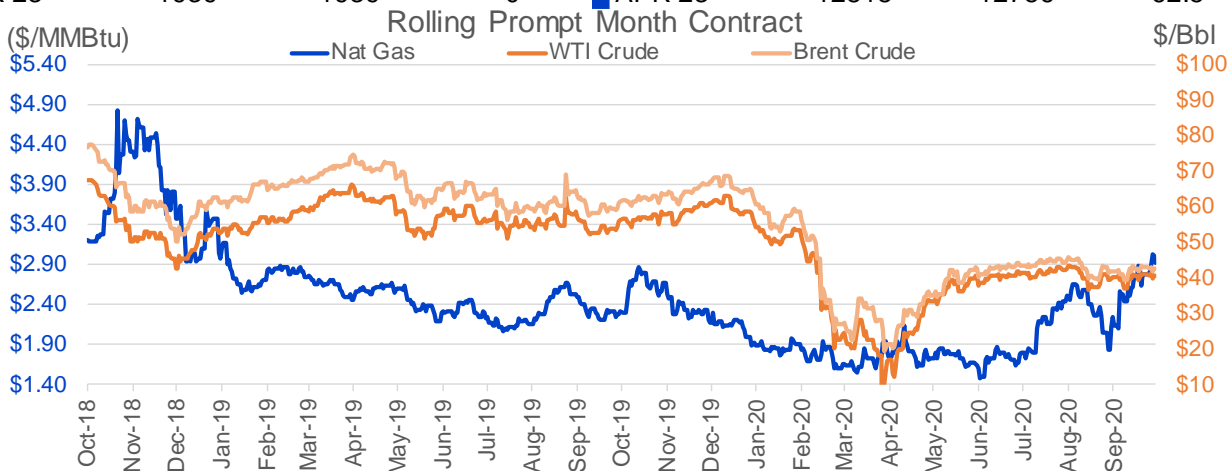
Nat Gas Futures Open Interest

CME and ICE Combined

CME Henry Hub Futures (10,000 MMBtu)

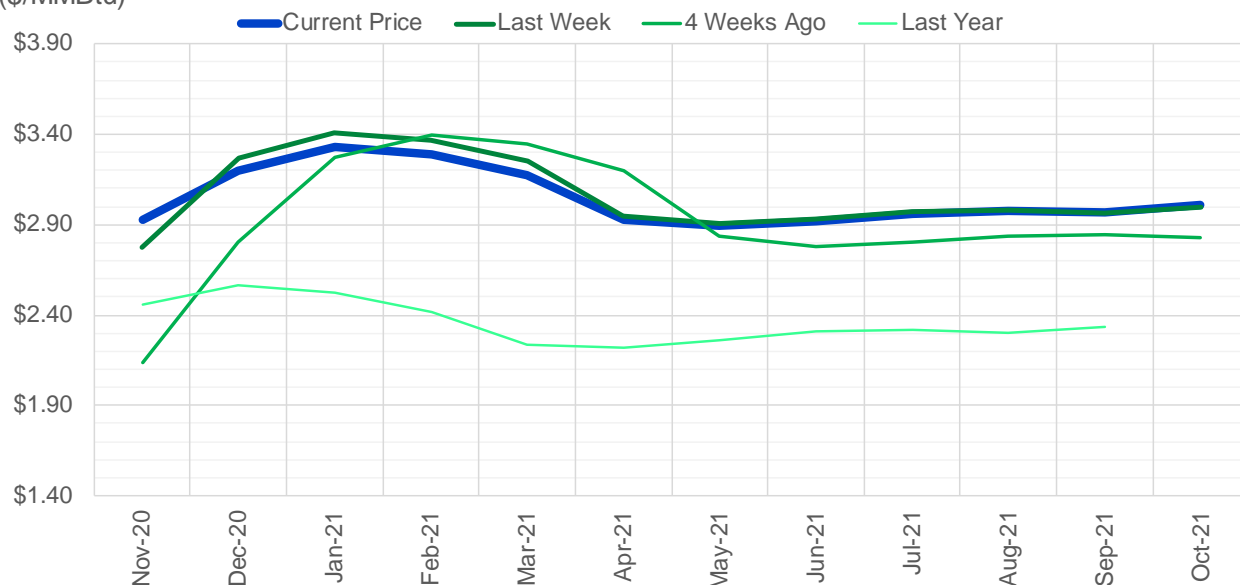
ICE Henry Hub Futures Contract Equivalent (10,000 MM

	Current	Prior	Daily Change	FOR JUNE 26	Current	Prior	Daily Change
NOV 20	30394	44239	-13845	NOV 20	64774	66019	-1245
DEC 20	176348	173748	2600	DEC 20	78866	77323	1542.75
JAN 21	205724	203030	2694	JAN 21	89974	89945	29
FEB 21	83534	82868	666	FEB 21	64612	64670	-58.25
MAR 21	137822	138392	-570	MAR 21	84080	83634	446.25
APR 21	78447	80158	-1711	APR 21	67146	67312	-166.25
MAY 21	49236	48286	950	MAY 21	63635	62719	915.5
JUN 21	33851	33725	126	JUN 21	56795	56598	197
JUL 21	26591	27219	-628	JUL 21	58784	58551	233.25
AUG 21	27011	27003	8	AUG 21	61440	61105	335.75
SEP 21	39116	39281	-165	SEP 21	57067	56760	307
OCT 21	91783	94798	-3015	OCT 21	72354	73057	-703.5
NOV 21	33866	34284	-418	NOV 21	51263	51240	22.25
DEC 21	27458	27990	-532	DEC 21	47134	47109	25.25
JAN 22	31716	30853	863	JAN 22	44550	44592	-41.25
FEB 22	19779	18937	842	FEB 22	36564	36254	309.75
MAR 22	21967	21880	87	MAR 22	39421	39301	120.75
APR 22	21606	21607	-1	APR 22	37509	37493	16.25
MAY 22	9525	9640	-115	MAY 22	28876	28842	33.5
JUN 22	4970	4958	12	JUN 22	27592	27552	40
JUL 22	4252	4215	37	JUL 22	29178	29069	109.5
AUG 22	3124	3044	80	AUG 22	27712	27641	70.75
SEP 22	3176	3149	27	SEP 22	27294	27269	25
OCT 22	4291	4316	-25	OCT 22	30836	30828	7.75
NOV 22	3584	3569	15	NOV 22	26876	26822	54
DEC 22	3808	3782	26	DEC 22	29378	29329	49
JAN 23	3411	3411	0	JAN 23	14461	14420	41.5
FEB 23	919	919	0	FEB 23	13516	13479	37.5
MAR 23	1270	1270	0	MAR 23	13635	13593	41.5
APR 23	1939	1939	0	APR 23	12818	12756	62.5



(\$/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	\$2.927	\$3.200	\$3.329	\$3.290	\$3.176	\$2.927	\$2.896	\$2.921	\$2.964	\$2.976	\$2.970	\$3.006
Last Week	\$2.773	\$3.271	\$3.405	\$3.364	\$3.249	\$2.948	\$2.906	\$2.933	\$2.970	\$2.979	\$2.966	\$3.001
vs. Last Week	\$0.154	-\$0.071	-\$0.076	-\$0.074	-\$0.073	-\$0.021	-\$0.010	-\$0.012	-\$0.006	-\$0.003	\$0.004	\$0.005
4 Weeks Ago	\$2.139	\$2.807	\$3.277	\$3.398	\$3.348	\$3.200	\$2.834	\$2.777	\$2.801	\$2.834	\$2.842	\$2.829
vs. 4 Weeks Ago	\$0.788	\$0.393	\$0.052	-\$0.108	-\$0.172	-\$0.273	\$0.062	\$0.144	\$0.163	\$0.142	\$0.128	\$0.177
Last Year	\$2.300	\$2.459	\$2.561	\$2.525	\$2.413	\$2.234	\$2.220	\$2.260	\$2.307	\$2.319	\$2.305	\$2.335
vs. Last Year	\$0.627	\$0.741	\$0.768	\$0.765	\$0.763	\$0.693	\$0.676	\$0.661	\$0.657	\$0.657	\$0.665	\$0.671

	Units	Cash Settled	Prompt Settle	Cash to Prompt
AGT Citygate	\$/MMBtu	1.60	3.51	1.91
TETCO M3	\$/MMBtu	0.75	2.35	1.60
FGT Zone 3	\$/MMBtu	1.48	2.72	1.24
Zone 6 NY	\$/MMBtu	1.48	2.47	0.99
Chicago Citygate	\$/MMBtu	2.93	2.61	-0.32
Michcon	\$/MMBtu	2.71	2.53	-0.18
Columbia TCO Pool	\$/MMBtu	0.80	2.29	1.49
Ventura	\$/MMBtu	3.00	2.61	-0.39
Rockies/Opal	\$/MMBtu	3.01	2.43	-0.58
El Paso Permian Basin	\$/MMBtu	0.06	1.20	1.14
Socal Citygate	\$/MMBtu	4.05	3.17	-0.88
Malin	\$/MMBtu	3.00	3.08	0.08
Houston Ship Channel	\$/MMBtu	2.95	2.67	-0.28
Henry Hub Cash	\$/MMBtu	2.57	2.51	-0.06
AECO Cash	C\$/GJ	2.56	2.20	-0.36
Station2 Cash	C\$/GJ	2.51	4.74	2.23
Dawn Cash	C\$/GJ	2.80	2.58	-0.22

Source: CME, Bloomberg

	Units	Current Price	vs. Last Week	vs. 4 Weeks	
				Ago	vs. Last Year
NatGas Jan/Apr	\$/MMBtu	-0.40	▲ 0.055	▲ 0.162	▲ 0.023
NatGas Mar/Apr	\$/MMBtu	-0.249	▲ 0.052	▼ -0.615	▼ -0.518
NatGas Oct/Nov	\$/MMBtu	0.83	▲ 0.154	▲ 0.158	▲ 0.753
NatGas Oct/Jan	\$/MMBtu	1.23	▼ -0.076	▼ -0.031	▲ 0.865
WTI Crude	\$/Bbl	40.82	▼ -0.060	▲ 0.570	▼ -15.840
Brent Crude	\$/Bbl	42.68	▼ -0.250	▲ 0.760	▼ -19.340
Fuel Oil, NY Harbour 1%	\$/Bbl	98.03	▲ 0.000	▲ 0.000	▲ 0.000
Heating Oil	cents/Gallon	116.66	▼ -1.250	▲ 4.040	▼ -81.300
Propane, Mt. Bel	cents/Gallon	0.52	▲ 0.001	▲ 0.029	▲ 0.061
Ethane, Mt. Bel	cents/Gallon	0.22	▲ 0.003	▲ 0.018	▲ 0.031
Coal, PRB	\$/MTon	12.30	▲ 0.000	▲ 0.000	▲ 0.100
Coal, ILB	\$/MTon	31.05	▲ 0.000	▲ 0.000	▼ -4.500