

# **Market Report**

# 16 September 2021



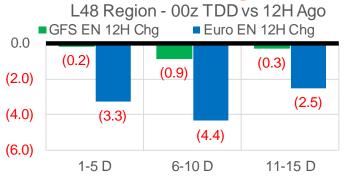
	С	urrent	Δ from YD	Δ fron Av	
WTI Prompt	\$	72.38	<b>\$</b> (0.23)	<b>\$</b>	2.3

	_	urrant	Δ from YD	∆ fron	1 7D
	ם וווטווו דם	Avg			
Brent Prompt	\$	75.27	<b>\$</b> (0.19)	<b>\$</b>	2.0

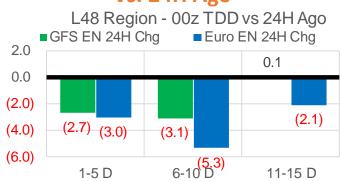
### Page Menu

**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** 

# Vs. 12H Ago



# Vs. 24H Ago



	Current	Δ from YD	Δ from 7D Avg
US Dry Production	90.7	<b>-</b> 0.57	<b>▼</b> -1.11

	Current	Δ from YD	Δ from 7D Avg		Current	Δ from YD	Δ from 7D Avg
JS Dry Production	90.7	<b>▼</b> -0.57	▼ -1.11	US Power Burns	34.6	<b>▼</b> -1.63	<b>▼</b> -0.31

	Current	Δ from YD	Δ from 7D Avg
US ResComm	7.3	▲ 0.04	<b>0.13</b>

	Current	Δ from YD	Avg
Canadian Imports	4.6	▼ -0.29	<b>▼</b> -0.54
			Λ from 7D

	Current	Δ from YD	Δ from 7D Avg		
Net LNG Exports	9.1	<b>0.19</b>	<b>▼</b> -1.39		

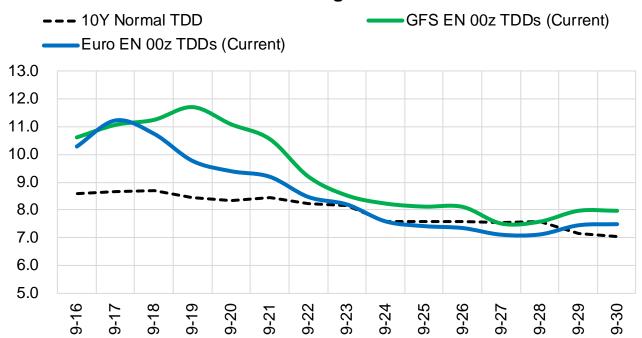
	Current	Δ from YD	Δ from 7D Avg
Mexican Exports	6.6	<b>▼</b> -0.32	<b>-</b> 0.06

Δ from 7D

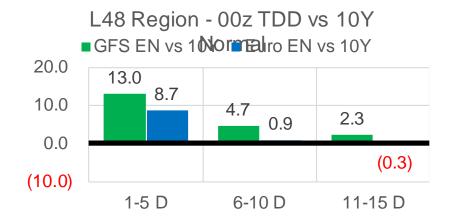


### Short-term Weather Model Outlooks (00z)

# L48 Region



### Vs. 10Y Normal



Source: WSI, Bloomberg



# **Market Report**

# Lower 48 Component Models

### **Daily Balances**

	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	15-Sep	16-Sep	DoD	vs. 7D
Lower 48 Dry Production	91.8	92.4	92.1	92.5	91.5	91.3	90.7	▼-0.6	▼-1.2
Canadian Imports	5.1	5.1	5.3	5.4	5.3	4.9	4.6	▼-0.3	▼ -0.5
L48 Power	32.9	32.2	34.5	36.7	37.2	36.2	34.6	<b>▼</b> -1.6	▼-0.4
L48 Residential & Commercial	7.2	6.7	6.9	7.4	7.5	7.3	7.3	<b>0.0</b>	<b>0.2</b>
L48 Industrial	20.4	20.5	20.8	21.1	21.2	21.2	21.2	▼ 0.0	<b>a</b> 0.3
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.0	5.0	5.0	▼ 0.0	▼ -0.1
L48 Pipeline Distribution	2.0	2.0	2.1	2.2	2.3	2.2	2.1	▼ -0.1	▼ 0.0
L48 Regional Gas Consumption	67.6	66.6	69.4	72.5	73.2	72.0	70.2	<b>▼-1.7</b>	<b>0.0</b>
Net LNG Delivered	11.07	10.88	11.31	11.19	9.33	8.90	9.09	<b>0.2</b>	▼-1.4
Total Mexican Exports	6.7	6.4	6.3	6.6	7.0	6.9	6.6	▼-0.3	▼ -0.1
Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error	11.5	13.5	10.4	7.5	7.3	8.4	9.5		

### **EIA Storage Week Balances**

	6-Aug	13-Aug	20-Aug	27-Aug	3-Sep	10-Sep	WoW	vs. 4W
Lower 48 Dry Production	91.9	92.4	92.4	93.0	90.9	91.4	<b>0.5</b>	▼-0.8
Canadian Imports	5.0	5.2	5.0	5.3	5.0	4.8	▼-0.2	▼-0.3
L48 Power	38.3	41.1	39.7	41.9	38.0	33.6	<b>▼</b> -4.3	▼-6.5
L48 Residential & Commercial	8.0	7.8	7.6	7.8	7.5	7.0	<b>▼</b> -0.4	▼-0.6
L48 Industrial	20.2	19.2	20.9	21.0	18.6	19.6	<b>1.0</b>	<b>▼</b> -0.3
L48 Lease and Plant Fuel	5.1	5.1	5.1	5.1	5.0	5.0	<b>0.0</b>	<b>▼</b> -0.1
L48 Pipeline Distribution	2.2	2.4	2.3	2.4	2.2	2.1	▼ -0.2	<b>▼</b> -0.3
L48 Regional Gas Consumption	73.8	75.6	75.6	78.2	71.3	67.4	▼ -3.9	▼-7.8
Net LNG Exports	10.6	9.9	10.9	10.6	10.5	11.0	<b>0.5</b>	<b>0.5</b>
Total Mexican Exports	6.9	6.8	6.8	6.8	7.0	6.7	▼ -0.3	▼-0.2
Implied Daily Storage Activity	5.7	5.2	4.2	2.8	7.2	11.1	4.0	
EIA Reported Daily Storage Activity	7.0	6.6	4.1	2.9	7.4			
Daily Model Error	-1.3	-1.4	0.1	-0.1	-0.3			

Monthly Balances									
•	2Yr Ago	LY					MTD		
	Sep-19	Sep-20	May-21	Jun-21	Jul-21	Aug-21	Sep-21	MoM	vs. LY
Lower 48 Dry Production	94.4	89.1	93.1	93.4	92.4	92.2	91.5	▼ -0.7	<b>2.3</b>
Canadian Imports	4.7	3.8	4.5	4.8	5.2	5.1	4.9	▼ -0.2	<b>1.1</b>
L48 Power	36.3	34.4	26.8	35.9	39.6	40.2	34.2	▼-6.0	▼-0.2
L48 Residential & Commercial	8.2	8.8	12.8	8.9	8.6	7.7	7.2	▼ -0.5	<b>▼</b> -1.6
L48 Industrial	22.6	20.4	20.8	20.6	19.6	20.1	20.0	▼ 0.0	<b>-</b> 0.4
L48 Lease and Plant Fuel	5.1	4.9	5.1	5.1	5.1	5.1	5.0	▼ -0.1	<b>0.1</b>
L48 Pipeline Distribution	2.2	2.2	2.1	2.2	2.3	2.3	2.1	▼ -0.2	<b>▼</b> -0.1
L48 Regional Gas Consumption	74.5	70.6	67.6	72.7	75.1	75.4	68.5	▼ -6.8	▼ -2.1
Net LNG Exports	6.2	5.9	10.8	10.2	10.8	10.5	10.5	<b>▲ 0.1</b>	<b>4.6</b>
Total Mexican Exports	5.3	6.1	6.8	7.4	7.0	6.9	6.7	▼ -0.2	▲ 0.6
Implied Daily Storage Activity EIA Reported Daily Storage Activity	13.2	10.2	12.4	8.0	4.6	4.6	10.6		
Daily Model Error									



# **Daily** Average Generation Data

### **Nuclear Generation Daily Average - GWh (NRC)**

	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	DoD	vs. 7D
NRC Nuclear Daily Output	90.2	90.7	90.4	87.6	85.7	85.6	85.4	-0.1	-2.9
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0
NRC Nuclear Outage	14.7	14.2	14.4	17.3	19.2	19.3	19.4	0.1	2.9
NRC % Nuclear Cap Utilization	91.7	92.2	92.0	89.1	87.2	87.0	86.9	-0.1	-3.0

### Wind Generation Daily Average - MWh (EIA)

	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	DoD	vs. 7D
CALI Wind	1499	1489	1933	1582	1639	2254	1735	-519	3
TEXAS Wind	6438	6940	13204	12093	10433	10403	8035	-2368	-1884
US Wind	35146	25275	41396	51258	45315	44216	37061	-7156	-3374

### **Generation Daily Average - MWh (EIA)**

	8-Sep	9-Sep	10-Sep	11-Sep	12-Sep	13-Sep	14-Sep	DoD	vs. 7D
US Wind	35146	25275	41396	51258	45315	44216	37061	-7156	-3374
US Solar	13171	12582	14318	13934	14248	13996	14007	11	299
US Petroleum	2067	2705	2206	2189	2594	2632	2766	133	367
US Other	9209	8840	8435	8554	9059	9416	9453	38	534
US Coal	119992	119809	110956	102157	108214	118243	125221	6978	11993
US Nuke	92842	93366	93090	90305	88978	88224	88042	-181	-3092
US Hydro	27918	27999	25969	23680	22701	25737	24800	-938	-868
US Gas	202283	195446	171710	155940	170340	198449	196129	-2320	13768

See National Wind and Nuclear daily charts



# **Storage Week** Average Generation Data

Nuclear Generation Weekly Average - GWh (NRC)
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	6-Aug	13-Aug	20-Aug	27-Aug	3-Sep	10-Sep	WoW	WoW Bcf/d Impact
NRC Nuclear Daily Output	90.6	91.5	92.4	91.9	90.2	90.3	0.1	0.0
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	0.0	
NRC Nuclear Outage	14.3	13.3	12.5	12.9	14.7	14.6	-0.1	
NRC % Nuclear Cap Utilization	0.1	0.1	0.1	0.1	0.1	0.1	0.0	

### Wind Generation Weekly Average - MWh (EIA)

	6-Aug	13-Aug	20-Aug	27-Aug	3-Sep	10-Sep	WoW	WoW Bcf/d Impact
CALI Wind	2237	2507	3210	2052	2247	1236	-1010	0.2
TEXAS Wind	5180	16319	7171	12600	7534	7327	-206	0.0
US Wind	22379	49586	29141	41810	35348	30632	-4716	8.0
					-6462.0 -15%			

### **Generation Weekly Average - MWh (EIA)**

	6-Aug	13-Aug	20-Aug	27-Aug	3-Sep	10-Sep	WoW	WoW Bcf/d Impact
US Wind	22379	49586	29141	41810	35348	30632	-4716	8.0
US Solar	14131	14383	12828	14536	13423	14312	889	-0.2
US Petroleum	4074	4712	4466	5323	3135	2072	-1063	0.2
US Other	9070	10070	10104	10131	9766	8933	-833	0.1
US Coal	134740	140524	138052	136169	136309	116986	-19323	3.5
US Nuke	93328	94302	95157	94358	92365	93162	797	-0.1
US Hydro	27752	27035	28988	30621	28173	26944	-1229	0.2
US Gas	204634	208281	212106	215990	205486	181096	-24391	4.4

See National Wind and Nuclear daily charts



# **Monthly** Average Generation Data

Nuclear Generation Monthly Average - GWh (NRC)												
	2Yr Ago	LY			MTD							
	Same 30 days	Same 30 days	Jun-21	Jul-21	Aug-21	Sep-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY			
NRC Nuclear Daily Output	92.7	90.1	88.7	90.1	91.5	88.7	89.9	-2.8	-0.2			
NRC Nuclear Max Capacity	104.9	104.9	104.9	104.9	104.9	104.9	104.9	0.0	0.0			
NRC Nuclear Outage	12.1	14.7	16.2	14.8	13.4	16.2	14.9	2.8	0.2			
NRC % Nuclear Cap Utilization	94.3	91.7	90.2	91.6	93.0	90.2	91.5	-2.8	-0.2			

### Wind Generation Monthly Average - MWh (EIA)

	2Yr Ago	LY				MTD				
	Same 30 days	Same 30 days	Jun-21	Jul-21	Aug-21	Sep-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY	
CALI Wind	2311	1565	2881	2338	2442	1738	1920	-704	355	
TEXAS Wind	7491	7006	9509	7217	9901	9027	9564	-874	2558	
US Wind	29508	29641	36826	29106	35740	37234	37079	1494	7437	

### **Generation Monthly Average - MWh (EIA)**

Concration monthly /trolago	2Yr Ago	LY				MTD			
	Same 30 days	Same 30 days	Jun-21	Jul-21	Aug-21	Sep-21	Last 30 days	MoM (MTD vs LY)	Last 30 days YoY
US Wind	29508	29641	36826	29106	35740	37234	37079	▼ -155.4	<b>~</b> 7437
US Solar	8519	9576	14578	14195	13849	14126	14058	▼ -68.2	<b>4482</b>
US Petroleum	4458	3448	4155	4233	4484	2316	3396	<b>1080</b>	<b>▼</b> -52
US Other	8536	9104	8208	9327	9929	9022	9572	<b>550</b>	<b>468</b>
US Coal	117106	116955	122034	137228	137651	117739	127203	<b>9464</b>	<b>10248</b>
US Nuke	99411	92661	92180	92911	94062	91396	92491	<b>1095</b>	<b>▼</b> -171
US Hydro	29197	28383	32565	29941	28531	26147	27872	<b>1724</b>	<b>▼</b> -511
US Gas	204225	200175	189395	207814	210803	181997	198185	<b>13689</b>	<b>▼</b> -1991
US Total	502834	489917	500271	524889	534992	480236	509956	<b>27534</b>	<b>20039</b>



See National Wind and Nuclear daily charts



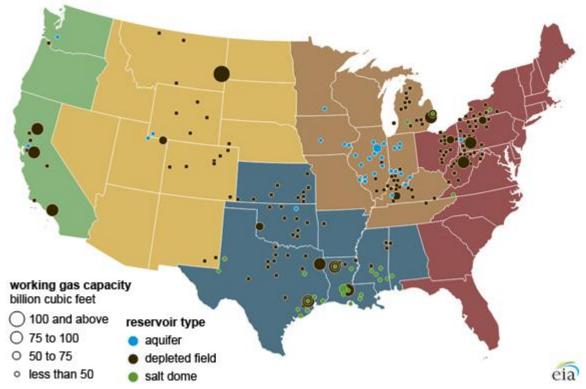
# Regional S/D Models Storage Projection

Week Ending 10-Sep

	Daily Raw Storage	Daily Adjustment Factor	Daily Average Storage Activity (Adjusted) *	Weekly Adjusted Storage Activity
L48	10.8	0.5	11.4	80
East	3.2	1.0	4.2	30
Midwest	5.6	-0.2	5.4	38
Mountain	4.0	-3.3	0.6	5
South Central	-2.3	3.4	1.2	8
Pacific	0.3	-0.4	-0.1	-1

<sup>\*</sup>Adjustment Factor is calcuated based on historical regional deltas

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



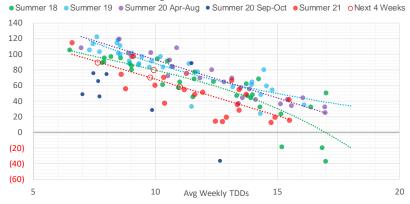


## Weather Model Storage Projection

# Next report and beyond

Week Ending	GWDDs	Week Storage Projection
10-Sep	9.9	80
17-Sep	11.0	58
24-Sep	9.8	70
01-Oct	7.7	89

### Weather Storage Model - Next 4 Week Forecast



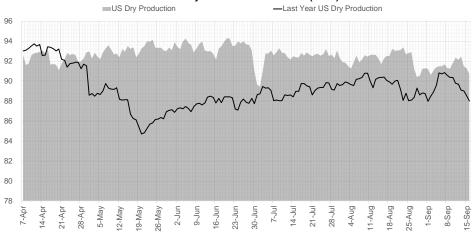
Go to larger image



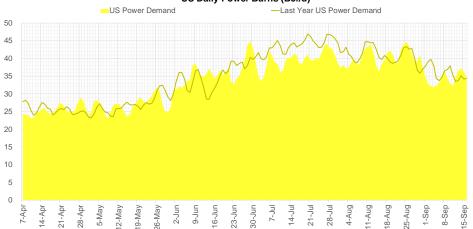


### Supply - Demand Trends

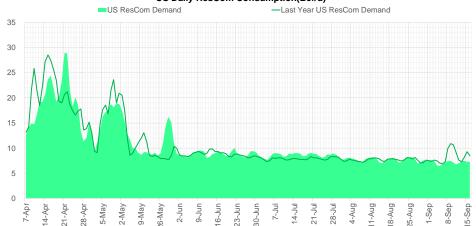
#### US Dry Natural Gas Production (Bcf/d)



#### US Daily Power Burns (Bcf/d)



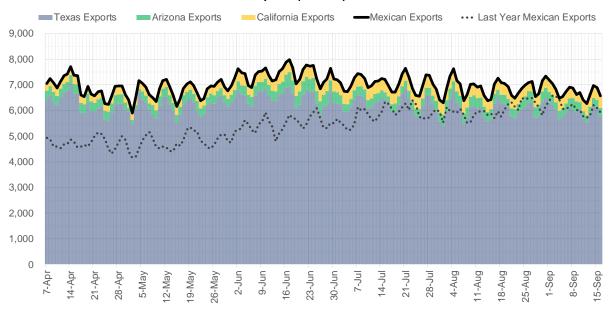
#### US Daily ResCom Consumption(Bcf/d)



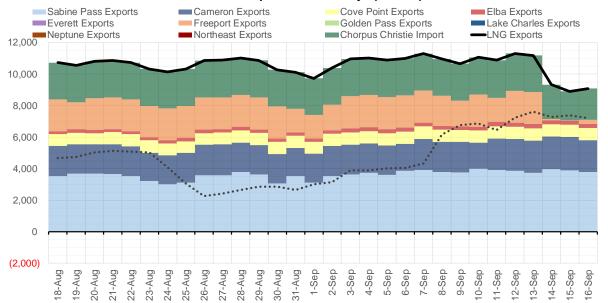
Source: Bloomberg



#### Mexican Exports (MMcf/d)



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



Source: Bloomberg



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

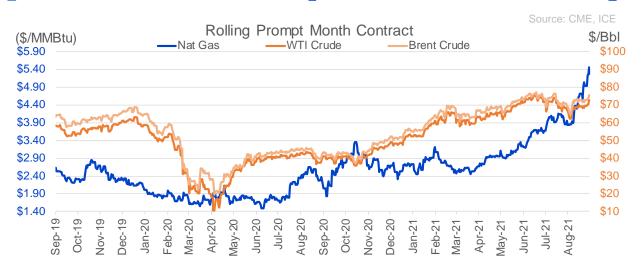
CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE VOL	CONTRACT MONTH	CONTRACT YEAR	PUT/CALL	STRIKE	CUMULATIVE OI
						0004		5.00	57100
10	2021	С	6.00	14741	10	2021	С	5.00	57132
10	2021	C	5.50	9929	10	2021	С	4.00	42355
10	2021	P	5.00	9009	10	2021	С	6.00	42269
10	2021	С	6.25	7632	10	2021	P	3.50	41987
10	2021	С	5.75	6445	12	2021	P	2.75	41959
3	2022	С	10.00	6444	10	2021	С	4.50	40328
10	2021	Р	4.75	6185	12	2021	P	2.50	38542
11	2021	С	7.00	5464	10	2021	С	3.50	32999
3	2022	С	8.00	5345	10	2021	C P	4.25	32446
10	2021	С	7.00	4517	10	2021	-	3.00	31756
11	2021	С	6.25	4324	10	2021	P P	4.00	31098
10	2021	С	6.50	4225	11	2021	-	3.00	30721
10	2021	Р	5.25	4094	10	2021	P	2.50	29994
10	2021	Р	4.50	3707	10	2021	P	2.00	28650
11	2021	С	5.50	3391	10	2021	С	3.25	28193
12	2021	С	7.00	3310	10	2021	P P	2.75	26887
2	2022	С	9.40	3299	12	2021		3.00	24459
3	2022	С	5.50	3106	11	2021	С	4.00	23310
11	2021	С	5.60	2972	11	2021	P	4.00	22953
11	2021	С	6.00	2768	12	2021	С	4.00	22646
3	2022	С	5.25	2704	3	2022	С	10.00	22486
11	2021	С	6.50	2609	10	2021	P	3.75	22378
3	2022	С	7.00	2482	11	2021	P	3.50	22367
10	2021	Р	4.80	2395	12	2021	P	4.00	21864
1	2022	Р	3.50	2327	11	2021	С	7.00	21372
12	2021	Р	4.00	2295	3	2022	P P	3.50	20236
2	2022	С	6.00	2194	10	2021		2.25	19784
2	2022	С	8.00	2091	4 10	2022	С	3.00	19760
10	2021	С	5.25	2090		2021	С	5.50	19503
10	2021	С	5.65	2055	3	2022	C P	5.00	18936
2	2022	C	15.00	2031	10	2021		4.25	18857
12	2021	Ċ	6.25	2020	11	2021	С	6.00	18590
2	2022	Ċ	9.20	1999	3 10	2022 2021	C C	8.00 3.00	18528 18494
2	2022	P	3.50	1953	2	2021	P	3.50	18447
3	2022	C	15.00	1928	10	2022	P P	3.50 4.50	
10	2021	P	5.10	1858	10		P P		18180
11	2021	P	4.00	1835	10	2021 2022	C	3.25 5.00	17940 17421
3	2022	Р	3.50	1732	3	2022	P		
3	2022	P	5.00	1641	3 10	2022	C	2.50 3.75	16805 16780
1	2022	C	8.00	1638	10	2021	P	3.75 3.50	
2	2022	Ċ	10.00	1629	2	2022	C		16740
12	2021	Ċ	8.00	1628	∠ 11	2022	C	5.00 5.00	16591 16287
10	2021	P	5.40	1624	3	2021	C	5.00 4.00	16022
3	2021	C	6.00	1599	3 2	2022	C	4.00 4.00	15022
12	2022	C	6.00	1531	∠ 11		C		
3	2022	P	4.75	1503		2021	C	4.50	15177
3	2022	C	4.75 5.75	1500	1 11	2022 2021	P	4.00 2.50	14503 14486
3 11	2022	C	7.50	1433	4	2021	P P	2.50 2.50	14484
2	2021	C	20.00	1426	11	2022	C C	2.50 3.75	14484
2	2022	C	20.00	1420	. 11	2021	Source	E: CME, ICE	14480



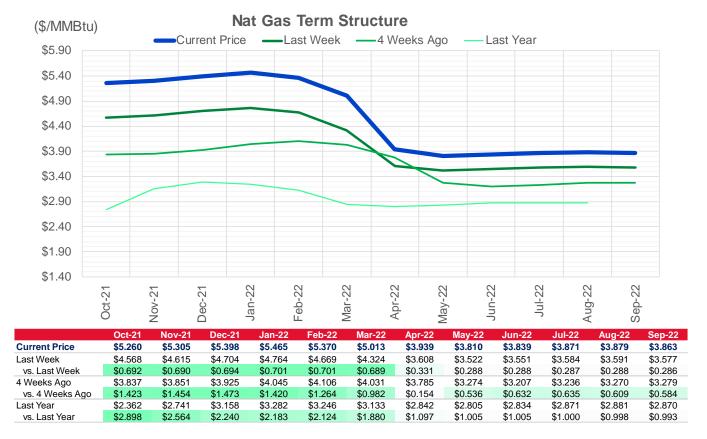
## Nat Gas Futures Open Interest

CME, and ICE Combined

OWE, and TOE 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	
OCT 21	130965	144736	-13771	OCT 21	97773	101547	-3774	
NOV 21	251395	239538	11857	NOV 21	77823	76389	1434	
DEC 21	91910	89737	2173	DEC 21	76691	76465	226	
JAN 22	159573	157495	2078	JAN 22	92697	90654	2044	
FEB 22	57292	60322	-3030	FEB 22	69217	68965	252	
MAR 22	118022	116434	1588	MAR 22	75739	75159	581	
APR 22	117125	116549	576	APR 22	70285	69713	572	
MAY 22	116158	114530	1628	MAY 22	70086	69993	93	
JUN 22	40896	41012	-116	JUN 22	52943	52246	697	
JUL 22	30433	30546	-113	JUL 22	54566	54009	557	
AUG 22	33104	32621	483	AUG 22	54875	54302	573	
SEP 22	35704	35243	461	SEP 22	55155	54593	562	
OCT 22	88720	86815	1905	OCT 22	61372	60935	436	
NOV 22	31994	31794	200	NOV 22	47680	47549	131	
DEC 22	26066	25654	412	DEC 22	50989	50743	246	
JAN 23	22391	22334	57	JAN 23	37267	37198	69	
FEB 23	8831	8586	245	FEB 23	30445	30445	0	
MAR 23	11748	11738	10	MAR 23	32621	32558	63	
APR 23	11683	11757	-74	APR 23	29344	29123	221	
MAY 23	7302	7284	18	MAY 23	29571	29461	110	
JUN 23	5563	5514	49	JUN 23	27514	27404	110	
JUL 23	4050	4040	10	JUL 23	27616	27507	110	
AUG 23	3219	3226	-7	AUG 23	27450	27348	102	
SEP 23	4468	4132	336	SEP 23	26760	26652	107	
OCT 23	5772	6076	-304	OCT 23	28821	28575	246	
NOV 23	2094	2107	-13	NOV 23	27857	27917	-61	
DEC 23	2023	1974	49	DEC 23	26600	26565	35	
JAN 24	1312	1312	0	JAN 24	14824	14716	108	
FEB 24	891	890	1	FEB 24	12364	12226	138	
MAR 24	3211	2958	253	MAR 24	16652	16475	177	







			Prompt	Cash to
	Units	Settled	Settle	Prompt
AGT Citygate	\$/MMBtu	5.50	4.54	-0.96
TETCO M3	\$/MMBtu	5.19	3.65	-1.54
FGT Zone 3	\$/MMBtu	0.03	5.03	5.00
Zone 6 NY	\$/MMBtu	0.03	3.53	3.50
Chicago Citygate	\$/MMBtu	5.49	4.77	-0.72
Michcon	\$/MMBtu	5.41	4.68	-0.73
Columbia TCO Pool	\$/MMBtu	5.09	3.81	-1.28
Ventura	\$/MMBtu	4.68	4.73	0.05
Rockies/Opal	\$/MMBtu	5.70	4.67	-1.03
El Paso Permian Basin	\$/MMBtu	5.29	4.65	-0.64
Socal Citygate	\$/MMBtu	7.95	5.94	-2.01
Malin	\$/MMBtu	5.61	5.19	-0.42
Houston Ship Channel	\$/MMBtu	5.45	5.02	-0.43
Henry Hub Cash	\$/MMBtu	5.60	4.75	-0.85
AECO Cash	C\$/GJ	3.85	3.06	-0.79
Station2 Cash	C\$/GJ	3.71	5.26	1.55
Dawn Cash	C\$/GJ	5.44	4.68	-0.77

Source: CME, Bloomberg



					VS	s. 4 Weeks		
	Units	<b>Current Price</b>	vs.	<b>Last Week</b>		Ago	VS	s. Last Year
NatGas Jul21/Oct21	\$/MMBtu	1.843		0.546		1.594		1.817
NatGas Oct21/Nov21	\$/MMBtu	0.047		-0.001	•	-0.026		-0.007
NatGas Oct21/Jan22	\$/MMBtu	0.216		0.027	•	-0.038	•	-0.072
NatGas Apr22/Oct22	\$/MMBtu	-0.060		-0.016	•	-0.076		-0.087
WTI Crude	\$/Bbl	72.61		3.310		7.150		32.450
Brent Crude	\$/BbI	75.46		2.860		7.230		33.240
Fuel Oil, NY Harbour 1%	\$/Bbl	97.18		0.000		0.000		0.000
Heating Oil	cents/Gallon	220.53		6.890		18.410		108.900
Propane, Mt. Bel	cents/Gallon	1.26		0.071		0.136		0.762
Ethane, Mt. Bel	cents/Gallon	0.40		0.028		0.059		0.191
Coal, PRB	\$/MTon	12.30		0.000		0.000		0.000
Coal, PRB	\$/MMBtu	0.70						
Coal, ILB	\$/MTon	31.05		0.000		0.000		0.000
Coal, ILB	\$/MMBtu	1.32						



### Weather Storage Model - Next 4 Week Forecast

