

Market Report

3 November 2022



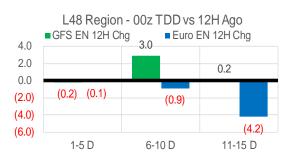
| | Cı | urrent | Δ from YD | Δ from Av | |
|---------------|----|--------|------------------|--------------|-----|
| WTI Prompt | \$ | 88.97 | \$ (1.03) | \$ | 0.7 |

| | C | urront | Δ from YD | Δ fro | m 7D | |
|-----------------|----|--------|------------------|-------------|-------|--|
| | C | urreni | םו וווטוו ב | Avg | | |
| Brent Prompt | \$ | 95.26 | \$ (0.90) | ~ \$ | (0.4) | |

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Vs. 12H Ago



Vs. 24H Ago



| | Current | Δ from YD | Δ from 7D Avg |
|----------------------|---------|---------------|------------------|
| US Dry Production | 100.0 | - 0.48 | ▼ -1.06 |

| | Current | Δ from YD | Δ from 7D Avg |
|---------------|---------|---------------|------------------|
| US ResComm | 16.8 | a 0.44 | ▼ -1.74 |

| | Current | Δ from YD | Δ from 7D Avg |
|--------------------|---------|----------------|------------------|
| Net LNG Exports | 11.2 | ▼ -0.48 | ▼ -0.66 |

| | Current | Δ from YD | Δ from 7D Avg |
|-------------------|---------|-----------|------------------|
| US Power Burns | 29.7 | -0.01 | 0.05 |

| | Current | Δ from YD | Δ from 7D Avg |
|---------------------|---------|---------------|------------------|
| Canadian Imports | 4.0 | - 0.30 | ▼ -1.12 |

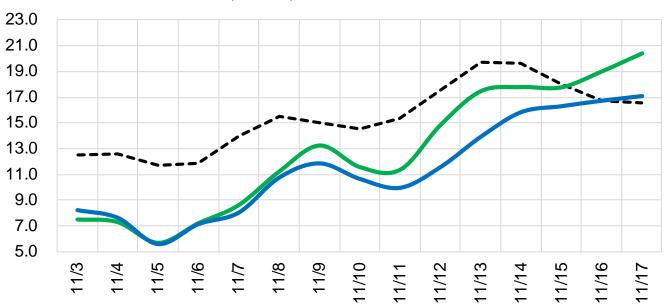
| | Current | Δ from YD | Δ from 7D Avg |
|--------------------|---------|-----------|------------------|
| Mexican Exports | 5.9 | ▼ -0.26 | ▼ -0.47 |



Short-term Weather Model Outlooks (00z)

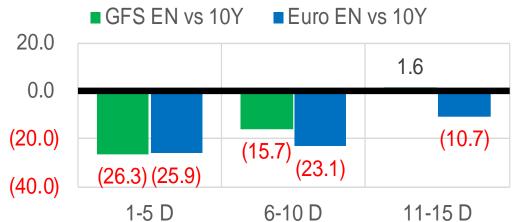






Vs. 10Y Normal

L48 Region - 00z TDD vs 10Y Normal



Source: WSI, Bloomberg



Market Report

Lower 48 Component Models

Daily Balances

| | 28-Oct | 29-Oct | 30-Oct | 31-Oct | 1-Nov | 2-Nov | 3-Nov | DoD | vs. 7D |
|--|--------|--------|--------|--------|-------|-------|-------|------------|---------------|
| Lower 48 Dry Production | 101.9 | 101.3 | 101.1 | 101.6 | 99.8 | 100.5 | 100.0 | ▼ -0.5 | ▼ -1.0 |
| Canadian Imports | 5.1 | 5.1 | 5.8 | 5.8 | 4.5 | 4.3 | 4.0 | ▼ -0.3 | ▼ -1.1 |
| L48 Power | 29.5 | 28.1 | 28.7 | 31.3 | 30.2 | 29.7 | 29.7 | ▼ 0.0 | 0.1 |
| L48 Residential & Commercial | 21.6 | 20.1 | 18.8 | 16.2 | 15.2 | 16.4 | 16.8 | 0.4 | ▼ -1.2 |
| L48 Industrial | 21.5 | 21.0 | 20.8 | 20.5 | 20.7 | 20.8 | 20.9 | 0.2 | 0.0 |
| L48 Lease and Plant Fuel | 5.7 | 5.7 | 5.6 | 5.7 | 5.6 | 5.6 | 5.6 | ▼ -0.1 | ▼ -0.1 |
| L48 Pipeline Distribution | 3.1 | 3.0 | 2.9 | 2.9 | 2.6 | 2.7 | 2.7 | 0.0 | ▼ -0.2 |
| L48 Regional Gas Consumption | 81.4 | 77.8 | 76.9 | 76.6 | 74.3 | 75.1 | 75.6 | 0.6 | ▼ -1.4 |
| Net LNG Delivered | 12.27 | 12.41 | 12.32 | 12.16 | 11.51 | 11.71 | 11.23 | ▼ -0.5 | ▼ -0.8 |
| Total Mexican Exports | 6.6 | 6.4 | 6.0 | 6.4 | 6.3 | 6.1 | 5.9 | ▼ -0.3 | ▼ -0.4 |
| Implied Daily Storage Activity EIA Reported Daily Storage Activity Daily Model Error | 6.7 | 9.8 | 11.7 | 12.3 | 12.2 | 11.9 | 11.3 | | |

| LY | | | | LW | Current | | |
|------------|---|--|---|---|---|--|---|
| 29-Oct | 30-Sep | 7-Oct | 14-Oct | 21-Oct | 28-Oct | WoW | vs. LY |
| 95.9 | 101.0 | 101.8 | 101.7 | 100.4 | 101.1 | 0.7 | 5.2 |
| 5.6 | 6.2 | 6.0 | 5.5 | 6.1 | 5.3 | ▼-0.8 | ▼-0.3 |
| 29.4 | 31.5 | 30.5 | 30.7 | 30.9 | 28.9 | ▼ -1.9 | -0.4 |
| 17.3 | 11.7 | 12.9 | 14.7 | 20.9 | 15.9 | ▼ -5.0 | -1.3 |
| 20.8 | 19.7 | 20.8 | 20.3 | 20.0 | 21.5 | 1.4 | 0.7 |
| 5.4 | 5.6 | 5.7 | 5.7 | 5.6 | 5.6 | 0.0 | 0.3 |
| 2.9 | 2.7 | 2.7 | 2.8 | 3.2 | 2.8 | ▼ -0.4 | -0.1 |
| 75.6 | 71.3 | 72.6 | 74.1 | 80.6 | 74.7 | ▼ -5.8 | ▼-0.9 |
| 10.8 | 11.8 | 11.0 | 11.0 | 11.5 | 11.4 | ▼ -0.1 | 0.6 |
| 6.9 | 6.9 | 6.7 | 6.6 | 6.7 | 6.4 | ▼ -0.3 | ▼-0.4 |
| 8.2 9.0 | 17.2 18.4 | 17.5 17.9 | 15.6 15.9 -0.3 | 7.7 7.4 | 13.9 | 6.2 | 5.7 |
| | 29-Oct 95.9 5.6 29.4 17.3 20.8 5.4 2.9 75.6 10.8 6.9 8.2 | 29-Oct 30-Sep 95.9 101.0 5.6 6.2 29.4 31.5 17.3 11.7 20.8 19.7 5.4 5.6 2.9 2.7 75.6 71.3 10.8 11.8 6.9 6.9 8.2 17.2 9.0 18.4 | 29-Oct 30-Sep 7-Oct 95.9 101.0 101.8 5.6 6.2 6.0 29.4 31.5 30.5 17.3 11.7 12.9 20.8 19.7 20.8 5.4 5.6 5.7 2.9 2.7 2.7 75.6 71.3 72.6 10.8 11.8 11.0 6.9 6.7 8.2 17.2 17.5 9.0 18.4 17.9 | 29-Oct 30-Sep 7-Oct 14-Oct 95.9 101.0 101.8 101.7 5.6 6.2 6.0 5.5 29.4 31.5 30.5 30.7 17.3 11.7 12.9 14.7 20.8 19.7 20.8 20.3 5.4 5.6 5.7 5.7 2.9 2.7 2.7 2.8 75.6 71.3 72.6 74.1 10.8 11.8 11.0 11.0 6.9 6.7 6.6 8.2 17.2 17.5 15.6 9.0 18.4 17.9 15.9 | 29-Oct 30-Sep 7-Oct 14-Oct 21-Oct 95.9 101.0 101.8 101.7 100.4 5.6 6.2 6.0 5.5 6.1 29.4 31.5 30.5 30.7 30.9 17.3 11.7 12.9 14.7 20.9 20.8 19.7 20.8 20.3 20.0 5.4 5.6 5.7 5.7 5.6 2.9 2.7 2.7 2.8 3.2 75.6 71.3 72.6 74.1 80.6 10.8 11.8 11.0 11.0 11.5 6.9 6.9 6.7 6.6 6.7 8.2 17.2 17.5 15.6 7.7 9.0 18.4 17.9 15.9 7.4 | 29-Oct 30-Sep 7-Oct 14-Oct 21-Oct 28-Oct 95.9 101.0 101.8 101.7 100.4 101.1 5.6 6.2 6.0 5.5 6.1 5.3 29.4 31.5 30.5 30.7 30.9 28.9 17.3 11.7 12.9 14.7 20.9 15.9 20.8 19.7 20.8 20.3 20.0 21.5 5.4 5.6 5.7 5.7 5.6 5.6 2.9 2.7 2.7 2.8 3.2 2.8 75.6 71.3 72.6 74.1 80.6 74.7 10.8 11.8 11.0 11.0 11.5 11.4 6.9 6.9 6.7 6.6 6.7 6.4 8.2 17.2 17.5 15.6 7.7 13.9 9.0 18.4 17.9 15.9 7.4 | 29-Oct 30-Sep 7-Oct 14-Oct 21-Oct 28-Oct WoW 95.9 101.0 101.8 101.7 100.4 101.1 ▲ 0.7 5.6 6.2 6.0 5.5 6.1 5.3 ▼-0.8 29.4 31.5 30.5 30.7 30.9 28.9 ▼-1.9 17.3 11.7 12.9 14.7 20.9 15.9 ▼-5.0 20.8 19.7 20.8 20.3 20.0 21.5 ▲ 1.4 5.4 5.6 5.7 5.7 5.6 5.6 ▲ 0.0 2.9 2.7 2.7 2.8 3.2 2.8 ▼-0.4 75.6 71.3 72.6 74.1 80.6 74.7 ▼-5.8 10.8 11.8 11.0 11.0 11.5 11.4 ▼-0.1 6.9 6.9 6.7 6.6 6.7 6.4 ▼-0.3 8.2 17.2 17.5 15.6 7.7 13.9 |

| Monthly Balances | 2Yr Ago | LY | | | | | MTD | | |
|--|---------|--------|--------|--------|--------|--------|--------|------------|----------------|
| | Nov-20 | Nov-21 | Jul-22 | Aug-22 | Sep-22 | Oct-22 | Nov-22 | MoM | vs. LY |
| Lower 48 Dry Production | 91.2 | 96.4 | 97.8 | 98.2 | 100.6 | 101.3 | 100.1 | ▼-1.1 | 3.7 |
| Canadian Imports | 4.6 | 5.3 | 5.9 | 5.4 | 5.9 | 5.7 | 4.4 | ▼-1.2 | ▼ -0.9 |
| L48 Power | 25.7 | 29.3 | 44.8 | 43.8 | 37.0 | 30.1 | 29.9 | ▼-0.2 | 0.6 |
| L48 Residential & Commercial | 24.4 | 28.2 | 8.2 | 7.8 | 8.9 | 16.6 | 15.8 | ▼-0.8 | ▼ -12.4 |
| L48 Industrial | 22.5 | 23.3 | 19.4 | 19.7 | 20.5 | 20.7 | 20.7 | 0.0 | ▼ -2.6 |
| L48 Lease and Plant Fuel | 5.0 | 5.4 | 5.5 | 5.5 | 5.5 | 5.7 | 5.6 | ▼-0.1 | 0.2 |
| L48 Pipeline Distribution | 2.7 | 3.3 | 3.1 | 3.0 | 2.8 | 2.9 | 2.6 | ▼-0.3 | ▼-0.7 |
| L48 Regional Gas Consumption | 80.3 | 89.5 | 81.0 | 79.9 | 74.7 | 76.0 | 74.7 | ▼-1.3 | ▼-14.9 |
| Net LNG Exports | 10.1 | 11.4 | 10.9 | 11.0 | 11.5 | 11.3 | 11.6 | 0.3 | 0.2 |
| Total Mexican Exports | 6.1 | 6.1 | 7.0 | 6.9 | 6.7 | 6.6 | 6.2 | ▼-0.3 | ▲ 0.1 |
| Implied Daily Storage Activity EIA Reported Daily Storage Activity | -0.7 | -5.3 | 4.8 | 5.8 | 13.6 | 13.1 | 12.1 | | |
| Daily Model Error | | | | | -0.5 | | | | |



Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

| | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct | 1-Nov | DoD | vs. 7D |
|-------------------------------|--------|--------|--------|--------|--------|--------|-------|------|--------|
| NRC Nuclear Daily Output | 74.6 | 75.4 | 76.6 | 76.6 | 76.6 | 74.8 | 75.8 | 1.1 | 0.1 |
| 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 | 30.3 | 29.5 | 28.3 | 28.3 | 28.3 | 30.1 | 29.0 | -1.1 | -0.1 |
| NRC % Nuclear Cap Utilization | 75.8 | 76.6 | 77.9 | 77.9 | 77.9 | 76.0 | 77.1 | 1.1 | 0.1 |

Wind Generation Daily Average - MWh (EIA)

| | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct | 1-Nov | DoD | vs. 7D |
|------------|--------|--------|--------|--------|--------|--------|-------|-------|--------|
| CALI Wind | 2755 | 1252 | 445 | 706 | 643 | 429 | 2489 | 2060 | 1451 |
| TEXAS Wind | 11743 | 18095 | 15183 | 6441 | 1957 | 5260 | 11096 | 5836 | 1316 |
| US Wind | 48539 | 62782 | 43203 | 29325 | 17504 | 24521 | 49135 | 24614 | 11489 |

Generation Daily Average - MWh (EIA)

| | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct | 1-Nov | DoD | vs. 7D |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| US Wind | 48539 | 62782 | 43203 | 29325 | 17504 | 24521 | 49135 | 24614 | 11489 |
| US Solar | 12627 | 13154 | 11427 | 12169 | 12188 | 10917 | 10938 | 22 | -1142 |
| US Petroleum | 952 | 966 | 964 | 969 | 983 | 1023 | 1013 | -10 | 37 |
| US Other | 7964 | 8518 | 9551 | 9373 | 9503 | 9606 | 10305 | 698 | 1219 |
| US Coal | 76736 | 73387 | 80614 | 77196 | 80592 | 83177 | 75451 | -7727 | -3166 |
| US Nuke | 78044 | 79172 | 80235 | 80034 | 79682 | 78723 | 79717 | 994 | 402 |
| US Hydro | 20130 | 20302 | 20687 | 19460 | 17637 | 22280 | 24027 | 1747 | 3944 |
| US Gas | 157220 | 147907 | 157038 | 150203 | 156730 | 171992 | 159005 | -12987 | 2157 |

See National Wind and Nuclear daily charts



US Nuke

US Hydro

US Gas

Nuclear Generation Weekly Average - GWh (NRC)

Storage Week Average Generation Data

| | | | | | | | | 10/-10/ |
|----------------------------------|--------------|---------|-------|--------|--------|---------|-------|------------------------|
| | 29-Oct | 30-Sep | 7-Oct | 14-Oct | 21-Oct | 28-Oct | WoW | WoW Bcf/d Impact |
| NRC Nuclear Daily Output | 71.6 | 84.9 | 80.5 | 76.2 | 74.4 | 74.4 | 0.0 | 0.0 |
| NRC Nuclear Max Capacity | 104.9 | 104.9 | 104.9 | 104.9 | 104.9 | 104.9 | 0.0 | |
| NRC Nuclear Outage | 33.3 | 20.0 | 24.4 | 28.7 | 30.5 | 30.5 | 0.0 | |
| NRC % Nuclear Cap Utilization | 72.8 | 86.4 | 81.9 | 77.5 | 75.6 | 75.6 | 0.0 | |
| Wind Generation Weekly Av | verage - MW | h (EIA) | | | | | | |
| | | | | | | | | WoW |
| | 29-Oct | 30-Sep | 7-Oct | 14-Oct | 21-Oct | 28-Oct | WoW | Bcf/d Impact |
| CALI Wind | 2314 | 1208 | 1370 | 1087 | 944 | 1974 | 1029 | -0.2 |
| TEXAS Wind | 15462 | 8083 | 6160 | 7842 | 9710 | 17228 | 7517 | -1.4 |
| US Wind | 53987 | 40606 | 32707 | 41063 | 45195 | 64741 | 19546 | -3.7 |
| | | | | | | | 43% | |
| | | | | | | 8.0 | | |
| Generation Weekly Average | e - MWh (EIA |) | | | | | | |
| , , | | , | | | LY | Current | | |
| | | | | | | | | WoW |
| | 29-Oct | 30-Sep | 7-Oct | 14-Oct | 21-Oct | 28-Oct | WoW | Bcf/d |
| | | • | | | | | | Impact |
| US Wind | 53987 | 40606 | 32707 | 41063 | 45195 | 64741 | 19546 | -3.7 |
| US Solar | 10171 | 16636 | 15455 | 14503 | 14546 | 13625 | -921 | 0.2 |
| US Petroleum | 907 | 379 | 664 | 842 | 1054 | 933 | -121 | 0.0 |
| US Other | 10232 | 11165 | 10786 | 11233 | 11611 | 9078 | -2533 | 0.5 |
| US Coal | 75374 | 77592 | 74744 | 76322 | 79517 | 69841 | -9676 | 1.8 |

See National Wind and Nuclear daily charts

86665

23101

171876

83242

21917

171116

77235

20001

170286

76567

19318

162257

77712

19097

147851

1146

-220

-14406

-0.2

0.0

-2.7

74308

23812

155996



Monthly Average Generation Data

| Nuclear Generation Monthly Average - GWh (NRC) | | | | | | | | | | | |
|--|-----------------|-----------------|--------|--------|--------|--------|-----------------|--------------------|---------------------|--|--|
| | 2Yr Ago LY | | | | | MTD | | | | | |
| | Same 30 days | Same 30 days | Aug-22 | Sep-22 | Oct-22 | Nov-22 | Last 30 days | MoM (MTD vs LY) | Last 30 days YoY | | |
| NRC Nuclear Daily Output | 75.9 | 74.2 | 90.5 | 86.2 | 76.2 | 76.0 | 75.6 | -0.2 | 1.4 | | |
| 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 | 28.9 | 30.7 | 14.3 | 18.7 | 28.7 | 28.9 | 29.3 | 0.2 | -1.4 | | |
| NRC % Nuclear Cap Utilization | 77.2 | 75.5 | 92.1 | 87.7 | 77.4 | 77.2 | 76.9 | -0.2 | 1.4 | | |

Wind Generation Monthly Average - MWh (EIA)

| | 2Yr Ago | LY | | | | MTD | | | | |
|------------|-----------------|-----------------|--------|--------|--------|--------|-----------------|--------------------|---------------------|--|
| | Same 30 days | Same 30 days | Aug-22 | Sep-22 | Oct-22 | Nov-22 | Last 30 days | MoM (MTD vs LY) | Last 30 days YoY | |
| CALI Wind | 1330 | 1904 | 2028 | 1608 | 1239 | 2489 | 1319 | 1250 | -584 | |
| TEXAS Wind | 9895 | 12354 | 8440 | 7993 | 9916 | 11096 | 10469 | 1180 | -1885 | |
| US Wind | 40849 | 45280 | 33222 | 38117 | 43696 | 49135 | 45481 | 5439 | 201 | |

Generation Monthly Average - MWh (EIA)

| | 2Yr Ago | LY | | | | MTD | | | |
|--------------|-----------------|-----------------|--------|--------|--------|--------|-----------------|--------------------|---------------------|
| | Same 30 days | Same 30 days | Aug-22 | Sep-22 | Oct-22 | Nov-22 | Last 30 days | MoM (MTD vs LY) | Last 30 days YoY |
| US Wind | 40849 | 45280 | 33222 | 38117 | 43696 | 49135 | 45481 | ▼-3653.7 | 201 |
| US Solar | 8141 | 10744 | 16962 | 16163 | 14138 | 10938 | 13667 | 2729.0 | 2924 |
| US Petroleum | 784 | 890 | 1251 | 864 | 899 | 1013 | 933 | ▼ -80 | 43 |
| US Other | 8427 | 11120 | 10543 | 10467 | 10521 | 10305 | 10467 | 162 | ▼ -653 |
| US Coal | 83147 | 82249 | 117203 | 92002 | 75808 | 75451 | 76318 | 867 | ▼ -5931 |
| US Nuke | 79307 | 75946 | 92976 | 89057 | 78123 | 79717 | 78069 | ▼ -1648 | 2124 |
| US Hydro | 25767 | 24478 | 30192 | 25202 | 19923 | 24027 | 20199 | ▼ -3828 | ▼ -4279 |
| US Gas | 159469 | 160784 | 233739 | 199958 | 162131 | 159005 | 161625 | ▼ -5451 | 841 |
| US Total | 404476 | 411536 | 535696 | 470459 | 405459 | 409350 | 406462 | ▼ -7247 | ▼ -5074 |



See National Wind and Nuclear daily charts



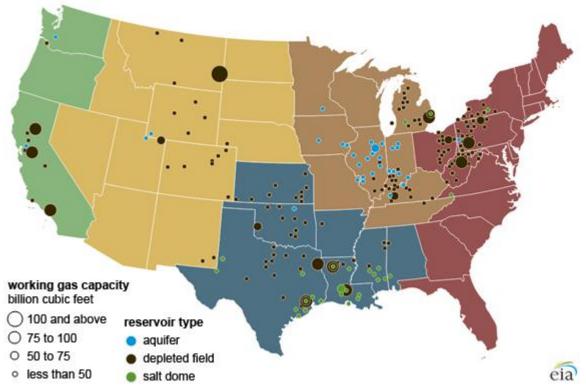
Regional S/D Models Storage Projection

Week Ending 28-Oct

| | Daily Raw Storage | Daily Adjustment Factor | Daily Average Storage Activity (Adjusted) * | Weekly Adjusted Storage Activity |
|---------------|----------------------|-------------------------------|---|---|
| L48 | 14.9 | -0.9 | 14.0 | 98 |
| | | | | |
| East | 1.4 | 3.0 | 4.3 | 30 |
| Midwest | 4.7 | 0.7 | 5.4 | 38 |
| Mountain | 4.7 | -4.2 | 0.4 | 3 |
| South Central | 4.2 | 0.1 | 4.3 | 30 |
| Pacific | 0.1 | -0.6 | -0.5 | -4 |

^{*}Adjustment Factor is calcuated based on historical regional deltas

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



18-Nov

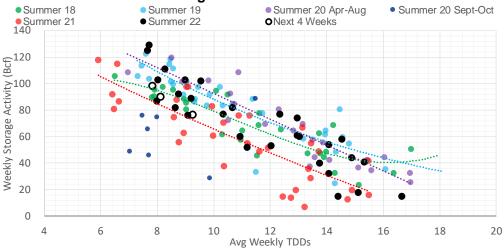


Weather Model Storage Projection

| Next report and beyond | | |
|------------------------|-------|----------------------------|
| Week Ending | GWDDs | Week Storage Projection |
| 28-Oct | 7.9 | 98 |
| 04-Nov | 8.1 | 90 |
| 11-Nov | 9.3 | 76 |

Weather Storage Model - Next 4 Week Forecast

#N/A



Go to larger image

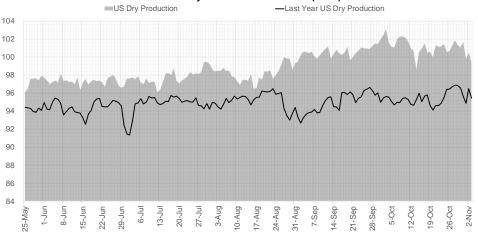


#N/A

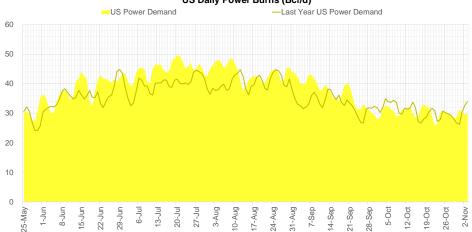


Supply - Demand Trends

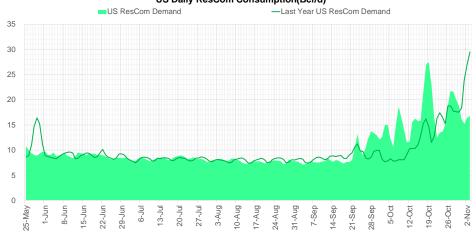
US Dry Natural Gas Production (Bcf/d)



US Daily Power Burns (Bcf/d)



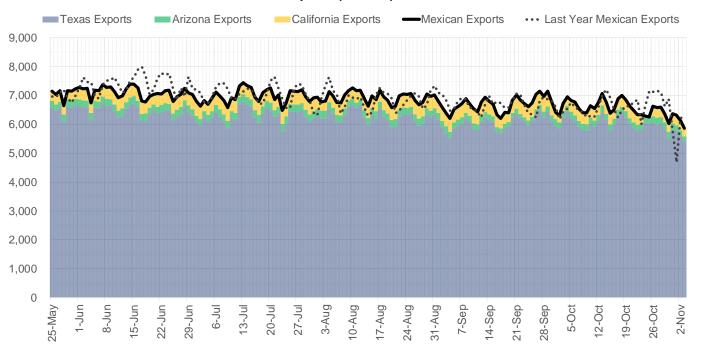
US Daily ResCom Consumption(Bcf/d)



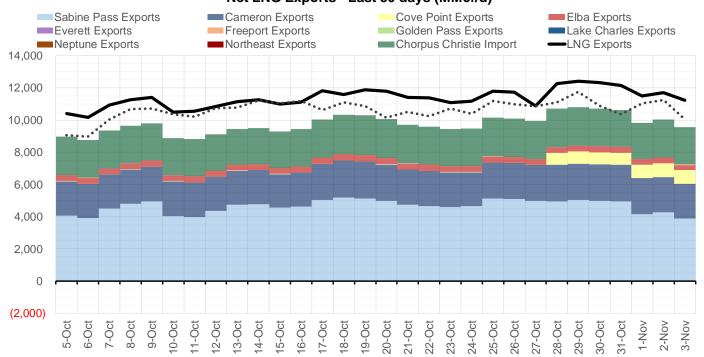
Source: Bloomberg



Mexican Exports (MMcf/d)



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



Source: Bloomberg



Market Report

Nat Gas Options Volume and Open Interest CME and ICE Combined

| CONTRACT MONTH | CONTRACT YEAR | PUT/CALL | STRIKE | CUMULATIVE VOL | CONTRACT MONTH | CONTRACT YEAR | PUT/CALL | STRIKE | CUMULATIVE OI |
|-------------------|------------------|----------|--------------|-------------------|-------------------|------------------|----------|--------------|----------------|
| 12 | 2022 | P | 4.50 | 8700 | 12 | 2022 | P | 4.00 | 52857 |
| 12 | 2022 | P | 3.75 | 5194 | 12 | 2022 | P | 5.00 | 34088 |
| 12 | 2022 | P P | 3.75 4.50 | 4568 | 12 | 2022 | P | 4.50 | 30263 |
| 12 | 2023 | C | 10.00 | 4543 | 5 | 2023 | P | 2.00 | 28119 |
| 12 | 2023 | P | 3.75 | 4545 4505 | 12 | 2022 | Ċ | 10.00 | 27627 |
| 2 | 2023 | P | 3.75 | 4500 | 12 | 2022 | P | 6.00 | 26291 |
| 3 | 2023 | P | 3.75 | 4500 | 12 | 2022 | Р | 3.50 | 25438 |
| 1 | 2023 | C | 10.00 | 4438 | 1 | 2023 | C | 10.00 | 25241 |
| 12 | 2022 | P | 5.00 | 4341 | 10 | 2023 | P | 3.00 | 24485 |
| 12 | 2022 | C | 9.00 | 4121 | 3 | 2023 | C | 10.00 | 23236 |
| 12 | 2022 | Č | 8.00 | 4116 | 4 | 2023 | P | 3.00 | 22523 |
| 12 | 2022 | Č | 7.00 | 3835 | 2 | 2023 | С | 10.00 | 21484 |
| 12 | 2022 | P | 4.00 | 3821 | 3 | 2023 | Р | 4.00 | 20806 |
| 2 | 2023 | P | 4.50 | 3800 | 4 | 2023 | Р | 3.50 | 20066 |
| 3 | 2023 | P | 4.50 | 3246 | 4 | 2023 | Р | 2.00 | 20059 |
| 1 | 2023 | P | 5.00 | 3102 | 10 | 2023 | Р | 2.50 | 19500 |
| 12 | 2022 | P | 5.50 | 3025 | 12 | 2022 | С | 8.00 | 19381 |
| 12 | 2022 | P | 3.50 | 2942 | 10 | 2023 | Р | 4.00 | 19331 |
| 1 | 2023 | Р | 4.00 | 2418 | 10 | 2023 | Р | 2.00 | 19260 |
| 3 | 2023 | P | 3.00 | 2350 | 1 | 2023 | Р | 3.00 | 19239 |
| 12 | 2022 | Р | 4.75 | 2334 | 1 | 2023 | Р | 5.00 | 19155 |
| 4 | 2023 | Р | 2.75 | 2100 | 12 | 2022 | Р | 3.00 | 19148 |
| 5 | 2023 | P | 2.75 | 2100 | 1 | 2023 | Р | 4.00 | 19017 |
| 6 | 2023 | Р | 2.75 | 2100 | 5 | 2023 | P | 3.00 | 18958 |
| 1 | 2023 | Р | 2.75 | 2001 | 3 | 2023 | С | 20.00 | 18895 |
| 2 | 2023 | P | 2.75 | 2000 | 12 | 2022 | С | 5.00 | 18333 |
| 3 | 2023 | P | 2.75 | 2000 | 6 | 2023 | P - | 3.00 | 18315 |
| 4 | 2023 | C | 10.00 | 1950 | 4 | 2023 | P | 4.00 | 18060 |
| 3 | 2023 | Ċ | 10.00 | 1914 | 12 | 2022 | P | 5.50 | 17843 |
| 12 | 2022 | C | 6.50 | 1867 | 5 | 2023 | P | 3.50 | 17485 |
| 3 | 2023 | P | 4.00 | 1849 | 6 | 2023 | P | 3.50 | 17425 |
| 4 | 2023 | P | 3.50 | 1785 | 8 | 2023 | P | 3.00 | 17291 |
| 5 | 2023 | Р | 3.50 | 1785 | 7 9 | 2023 2023 | P P | 3.00 3.00 | 17290 17190 |
| 6 | 2023 | Р | 3.50 | 1785 | 9 | 2023 | P P | 3.00 4.00 | 17161 |
| 7 | 2023 | Р | 3.50 | 1785 | 10 | 2023 | P | 3.50 | 17008 |
| 8 | 2023 | Р | 3.50 | 1785 | 12 | 2023 | C | 7.00 | 16726 |
| 9 | 2023 | Р | 3.50 | 1785 | 6 | 2022 | P | 2.00 | 16624 |
| 10 | 2023 | Р | 3.50 | 1785 | 8 | 2023 | P | 3.50 | 16561 |
| 1 | 2023 | Р | 3.00 | 1782 | 5 | 2023 | P | 4.00 | 16531 |
| 12 | 2022 | С | 6.00 | 1764 | 3 | 2023 | P | 3.00 | 16528 |
| 12 | 2022 | Р | 4.25 | 1763 | 6 | 2023 | P | 4.00 | 16499 |
| 2 | 2023 | Р | 3.00 | 1610 | 7 | 2023 | P | 3.50 | 16429 |
| 12 | 2022 | С | 11.00 | 1503 | 9 | 2023 | Р | 3.50 | 16419 |
| 2 | 2023 | С | 7.80 | 1500 | 12 | 2022 | C | 6.00 | 16385 |
| 2 | 2023 | С | 7.90 | 1500 | 2 | 2023 | Ċ | 8.00 | 16348 |
| 2 | 2023 | С | 10.00 | 1500 | 3 | 2023 | Č | 8.00 | 16270 |
| 5 | 2023 | С | 10.00 | 1450 | 12 | 2022 | Č | 4.00 | 16195 |
| 6 | 2023 | С | 10.00 | 1450 | 7 | 2023 | P | 4.00 | 15894 |
| 2 | 2023 | С | 15.00 | 1435 | 8 | 2023 | | | 15802 |
| | | | | | | | Source | : CME, ICE | |



Nat Gas Futures Open Interest

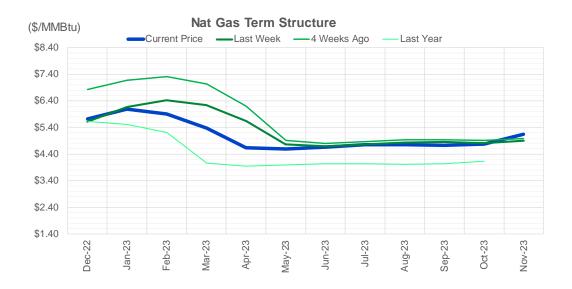
CME and ICE Combined

| CME Henry Hub Futures (10,000 MMBtu) ICE Henry Hub Futures Contract Equivalent (10,000 MM | | | | | | | | | | | | | |
|--|---------|--------|--------------|-------------|---------|-------|--------------|--|--|--|--|--|--|
| CME Henry F | | | | ICE Henry F | | | No. 1 | | | | | | |
| | Current | Prior | Daily Change | | Current | Prior | Daily Change | | | | | | |
| DEC 22 | 96540 | 104493 | -7953 | DEC 22 | 79281 | 78138 | 1143 | | | | | | |
| JAN 23 | 141420 | 143134 | -1714 | JAN 23 | 73813 | 71320 | 2493 | | | | | | |
| FEB 23 | 60891 | 59949 | 942 | FEB 23 | 66091 | 65570 | 521 | | | | | | |
| MAR 23 | 100888 | 98813 | 2075 | MAR 23 | 61059 | 59276 | 1784 | | | | | | |
| APR 23 | 80477 | 78934 | 1543 | APR 23 | 56805 | 56282 | 522 | | | | | | |
| MAY 23 | 86283 | 86176 | 107 | MAY 23 | 60024 | 59935 | 89 | | | | | | |
| JUN 23 | 23747 | 23343 | 404 | JUN 23 | 49575 | 49428 | 147 | | | | | | |
| JUL 23 | 34353 | 34130 | 223 | JUL 23 | 49829 | 49524 | 305 | | | | | | |
| AUG 23 | 22908 | 22399 | 509 | AUG 23 | 47594 | 47553 | 41 | | | | | | |
| SEP 23 | 30203 | 29863 | 340 | SEP 23 | 45931 | 45595 | 336 | | | | | | |
| OCT 23 | 51588 | 52143 | -555 | OCT 23 | 57616 | 57473 | 143 | | | | | | |
| NOV 23 | 21407 | 21515 | -108 | NOV 23 | 47650 | 47441 | 209 | | | | | | |
| DEC 23 | 27979 | 28138 | -159 | DEC 23 | 42377 | 41981 | 396 | | | | | | |
| JAN 24 | 36684 | 36733 | -49 | JAN 24 | 46669 | 46148 | 521 | | | | | | |
| FEB 24 | 11437 | 11363 | 74 | FEB 24 | 30819 | 30915 | -96 | | | | | | |
| MAR 24 | 22877 | 22442 | 435 | MAR 24 | 37971 | 37222 | 749 | | | | | | |
| APR 24 | 21679 | 21593 | 86 | APR 24 | 31017 | 30547 | 470 | | | | | | |
| MAY 24 | 8961 | 8776 | 185 | MAY 24 | 29628 | 29289 | 339 | | | | | | |
| JUN 24 | 3220 | 3218 | 2 | JUN 24 | 26768 | 26324 | 444 | | | | | | |
| JUL 24 | 4186 | 4211 | -25 | JUL 24 | 25550 | 25629 | -79 | | | | | | |
| AUG 24 | 3981 | 3973 | 8 | AUG 24 | 25060 | 25139 | -79 | | | | | | |
| SEP 24 | 2631 | 2626 | 5 | SEP 24 | 24952 | 25001 | -48 | | | | | | |
| OCT 24 | 9133 | 9056 | 77 | OCT 24 | 29524 | 29328 | 196 | | | | | | |
| NOV 24 | 4902 | 4892 | 10 | NOV 24 | 26249 | 26251 | -2 | | | | | | |
| DEC 24 | 8684 | 8681 | 3 | DEC 24 | 30104 | 30150 | -45 | | | | | | |
| JAN 25 | 17816 | 17810 | 6 | JAN 25 | 23558 | 23602 | -44 | | | | | | |
| FEB 25 | 1791 | 1789 | 2 | FEB 25 | 15785 | 15739 | 47 | | | | | | |
| MAR 25 | 6164 | 6155 | 9 | MAR 25 | 17714 | 17699 | 15 | | | | | | |
| APR 25 | 5837 | 5829 | 8 | APR 25 | 16521 | 16532 | -11 | | | | | | |
| MAY 25 | 2618 | 2618 | 0 | MAY 25 | 15115 | 15144 | -30 | | | | | | |

Source: CME, ICE







| | Dec-22 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Aug-23 | Sep-23 | Oct-23 | Nov-23 |
|----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------|
| Current Price | \$5.714 | \$6.080 | \$5.899 | \$5.375 | \$4.630 | \$4.585 | \$4.659 | \$4.742 | \$4.763 | \$4.725 | \$4.788 | \$5.154 |
| Last Week | \$5.613 | \$6.166 | \$6.427 | \$6.230 | \$5.636 | \$4.759 | \$4.691 | \$4.762 | \$4.841 | \$4.857 | \$4.819 | \$4.895 |
| vs. Last Week | \$0.101 | -\$0.086 | -\$0.528 | -\$0.855 | -\$1.006 | -\$0.174 | -\$0.032 | -\$0.020 | -\$0.078 | -\$0.132 | -\$0.031 | \$0.259 |
| 4 Weeks Ago | \$6.837 | \$7.174 | \$7.320 | \$7.030 | \$6.200 | \$4.921 | \$4.801 | \$4.870 | \$4.940 | \$4.948 | \$4.916 | \$4.989 |
| vs. 4 Weeks Ago | -\$1.123 | -\$1.094 | -\$1.421 | -\$1.655 | -\$1.570 | -\$0.336 | -\$0.142 | -\$0.128 | -\$0.177 | -\$0.223 | -\$0.128 | \$0.165 |
| Last Year | \$5.542 | \$5.640 | \$5.522 | \$5.206 | \$4.066 | \$3.955 | \$3.989 | \$4.030 | \$4.033 | \$4.013 | \$4.042 | \$4.125 |
| vs. Last Year | \$0.172 | \$0.440 | \$0.377 | \$0.169 | \$0.564 | \$0.630 | \$0.670 | \$0.712 | \$0.730 | \$0.712 | \$0.746 | \$1.029 |

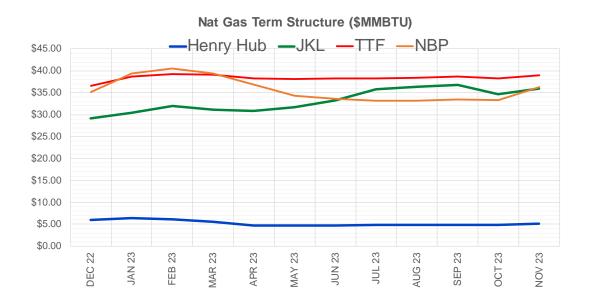
| | Heite | Cash | Prompt | Cash to |
|-----------------------|----------|---------|--------|---------|
| | Units | Settled | Settle | Prompt |
| AGT Citygate | \$/MMBtu | 3.77 | 6.84 | 3.07 |
| TETCO M3 | \$/MMBtu | 3.15 | 4.60 | 1.45 |
| FGT Zone 3 | \$/MMBtu | 3.20 | 5.74 | 2.54 |
| Zone 6 NY | \$/MMBtu | 3.20 | 4.70 | 1.50 |
| Chicago Citygate | \$/MMBtu | 3.62 | 5.26 | 1.64 |
| Michcon | \$/MMBtu | 3.78 | 5.14 | 1.36 |
| Columbia TCO Pool | \$/MMBtu | 3.10 | 4.44 | 1.34 |
| Ventura | \$/MMBtu | 3.73 | 5.39 | 1.66 |
| Rockies/Opal | \$/MMBtu | 6.56 | 5.07 | -1.49 |
| El Paso Permian Basin | \$/MMBtu | 2.10 | 3.25 | 1.15 |
| Socal Citygate | \$/MMBtu | 7.40 | 6.07 | -1.33 |
| Malin | \$/MMBtu | 8.28 | 5.78 | -2.50 |
| Houston Ship Channel | \$/MMBtu | 2.63 | 4.96 | 2.32 |
| Henry Hub Cash | \$/MMBtu | 4.58 | 4.94 | 0.36 |
| AECO Cash | C\$/GJ | 4.09 | 4.35 | 0.26 |
| Station2 Cash | C\$/GJ | 1.21 | 5.77 | 4.56 |
| Dawn Cash | C\$/GJ | 4.13 | 5.26 | 1.13 |

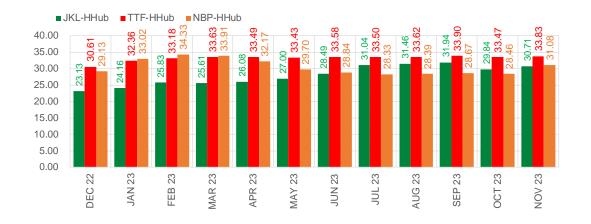
Source: CME, Bloomberg



| | | | | | | 4 Weeks | | | | |
|-------------------------|--------------|---------------|-----|-----------|--|-------------|----|--------------|--|--|
| | | | | | | vs. 4 Weeks | | | | |
| | Units | Current Price | VS. | Last Week | | Ago | VS | s. Last Year | | |
| NatGas Jul21/Oct21 | \$/MMBtu | 2.224 | | 0.000 | | 0.000 | | 0.000 | | |
| NatGas Oct21/Nov21 | \$/MMBtu | 0.361 | | 0.000 | | 0.000 | | 0.000 | | |
| NatGas Oct21/Jan22 | \$/MMBtu | -1.817 | | 0.000 | | 0.000 | | -1.756 | | |
| NatGas Apr22/Oct22 | \$/MMBtu | 1.532 | | 0.000 | | 0.000 | | 1.589 | | |
| WTI Crude | \$/Bbl | 90.00 | | 2.090 | | 2.240 | | 9.140 | | |
| Brent Crude | \$/Bbl | 96.16 | | 0.470 | | 2.790 | | 14.170 | | |
| Fuel Oil, NY Harbour 1% | \$/Bbl | 97.18 | | 0.000 | | 0.000 | | 0.000 | | |
| Heating Oil | cents/Gallon | 367.74 | | -44.270 | | -0.950 | | 124.290 | | |
| Propane, Mt. Bel | cents/Gallon | 0.88 | | 0.027 | | -0.027 | | -0.507 | | |
| Ethane, Mt. Bel | cents/Gallon | 0.39 | | -0.012 | | -0.018 | | -0.038 | | |
| 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 | | | | | | | | |



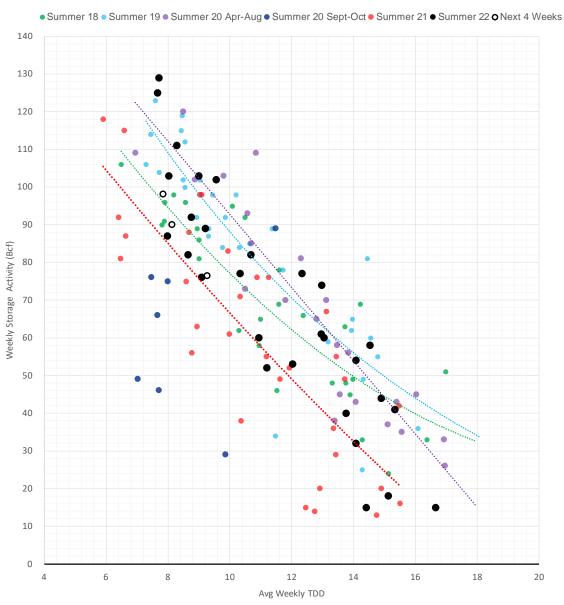




| | DEC 22 | JAN 23 | FEB 23 | MAR 23 | APR 23 | MAY 23 | JUN 23 | JUL 23 | AUG 23 | SEP 23 | OCT 23 | NOV 23 |
|-----------|----------|----------|----------|----------|----------|----------|---------------|----------|----------|----------|----------|----------|
| Henry Hub | \$5.975 | \$6.333 | \$6.147 | \$5.560 | \$4.761 | \$4.686 | \$4.745 | \$4.822 | \$4.836 | \$4.798 | \$4.864 | \$5.181 |
| JKL | \$29.105 | \$30.490 | \$31.975 | \$31.165 | \$30.840 | \$31.690 | \$33.235 | \$35.865 | \$36.300 | \$36.735 | \$34.705 | \$35.895 |
| JKL-HHub | \$23.130 | \$24.157 | \$25.828 | \$25.605 | \$26.079 | \$27.004 | \$28.490 | \$31.043 | \$31.464 | \$31.937 | \$29.841 | \$30.714 |
| TTF | \$36.580 | \$38.693 | \$39.324 | \$39.186 | \$38.248 | \$38.118 | \$38.328 | \$38.320 | \$38.459 | \$38.696 | \$38.336 | \$39.006 |
| TTF-HHub | \$30.605 | \$32.360 | \$33.177 | \$33.626 | \$33.487 | \$33.432 | \$33.583 | \$33.498 | \$33.623 | \$33.898 | \$33.472 | \$33.825 |
| NBP | \$35.108 | \$39.352 | \$40.478 | \$39.469 | \$36.931 | \$34.386 | \$33.586 | \$33.150 | \$33.223 | \$33.467 | \$33.323 | \$36.259 |
| NBP-HHub | \$29.133 | \$33.019 | \$34.331 | \$33.909 | \$32.170 | \$29.700 | \$28.841 | \$28.328 | \$28.387 | \$28.669 | \$28.459 | \$31.078 |



Weather Storage Model - Next 4 Week Forecast





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