

| | Current | Δ from YD | Δ from 7D Avg |
|----------------|---------|-----------|---------------|
| Nat Gas Prompt | \$ 6.31 | ▲ \$ 0.62 | ▲ \$ 0.78 |

| | Current | Δ from YD | Δ from 7D Avg |
|------------|----------|-------------|---------------|
| WTI Prompt | \$ 86.70 | ▼ \$ (1.20) | ▼ \$ (0.5) |

| | Current | Δ from YD | Δ from 7D Avg |
|--------------|----------|-------------|---------------|
| Brent Prompt | \$ 94.69 | ▼ \$ (1.08) | ▼ \$ (0.6) |

Page Menu

[Short-term Weather Model Outlooks](#)

[Lower 48 Component Models](#)

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

[Weather Model Storage Projection](#)

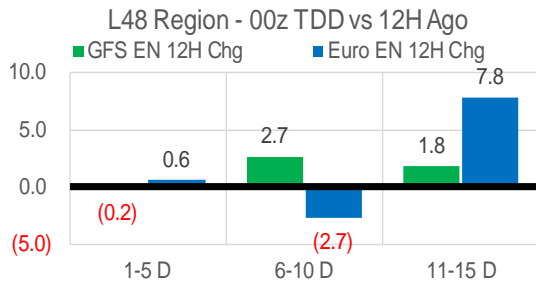
[Supply – Demand Trends](#)

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

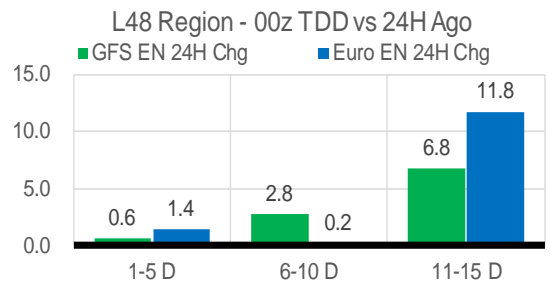
[Nat Gas Futures Open Interest](#)

[Price Summary](#)

Vs. 12H Ago



Vs. 24H Ago



| | Current | Δ from YD | Δ from 7D Avg |
|-------------------|---------|-----------|---------------|
| US Dry Production | 101.9 | ▲ 0.44 | ▲ 0.49 |

| | Current | Δ from YD | Δ from 7D Avg |
|----------------|---------|-----------|---------------|
| US Power Burns | 29.3 | ▲ 0.24 | ▼ -0.28 |

| | Current | Δ from YD | Δ from 7D Avg |
|------------|---------|-----------|---------------|
| US ResComm | 16.0 | ▼ -3.01 | ▼ -2.63 |

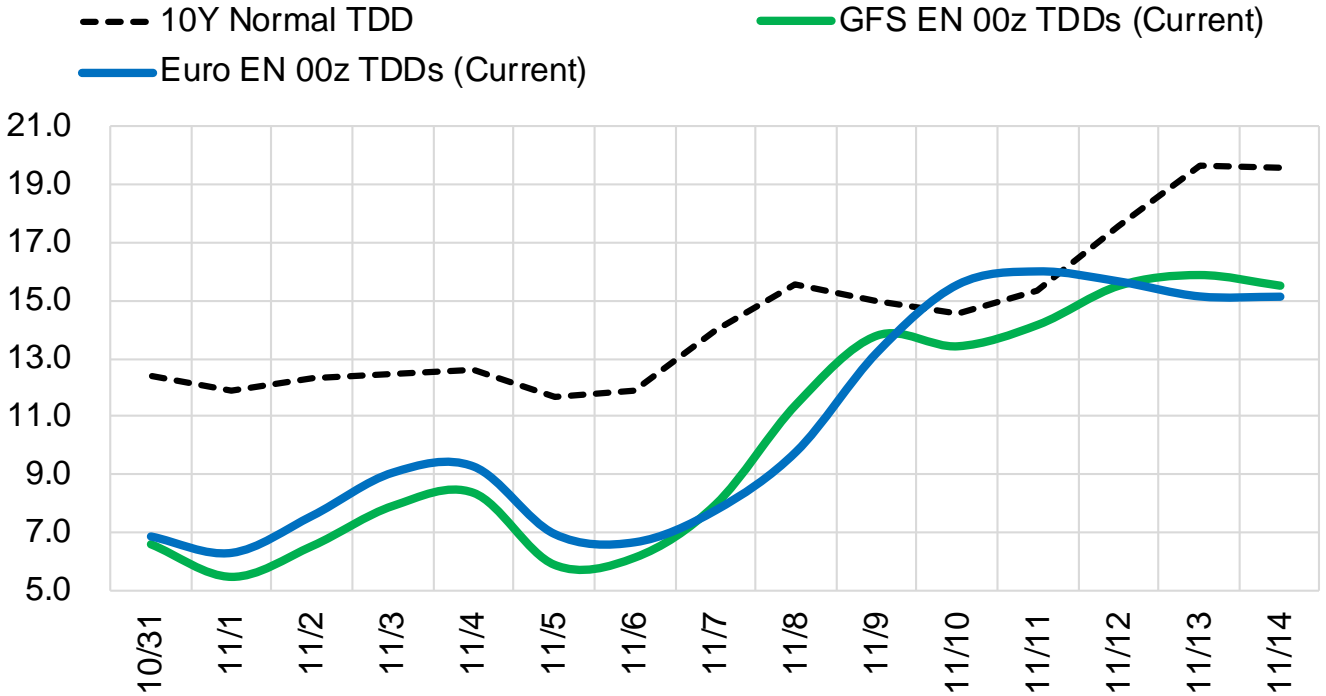
| | Current | Δ from YD | Δ from 7D Avg |
|------------------|---------|-----------|---------------|
| Canadian Imports | 5.6 | ▼ -0.21 | ▲ 0.28 |

| | Current | Δ from YD | Δ from 7D Avg |
|-----------------|---------|-----------|---------------|
| Net LNG Exports | 12.5 | ▲ 0.20 | ▲ 0.72 |

| | Current | Δ from YD | Δ from 7D Avg |
|-----------------|---------|-----------|---------------|
| Mexican Exports | 6.2 | ▲ 0.06 | ▼ -0.18 |

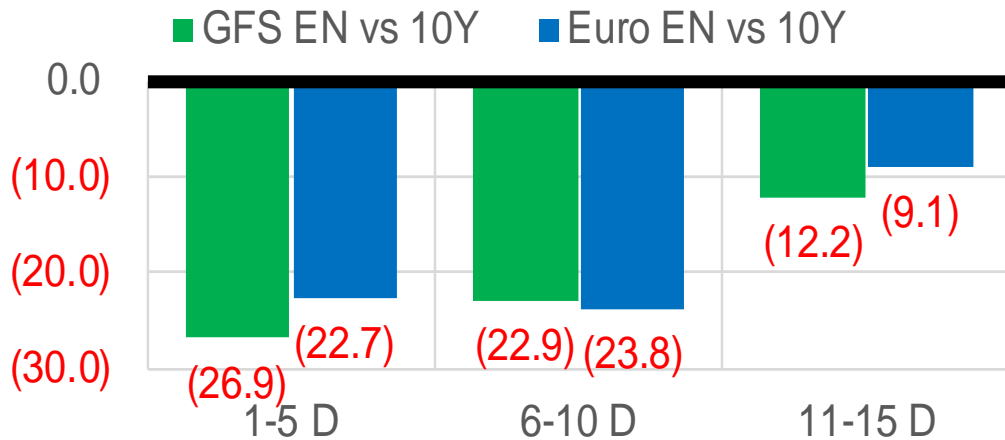
Short-term Weather Model Outlooks (00z)

L48 Region



Vs. 10Y Normal

L48 Region - 00z TDD vs 10Y Normal



Source: WSI , Bloomberg

Lower 48 Component Models

Daily Balances

| | 25-Oct | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct | DoD | vs. 7D |
|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------|--------|
| Lower 48 Dry Production | 100.8 | 100.9 | 101.5 | 102.0 | 101.6 | 101.5 | 101.9 | ▲ 0.4 | ▲ 0.5 |
| Canadian Imports | 5.2 | 5.2 | 5.3 | 5.1 | 5.1 | 5.8 | 5.6 | ▼ -0.2 | ▲ 0.3 |
| L48 Power | 30.9 | 30.3 | 29.6 | 29.3 | 28.2 | 29.1 | 29.3 | ▲ 0.2 | ▼ -0.2 |
| L48 Residential & Commercial | 15.0 | 18.9 | 21.7 | 21.7 | 20.2 | 19.0 | 16.0 | ▼ -3.0 | ▼ -3.4 |
| L48 Industrial | 21.9 | 22.4 | 22.4 | 22.3 | 22.0 | 21.8 | 21.7 | ▼ -0.1 | ▼ -0.4 |
| L48 Lease and Plant Fuel | 5.6 | 5.6 | 5.7 | 5.7 | 5.7 | 5.7 | 5.7 | ▼ 0.0 | ▲ 0.0 |
| L48 Pipeline Distribution | 2.8 | 3.0 | 3.2 | 3.1 | 3.0 | 3.0 | 2.8 | ▼ -0.2 | ▼ -0.2 |
| L48 Regional Gas Consumption | 76.2 | 80.2 | 82.6 | 82.1 | 79.0 | 78.5 | 75.4 | ▼ -3.1 | ▼ -4.3 |
| Net LNG Delivered | 11.79 | 11.73 | 10.89 | 12.27 | 12.41 | 12.32 | 12.52 | ▲ 0.2 | ▲ 0.6 |
| Total Mexican Exports | 6.3 | 6.5 | 6.5 | 6.5 | 6.4 | 6.1 | 6.2 | ▲ 0.1 | ▼ -0.2 |
| Implied Daily Storage Activity | 11.7 | 7.6 | 6.7 | 6.3 | 9.0 | 10.3 | 13.3 | | |
| EIA Reported Daily Storage Activity | | | | | | | | | |
| Daily Model Error | | | | | | | | | |

EIA Storage Week Balances

| | LY | | LW | | Current | | | |
|-------------------------------------|-------------|--------------|--------------|--------------|--------------|--------------|--------|--------|
| | 29-Oct | 30-Sep | 7-Oct | 14-Oct | 21-Oct | 28-Oct | WoW | vs. LY |
| Lower 48 Dry Production | 95.9 | 101.3 | 102.1 | 102.0 | 100.6 | 101.3 | ▲ 0.6 | ▲ 5.4 |
| Canadian Imports | 5.6 | 6.2 | 6.0 | 5.5 | 6.1 | 5.3 | ▼ -0.8 | ▼ -0.3 |
| L48 Power | 29.4 | 31.6 | 30.6 | 30.8 | 30.8 | 28.9 | ▼ -1.9 | -0.5 |
| L48 Residential & Commercial | 17.3 | 11.9 | 13.0 | 14.8 | 21.0 | 16.0 | ▼ -5.0 | -1.3 |
| L48 Industrial | 20.8 | 20.0 | 20.9 | 20.3 | 20.2 | 21.7 | ▲ 1.5 | 0.9 |
| L48 Lease and Plant Fuel | 5.4 | 5.6 | 5.7 | 5.7 | 5.6 | 5.7 | ▲ 0.0 | 0.3 |
| L48 Pipeline Distribution | 2.9 | 2.7 | 2.7 | 2.8 | 3.2 | 2.8 | ▼ -0.4 | -0.1 |
| L48 Regional Gas Consumption | 75.6 | 71.8 | 72.9 | 74.4 | 80.8 | 75.0 | ▼ -5.9 | ▼ -0.7 |
| Net LNG Exports | 10.8 | 11.8 | 11.0 | 11.0 | 11.5 | 11.4 | ▼ -0.1 | ▲ 0.6 |
| Total Mexican Exports | 6.9 | 6.9 | 6.7 | 6.6 | 6.7 | 6.4 | ▼ -0.3 | ▼ -0.5 |
| Implied Daily Storage Activity | 8.3 | 17.0 | 17.5 | 15.5 | 7.7 | 13.9 | 6.3 | 5.7 |
| EIA Reported Daily Storage Activity | 9.0 | 18.4 | 17.9 | 15.9 | 7.4 | | | |
| Daily Model Error | -0.7 | -1.4 | -0.4 | -0.4 | 0.2 | | | |

Monthly Balances

| | 2Yr Ago | LY | | MTD | | | | | |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|--------------|--------------|--------|--------|
| | Oct-20 | Oct-21 | Jun-22 | Jul-22 | Aug-22 | Sep-22 | Oct-22 | MoM | vs. LY |
| Lower 48 Dry Production | 88.5 | 95.4 | 97.3 | 97.7 | 99.0 | 100.9 | 101.5 | ▲ 0.7 | ▲ 6.1 |
| Canadian Imports | 4.3 | 5.4 | 5.7 | 5.9 | 5.4 | 5.9 | 5.7 | ▼ -0.3 | ▲ 0.3 |
| L48 Power | 30.6 | 30.4 | 38.3 | 44.3 | 43.1 | 36.9 | 30.1 | ▼ -6.7 | ▼ -0.3 |
| L48 Residential & Commercial | 15.5 | 12.6 | 8.9 | 8.3 | 8.0 | 9.0 | 16.7 | ▲ 7.7 | ▲ 4.2 |
| L48 Industrial | 22.7 | 21.7 | 19.1 | 19.8 | 21.1 | 20.9 | 20.9 | ▼ -0.1 | ▼ -0.8 |
| L48 Lease and Plant Fuel | 4.8 | 5.3 | 5.5 | 5.5 | 5.5 | 5.6 | 5.7 | ▲ 0.1 | ▲ 0.3 |
| L48 Pipeline Distribution | 2.5 | 2.7 | 2.9 | 3.1 | 3.0 | 2.8 | 2.9 | ▲ 0.1 | ▲ 0.2 |
| L48 Regional Gas Consumption | 76.1 | 72.7 | 74.6 | 81.0 | 80.8 | 75.2 | 76.3 | ▲ 1.1 | ▲ 3.6 |
| Net LNG Exports | 8.0 | 10.6 | 11.2 | 10.9 | 11.0 | 11.5 | 11.3 | ▼ -0.2 | ▲ 0.7 |
| Total Mexican Exports | 6.0 | 6.6 | 7.1 | 7.0 | 6.9 | 6.7 | 6.6 | ▼ -0.1 | ▼ -0.1 |
| Implied Daily Storage Activity | 2.6 | 10.9 | 10.0 | 4.7 | 5.7 | 13.4 | 13.0 | | |
| EIA Reported Daily Storage Activity | | | | | | | | | |
| Daily Model Error | | | | | 0.0 | | | | |

Source: Bloomberg, analytix.ai

Daily Average Generation Data

Nuclear Generation Daily Average - GWh (NRC)

| | 23-Oct | 24-Oct | 25-Oct | 26-Oct | 27-Oct | 28-Oct | 29-Oct | DoD | vs. 7D |
|-------------------------------|--------|--------|--------|--------|--------|--------|--------|-----|--------|
| NRC Nuclear Daily Output | 74.0 | 74.2 | 74.3 | 74.6 | 75.4 | 76.6 | 76.6 | 0.0 | 1.8 |
| 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 | 30.8 | 30.7 | 30.6 | 30.3 | 29.5 | 28.3 | 28.3 | 0.0 | -1.8 |
| NRC % Nuclear Cap Utilization | 75.3 | 75.4 | 75.5 | 75.8 | 76.6 | 77.9 | 77.9 | 0.0 | 1.8 |

Wind Generation Daily Average - MWh (EIA)

| | 23-Oct | 24-Oct | 25-Oct | 26-Oct | 27-Oct | 28-Oct | 29-Oct | DoD | vs. 7D |
|------------|--------|--------|--------|--------|--------|--------|--------|-----|--------|
| CALI Wind | 2460 | 779 | 1558 | 2755 | 1252 | 445 | 445 | 0 | -1097 |
| TEXAS Wind | 24198 | 18056 | 9223 | 11743 | 18095 | 15183 | 15183 | 0 | -900 |
| US Wind | 83510 | 67333 | 49567 | 48539 | 62784 | 43203 | 43203 | 0 | -15953 |

Generation Daily Average - MWh (EIA)

| | 23-Oct | 24-Oct | 25-Oct | 26-Oct | 27-Oct | 28-Oct | 29-Oct | DoD | vs. 7D |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------|-------------|
| US Wind | 83510 | 67333 | 49567 | 48539 | 62784 | 43203 | 43203 | 0 | -15953 |
| US Solar | 11952 | 12544 | 13489 | 12627 | 13203 | 11463 | 11463 | 0 | -1083 |
| US Petroleum | 895 | 938 | 949 | 952 | 966 | 964 | 964 | 0 | 20 |
| US Other | 9559 | 8843 | 8824 | 7952 | 8515 | 9548 | 9548 | 0 | 675 |
| US Coal | 59355 | 70036 | 74239 | 76736 | 73386 | 80614 | 80614 | 0 | 8220 |
| US Nuke | 77044 | 77609 | 77929 | 78044 | 79172 | 80235 | 80235 | 0 | 1897 |
| US Hydro | 16850 | 19289 | 20223 | 20119 | 20292 | 20678 | 20678 | 0 | 1103 |
| US Gas | 128637 | 155953 | 159701 | 157194 | 147907 | 157044 | 157044 | 0 | 5971 |

See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

Storage Week Average Generation Data

Nuclear Generation Weekly Average - GWh (NRC)

| | 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 Average - MWh (EIA)

| | 29-Oct | 30-Sep | 7-Oct | 14-Oct | 21-Oct | 28-Oct | WoW | 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 | 45156 | 64739 | 19583 | -3.7 |
| | | | | | | 0.8 | 43% | |

Generation Weekly Average - MWh (EIA)

| | 29-Oct | 30-Sep | 7-Oct | 14-Oct | 21-Oct | 28-Oct | LY | Current | WoW | WoW Bcf/d Impact |
|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------|-----|------------------|
| US Wind | 53987 | 40606 | 32707 | 41063 | 45156 | 64739 | 19583 | | | -3.7 |
| US Solar | 10171 | 16636 | 15455 | 14503 | 14543 | 13209 | -1334 | | | 0.2 |
| US Petroleum | 907 | 379 | 664 | 842 | 957 | 933 | -25 | | | 0.0 |
| US Other | 10232 | 11165 | 10786 | 11233 | 11769 | 8880 | -2889 | | | 0.5 |
| US Coal | 75374 | 77592 | 74744 | 76322 | 79517 | 69842 | -9675 | | | 1.8 |
| US Nuke | 74308 | 86665 | 83242 | 77235 | 76450 | 77712 | 1263 | | | -0.2 |
| US Hydro | 23812 | 23101 | 21917 | 20001 | 19332 | 19093 | -239 | | | 0.0 |
| US Gas | 155996 | 171876 | 171116 | 170286 | 162048 | 147330 | -14718 | | | -2.8 |

See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

Monthly Average Generation Data

Nuclear Generation Monthly Average - GWh (NRC)

| | 2Yr Ago | | LY | | | | MTD | | |
|-------------------------------|--------------------------|--------------|--------|--------|--------|--------|--------------|-----------------|------------------|
| | Same 30 days | Same 30 days | Jul-22 | Aug-22 | Sep-22 | Oct-22 | Last 30 days | MoM (MTD vs LY) | Last 30 days YoY |
| | NRC Nuclear Daily Output | 76.5 | 75.2 | 90.6 | 90.5 | 86.2 | 76.2 | 76.1 | -10.0 |
| 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 | 28.4 | 29.7 | 14.3 | 14.3 | 18.7 | 28.7 | 28.8 | 10.0 | -0.9 |
| NRC % Nuclear Cap Utilization | 77.8 | 76.5 | 92.1 | 92.1 | 87.7 | 77.5 | 77.4 | -10.2 | 0.9 |

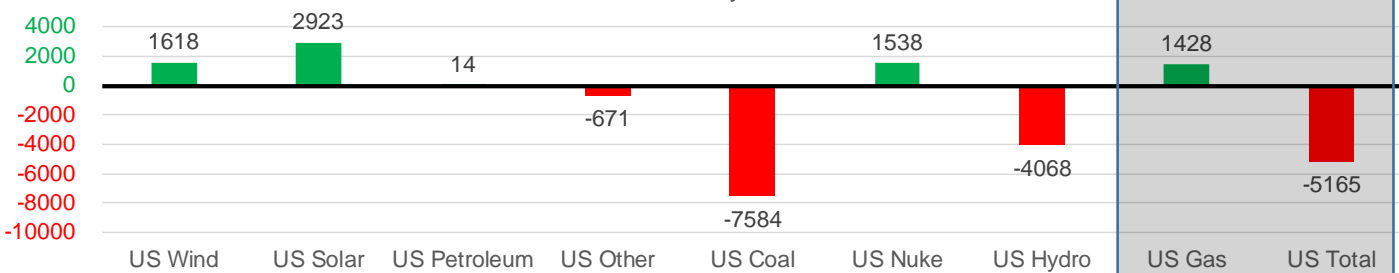
Wind Generation Monthly Average - MWh (EIA)

| | 2Yr Ago | | LY | | | | MTD | | |
|------------|--------------|--------------|--------|--------|--------|--------|--------------|-----------------|------------------|
| | Same 30 days | Same 30 days | Jul-22 | Aug-22 | Sep-22 | Oct-22 | Last 30 days | MoM (MTD vs LY) | Last 30 days YoY |
| | CALI Wind | 1350 | 1814 | 2719 | 2028 | 1608 | 1224 | 1205 | -384 |
| TEXAS Wind | 9836 | 11831 | 11765 | 8440 | 7993 | 10945 | 11022 | 2952 | -809 |
| US Wind | 38954 | 44125 | 39701 | 33222 | 38117 | 45566 | 45742 | 7449 | 1618 |

Generation Monthly Average - MWh (EIA)

| | 2Yr Ago | | LY | | | | MTD | | |
|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------|------------------|
| | Same 30 days | Same 30 days | Jul-22 | Aug-22 | Sep-22 | Oct-22 | Last 30 days | MoM (MTD vs LY) | Last 30 days YoY |
| | US Wind | 38954 | 44125 | 39701 | 33222 | 38117 | 45566 | 45742 | ▲ 176.2 |
| US Solar | 8296 | 11023 | 18617 | 16962 | 16163 | 14016 | 13946 | ▼ -70.7 | ▲ 2923 |
| US Petroleum | 817 | 874 | 1252 | 1251 | 864 | 875 | 888 | ▲ 13 | ▲ 14 |
| US Other | 8300 | 11184 | 10156 | 10543 | 10467 | 10517 | 10514 | ▼ -3 | ▼ -671 |
| US Coal | 80457 | 83718 | 119788 | 117203 | 92002 | 75836 | 76134 | ▲ 298 | ▼ -7584 |
| US Nuke | 79856 | 76745 | 92906 | 92976 | 89057 | 78170 | 78283 | ▲ 113 | ▲ 1538 |
| US Hydro | 25346 | 24080 | 34227 | 30192 | 25202 | 20011 | 20012 | ▲ 2 | ▼ -4068 |
| US Gas | 162322 | 160947 | 235864 | 233739 | 199958 | 161715 | 162375 | ▲ 529 | ▲ 1428 |
| US Total | 402727 | 412739 | 551987 | 535696 | 470459 | 406902 | 407574 | ▲ 881 | ▼ -5165 |

Last 30 days YoY



See National Wind and Nuclear daily charts

Source: Bloomberg, analytix.ai

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 | 14.1 | 98 |
| East | 1.5 | 2.8 | 4.3 | 30 |
| Midwest | 4.6 | 0.9 | 5.5 | 38 |
| Mountain | 4.7 | -4.2 | 0.5 | 3 |
| South Central | 4.2 | 0.2 | 4.4 | 30 |
| Pacific | 0.0 | -0.6 | -0.5 | -4 |

*Adjustment Factor is calculated based on historical regional deltas

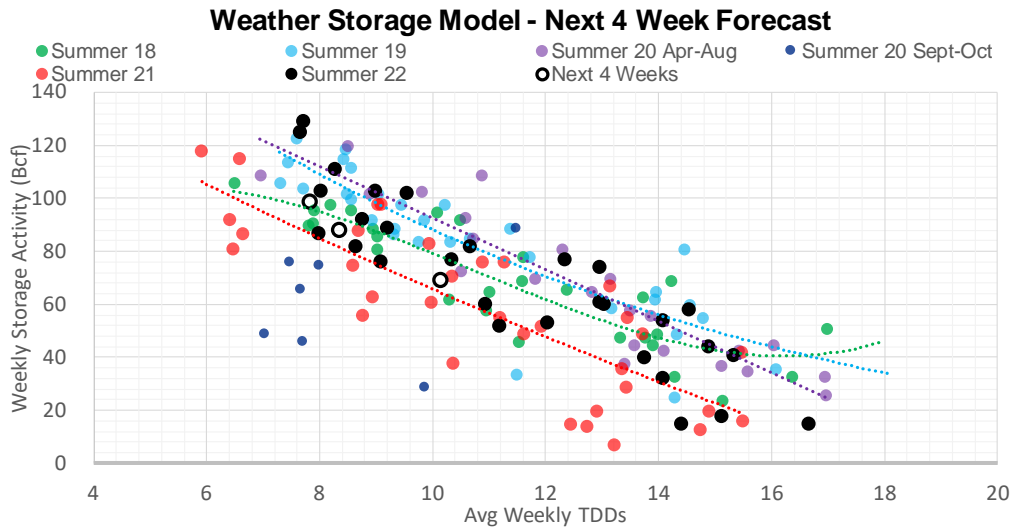
U.S. underground natural gas storage facilities by type (July 2015)



Weather Model Storage Projection

Next report
and beyond

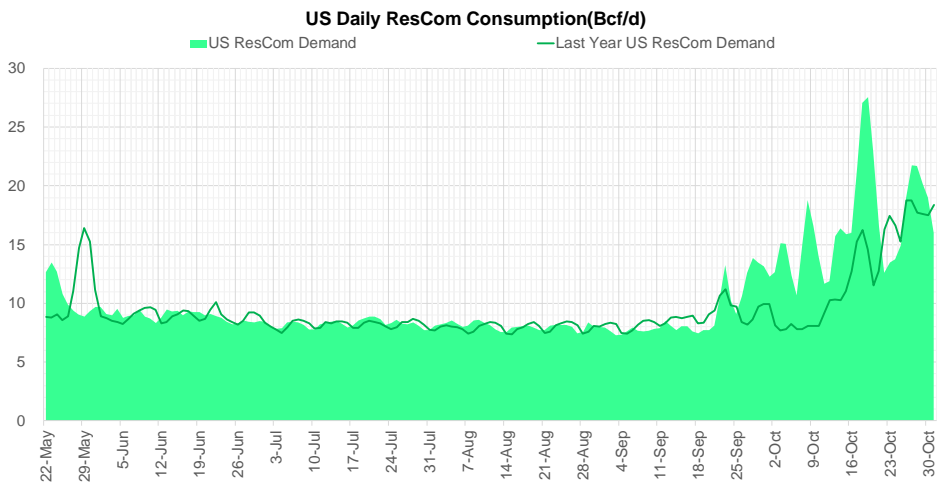
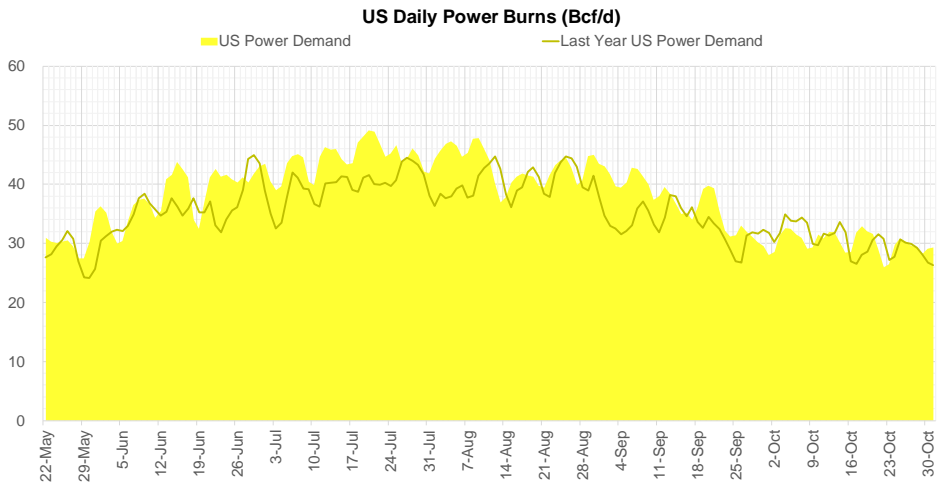
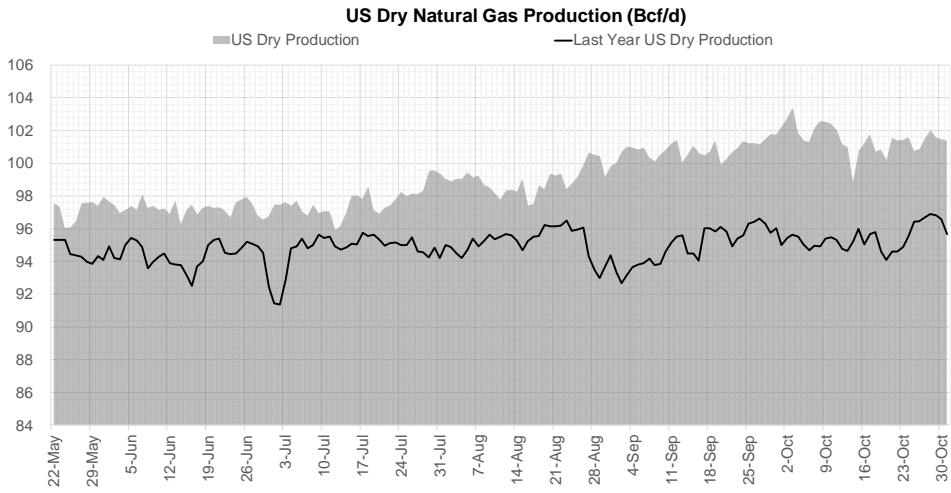
| Week Ending | GWDDs | Week Storage Projection |
|-------------|-------|-------------------------|
| 28-Oct | 7.9 | 98 |
| 04-Nov | 8.4 | 88 |
| 11-Nov | 10.2 | 69 |
| 18-Nov | #N/A | #N/A |



Go to larger image



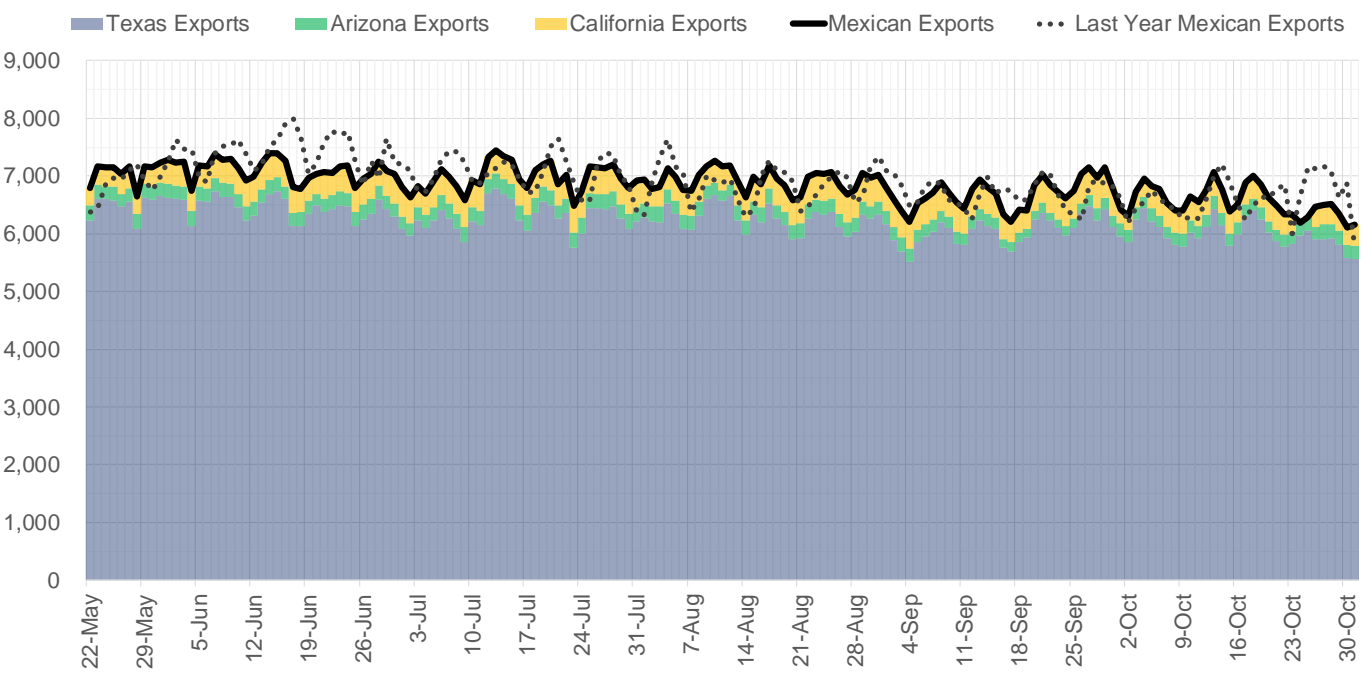
Supply – Demand Trends



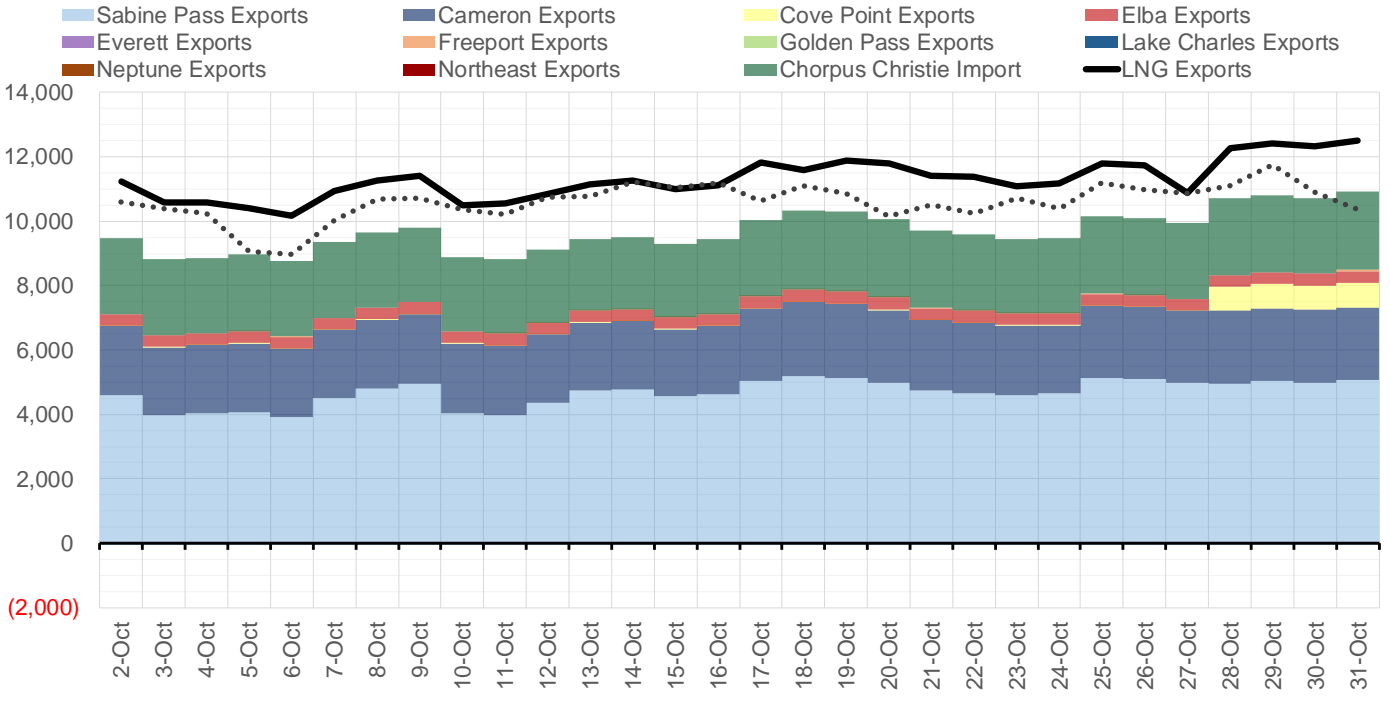
Source: Bloomberg

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.

Mexican Exports (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 and ICE Combined

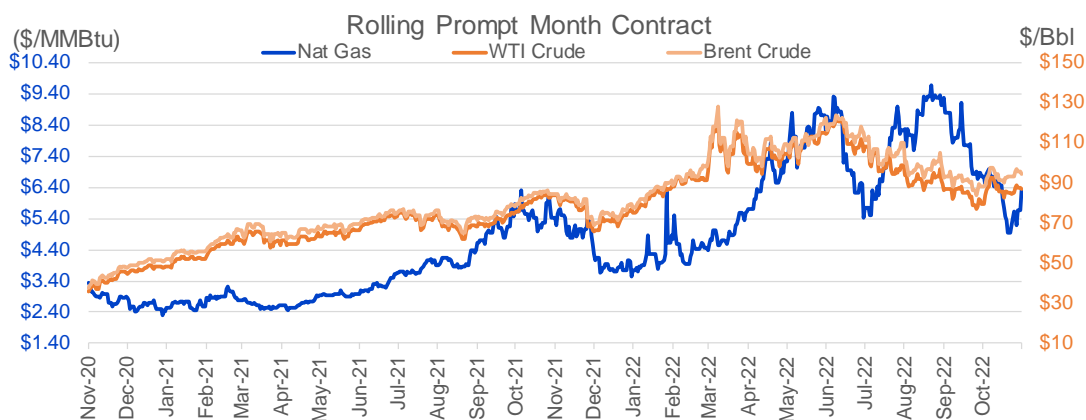
| CONTRACT MONTH | CONTRACT YEAR | PUT/CALL | STRIKE | CUMULATIVE VOL | CONTRACT MONTH | CONTRACT YEAR | PUT/CALL | STRIKE | CUMULATIVE OI |
|----------------|---------------|----------|--------|----------------|----------------|---------------|----------|--------|---------------|
| 12 | 2022 | P | 4.50 | 8992 | 12 | 2022 | P | 4.00 | 49947 |
| 12 | 2022 | C | 7.00 | 6637 | 12 | 2022 | P | 5.00 | 31864 |
| 12 | 2022 | P | 5.00 | 6303 | 5 | 2023 | P | 2.00 | 27519 |
| 3 | 2023 | C | 1.00 | 4050 | 12 | 2022 | P | 4.50 | 25334 |
| 3 | 2023 | P | 1.00 | 4050 | 12 | 2022 | P | 6.00 | 24794 |
| 12 | 2022 | P | 3.25 | 4002 | 1 | 2023 | C | 10.00 | 24763 |
| 12 | 2022 | C | 8.00 | 3846 | 10 | 2023 | P | 3.00 | 23294 |
| 12 | 2022 | P | 3.00 | 3606 | 4 | 2023 | P | 3.00 | 22568 |
| 12 | 2022 | P | 4.00 | 3574 | 3 | 2023 | C | 10.00 | 21848 |
| 12 | 2022 | P | 3.50 | 3422 | 12 | 2022 | C | 10.00 | 21579 |
| 12 | 2022 | P | 3.75 | 3335 | 12 | 2022 | P | 3.50 | 21527 |
| 12 | 2022 | P | 4.25 | 2808 | 3 | 2023 | P | 4.00 | 20838 |
| 1 | 2023 | C | 10.00 | 2791 | 2 | 2023 | C | 10.00 | 20429 |
| 12 | 2022 | C | 6.00 | 2635 | 4 | 2023 | P | 3.50 | 19750 |
| 12 | 2022 | P | 5.25 | 2518 | 4 | 2023 | P | 2.00 | 19409 |
| 5 | 2023 | C | 6.00 | 2040 | 1 | 2023 | P | 4.00 | 19317 |
| 1 | 2023 | C | 11.00 | 2011 | 10 | 2023 | P | 4.00 | 19286 |
| 5 | 2023 | C | 5.00 | 2010 | 3 | 2023 | C | 20.00 | 18865 |
| 12 | 2022 | P | 4.75 | 1917 | 10 | 2023 | P | 2.00 | 18710 |
| 12 | 2022 | C | 9.50 | 1891 | 10 | 2023 | P | 2.50 | 18490 |
| 12 | 2022 | C | 10.00 | 1458 | 12 | 2022 | C | 5.00 | 18279 |
| 1 | 2023 | P | 5.00 | 1349 | 3 | 2023 | P | 3.00 | 18232 |
| 4 | 2023 | P | 3.00 | 1300 | 5 | 2023 | P | 3.00 | 18138 |
| 4 | 2023 | P | 3.50 | 1300 | 6 | 2023 | P | 3.00 | 17735 |
| 1 | 2023 | P | 5.50 | 1257 | 12 | 2022 | P | 5.50 | 17706 |
| 12 | 2022 | P | 5.50 | 1244 | 1 | 2023 | P | 5.00 | 17687 |
| 3 | 2023 | C | 10.00 | 1225 | 12 | 2022 | P | 3.00 | 17582 |
| 12 | 2022 | C | 9.00 | 1131 | 4 | 2023 | P | 4.00 | 17502 |
| 12 | 2022 | C | 12.00 | 1101 | 12 | 2022 | C | 8.00 | 17426 |
| 1 | 2023 | P | 3.00 | 1051 | 9 | 2023 | P | 4.00 | 17186 |
| 4 | 2023 | P | 4.50 | 1050 | 5 | 2023 | P | 3.50 | 17069 |
| 3 | 2023 | C | 13.00 | 1000 | 3 | 2023 | C | 8.00 | 16678 |
| 1 | 2023 | C | 6.30 | 962 | 8 | 2023 | P | 3.00 | 16651 |
| 1 | 2023 | C | 5.95 | 950 | 10 | 2023 | P | 3.50 | 16568 |
| 2 | 2023 | P | 5.00 | 891 | 7 | 2023 | P | 3.00 | 16550 |
| 3 | 2023 | P | 5.00 | 879 | 9 | 2023 | P | 3.00 | 16550 |
| 1 | 2023 | P | 3.25 | 829 | 6 | 2023 | P | 3.50 | 16365 |
| 4 | 2023 | C | 5.00 | 810 | 1 | 2023 | P | 3.00 | 16357 |
| 5 | 2023 | P | 3.00 | 800 | 12 | 2022 | C | 4.00 | 16195 |
| 6 | 2023 | P | 3.00 | 800 | 8 | 2023 | P | 3.50 | 16101 |
| 2 | 2023 | P | 4.00 | 770 | 7 | 2023 | P | 3.50 | 16069 |
| 10 | 2023 | P | 3.00 | 751 | 9 | 2023 | P | 3.50 | 16059 |
| 4 | 2023 | P | 2.50 | 750 | 6 | 2023 | P | 2.00 | 16024 |
| 7 | 2023 | P | 3.00 | 750 | 6 | 2023 | P | 4.00 | 15941 |
| 8 | 2023 | P | 3.00 | 750 | 2 | 2023 | C | 8.00 | 15902 |
| 9 | 2023 | P | 3.00 | 750 | 7 | 2023 | P | 4.00 | 15849 |
| 12 | 2022 | P | 5.75 | 747 | 5 | 2023 | P | 2.50 | 15830 |
| 3 | 2023 | C | 8.00 | 745 | 5 | 2023 | P | 4.00 | 15623 |
| 12 | 2022 | P | 4.10 | 665 | 8 | 2023 | P | 4.00 | 15526 |
| | | | | | 3 | 2023 | P | 2.75 | 15450 |

Source: CME, ICE

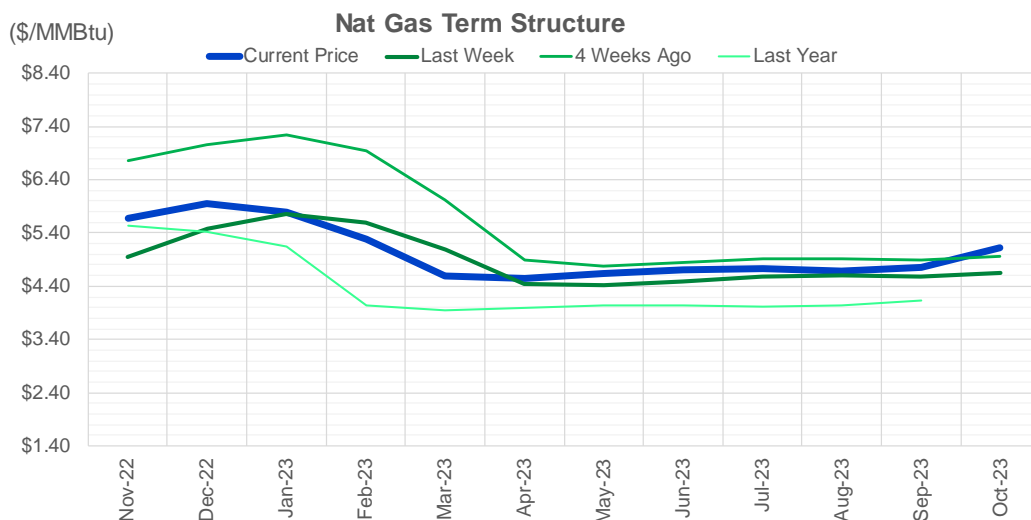
Nat Gas Futures Open Interest CME and ICE Combined

| CME Henry Hub Futures (10,000 MMBtu) | | | | ICE Henry Hub Futures Contract Equivalent (10,000 MM | | | |
|--------------------------------------|---------|--------|--------------|--|---------|-------|--------------|
| | Current | Prior | Daily Change | | Current | Prior | Daily Change |
| DEC 22 | 105952 | 487 | 105465 | DEC 22 | 77718 | 83367 | -5649 |
| JAN 23 | 139107 | 103225 | 35882 | JAN 23 | 73115 | 78339 | -5224 |
| FEB 23 | 58760 | 137903 | -79143 | FEB 23 | 66985 | 74288 | -7303 |
| MAR 23 | 97232 | 58175 | 39057 | MAR 23 | 59733 | 66800 | -7067 |
| APR 23 | 76869 | 96182 | -19313 | APR 23 | 57187 | 59638 | -2451 |
| MAY 23 | 86371 | 77704 | 8667 | MAY 23 | 59719 | 57156 | 2563 |
| JUN 23 | 23837 | 86967 | -63130 | JUN 23 | 49117 | 59588 | -10472 |
| JUL 23 | 33817 | 23875 | 9942 | JUL 23 | 49057 | 48998 | 59 |
| AUG 23 | 22387 | 34078 | -11691 | AUG 23 | 47269 | 48974 | -1705 |
| SEP 23 | 30015 | 22439 | 7576 | SEP 23 | 45355 | 47341 | -1986 |
| OCT 23 | 51346 | 30175 | 21171 | OCT 23 | 56613 | 44826 | 11787 |
| NOV 23 | 22155 | 51542 | -29387 | NOV 23 | 47349 | 56181 | -8833 |
| DEC 23 | 26613 | 22924 | 3689 | DEC 23 | 41788 | 47416 | -5628 |
| JAN 24 | 37025 | 26795 | 10230 | JAN 24 | 45929 | 41681 | 4248 |
| FEB 24 | 10537 | 36609 | -26072 | FEB 24 | 30721 | 45704 | -14983 |
| MAR 24 | 22301 | 10549 | 11752 | MAR 24 | 36815 | 31345 | 5470 |
| APR 24 | 20650 | 22152 | -1502 | APR 24 | 30409 | 37045 | -6636 |
| MAY 24 | 8767 | 20584 | -11817 | MAY 24 | 29144 | 30466 | -1322 |
| JUN 24 | 3219 | 8743 | -5524 | JUN 24 | 26199 | 29165 | -2967 |
| JUL 24 | 4309 | 3232 | 1077 | JUL 24 | 25518 | 26215 | -697 |
| AUG 24 | 3972 | 4321 | -349 | AUG 24 | 25025 | 25547 | -523 |
| SEP 24 | 2616 | 3976 | -1360 | SEP 24 | 24877 | 25054 | -177 |
| OCT 24 | 9022 | 2620 | 6402 | OCT 24 | 29192 | 24902 | 4290 |
| NOV 24 | 4883 | 9024 | -4141 | NOV 24 | 26258 | 29174 | -2916 |
| DEC 24 | 8634 | 4883 | 3751 | DEC 24 | 30149 | 26281 | 3868 |
| JAN 25 | 17790 | 8633 | 9157 | JAN 25 | 23086 | 30196 | -7110 |
| FEB 25 | 1845 | 17789 | -15944 | FEB 25 | 15710 | 23041 | -7332 |
| MAR 25 | 6099 | 1845 | 4254 | MAR 25 | 17707 | 15729 | 1978 |
| APR 25 | 5536 | 6099 | -563 | APR 25 | 16508 | 18079 | -1571 |
| MAY 25 | 2585 | 5777 | -3192 | MAY 25 | 15117 | 16523 | -1406 |

Source: CME, ICE



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.

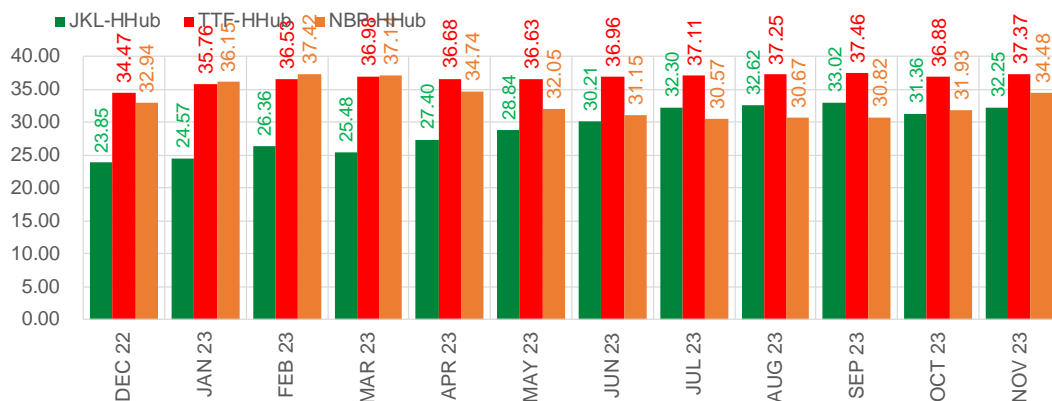
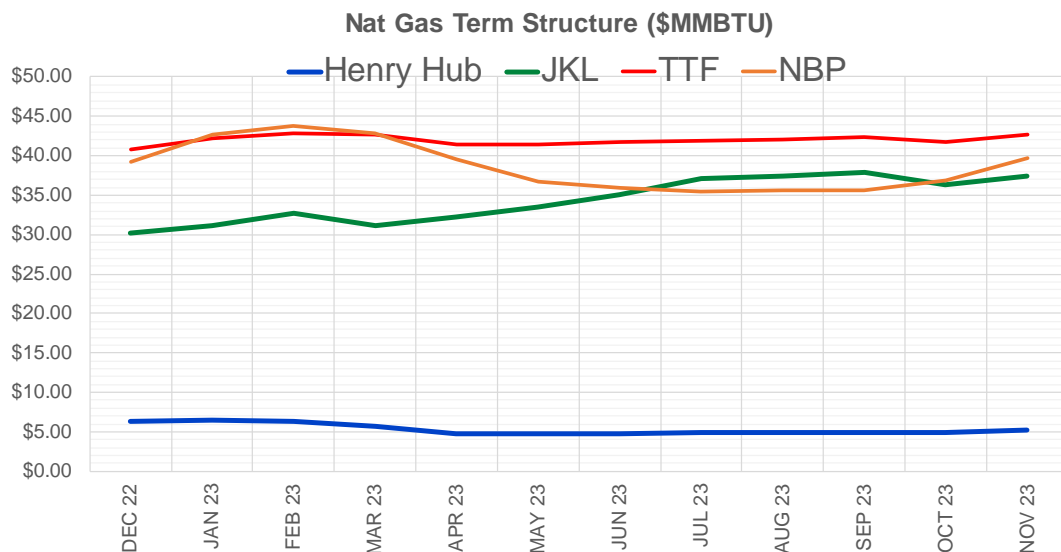


| | Nov-22 | Dec-22 | Jan-23 | Feb-23 | Mar-23 | Apr-23 | May-23 | Jun-23 | Jul-23 | Aug-23 | Sep-23 | Oct-23 |
|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Current Price | \$5.684 | \$5.953 | \$5.794 | \$5.276 | \$4.601 | \$4.556 | \$4.630 | \$4.708 | \$4.727 | \$4.688 | \$4.756 | \$5.116 |
| Last Week | \$4.959 | \$5.472 | \$5.754 | \$5.587 | \$5.086 | \$4.448 | \$4.417 | \$4.494 | \$4.579 | \$4.604 | \$4.574 | \$4.648 |
| vs. Last Week | \$0.725 | \$0.481 | \$0.040 | -\$0.311 | -\$0.485 | \$0.108 | \$0.213 | \$0.214 | \$0.148 | \$0.084 | \$0.182 | \$0.468 |
| 4 Weeks Ago | \$6.766 | \$7.065 | \$7.247 | \$6.937 | \$6.028 | \$4.887 | \$4.784 | \$4.848 | \$4.914 | \$4.924 | \$4.894 | \$4.965 |
| vs. 4 Weeks Ago | -\$1.082 | -\$1.112 | -\$1.453 | -\$1.661 | -\$1.427 | -\$0.331 | -\$0.154 | -\$0.140 | -\$0.187 | -\$0.236 | -\$0.138 | \$0.151 |
| Last Year | \$5.426 | \$5.529 | \$5.433 | \$5.145 | \$4.047 | \$3.955 | \$3.989 | \$4.031 | \$4.035 | \$4.018 | \$4.050 | \$4.140 |
| vs. Last Year | \$0.258 | \$0.424 | \$0.361 | \$0.131 | \$0.554 | \$0.601 | \$0.641 | \$0.677 | \$0.692 | \$0.670 | \$0.706 | \$0.976 |

| | Units | Cash Settled | Prompt Settle | Cash to Prompt |
|-----------------------|----------|--------------|---------------|----------------|
| AGT Citygate | \$/MMBtu | 5.00 | 7.04 | 2.04 |
| TETCO M3 | \$/MMBtu | 3.21 | 4.43 | 1.22 |
| FGT Zone 3 | \$/MMBtu | 3.35 | 5.34 | 1.99 |
| Zone 6 NY | \$/MMBtu | 3.35 | 4.68 | 1.33 |
| Chicago Citygate | \$/MMBtu | 4.50 | 4.59 | 0.09 |
| Michcon | \$/MMBtu | 4.43 | 4.51 | 0.08 |
| Columbia TCO Pool | \$/MMBtu | 3.47 | 4.17 | 0.70 |
| Ventura | \$/MMBtu | 4.54 | 4.74 | 0.20 |
| Rockies/Opal | \$/MMBtu | 5.67 | 4.41 | -1.26 |
| El Paso Permian Basin | \$/MMBtu | 3.10 | 2.16 | -0.94 |
| Socal Citygate | \$/MMBtu | 5.75 | 5.16 | -0.59 |
| Malin | \$/MMBtu | 5.58 | 4.82 | -0.76 |
| Houston Ship Channel | \$/MMBtu | 4.63 | 4.33 | -0.30 |
| Henry Hub Cash | \$/MMBtu | 4.85 | 4.29 | -0.56 |
| AECO Cash | C\$/GJ | 1.59 | 3.64 | 2.05 |
| Station2 Cash | C\$/GJ | 1.34 | 4.83 | 3.49 |
| Dawn Cash | C\$/GJ | 4.54 | 4.62 | 0.08 |

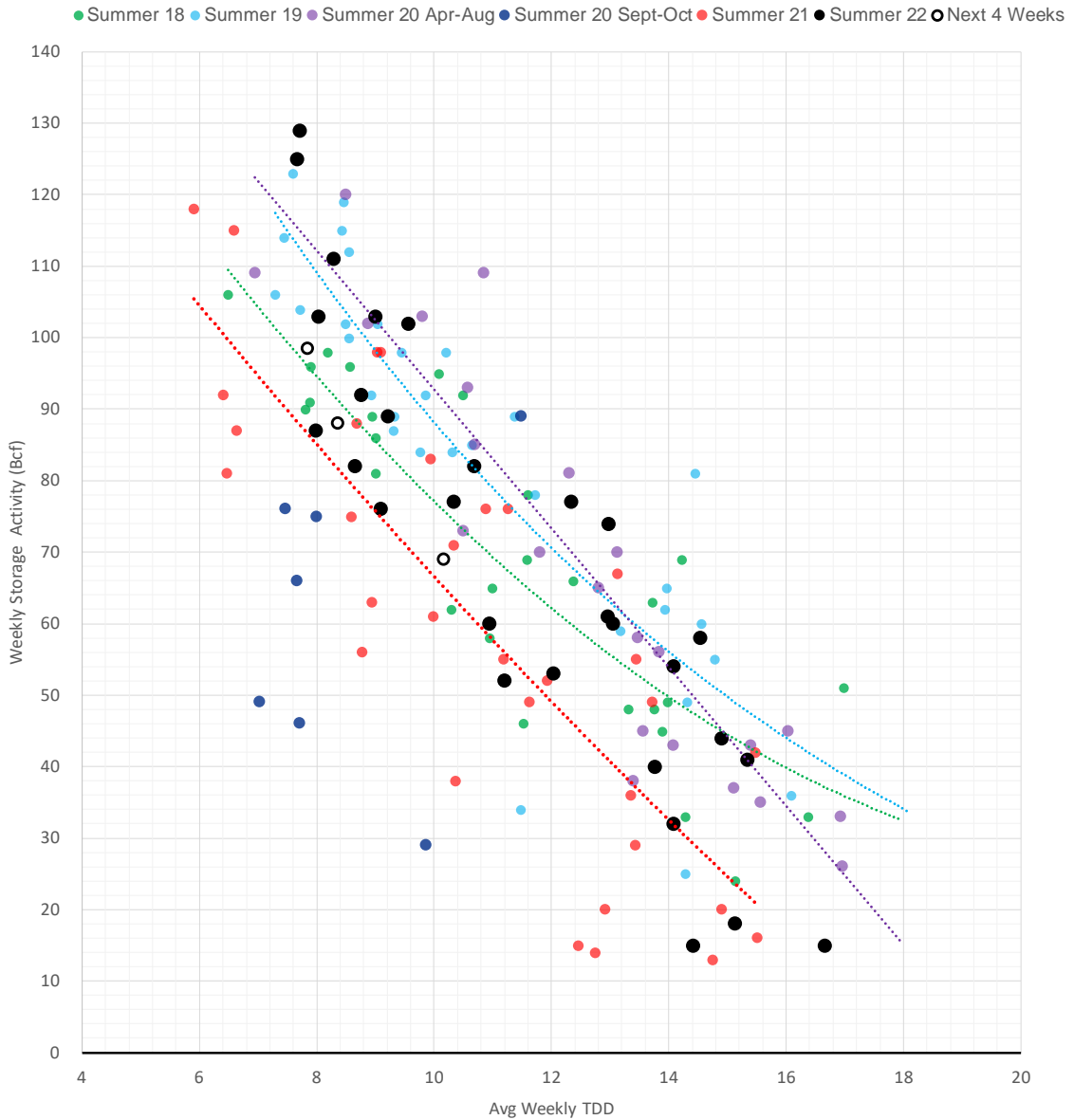
Source: CME, Bloomberg

| | Units | Current Price | vs. Last Week | vs. 4 Weeks Ago | vs. 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 | ▼ -1.505 |
| NatGas Apr22/Oct22 | \$/MMBtu | 1.532 | ▲ 0.000 | ▲ 0.000 | ▲ 1.529 |
| WTI Crude | \$/Bbl | 87.90 | ▲ 2.850 | ▲ 8.410 | ▲ 4.330 |
| Brent Crude | \$/Bbl | 95.77 | ▲ 2.270 | ▲ 7.810 | ▲ 11.390 |
| Fuel Oil, NY Harbour 1% | \$/Bbl | 97.18 | ▲ 0.000 | ▲ 0.000 | ▲ 0.000 |
| Heating Oil | cents/Gallon | 454.98 | ▲ 71.750 | ▲ 118.080 | ▲ 205.340 |
| Propane, Mt. Bel | cents/Gallon | 0.86 | ▲ 0.010 | ▼ -0.137 | ▼ -0.590 |
| Ethane, Mt. Bel | cents/Gallon | 0.40 | ▲ 0.005 | ▼ -0.061 | ▼ -0.032 |
| 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 | | | |

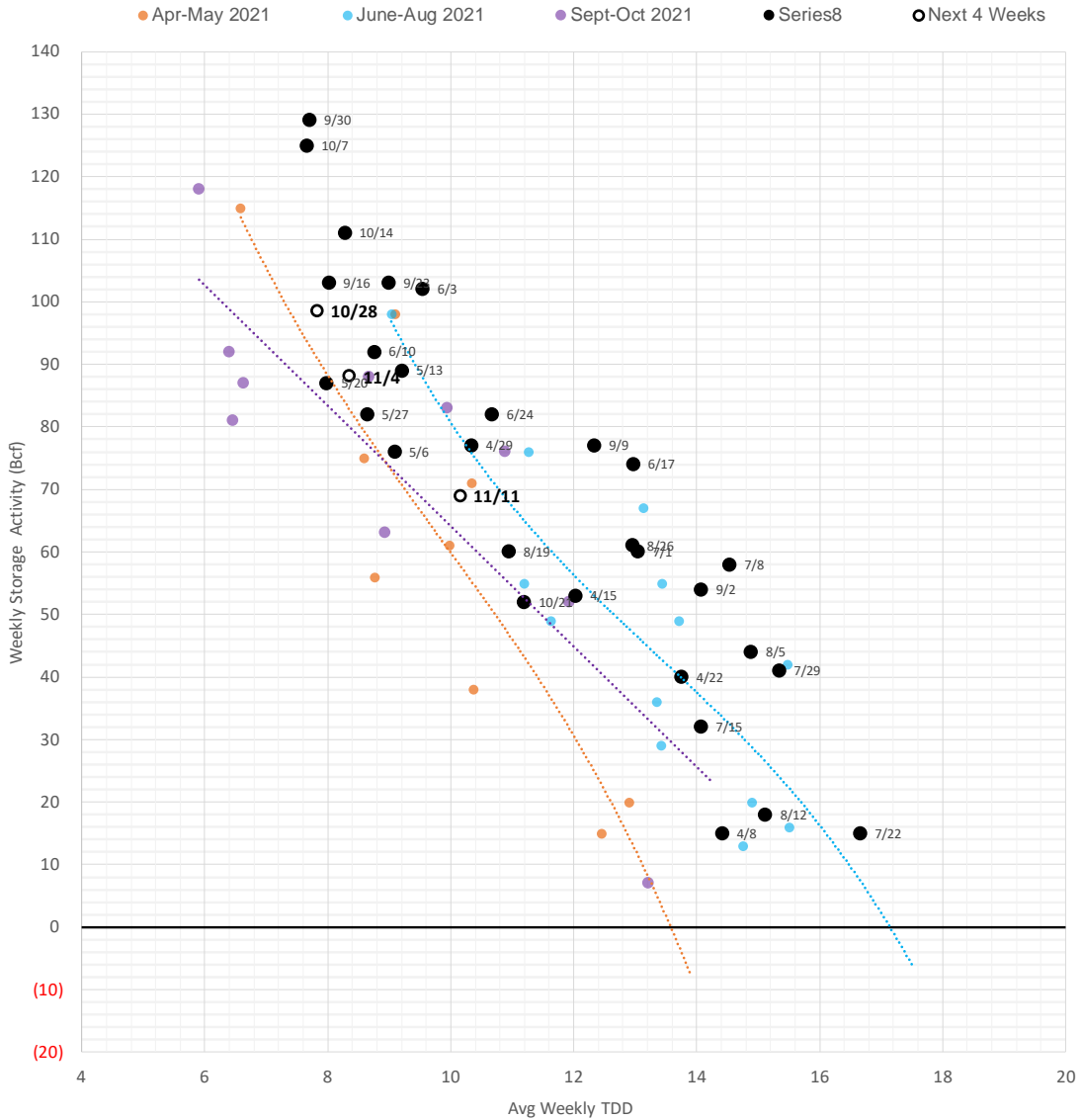


| | DEC 22 | JAN 23 | FEB 23 | MAR 23 | APR 23 | MAY 23 | JUN 23 | JUL 23 | AUG 23 | SEP 23 | OCT 23 | NOV 23 |
|------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Henry Hub | \$6.306 | \$6.515 | \$6.317 | \$5.639 | \$4.794 | \$4.729 | \$4.792 | \$4.866 | \$4.879 | \$4.847 | \$4.912 | \$5.239 |
| JKL | \$30.160 | \$31.085 | \$32.675 | \$31.120 | \$32.195 | \$33.565 | \$35.005 | \$37.170 | \$37.500 | \$37.870 | \$36.270 | \$37.490 |
| JKL-HHHub | \$23.854 | \$24.570 | \$26.358 | \$25.481 | \$27.401 | \$28.836 | \$30.213 | \$32.304 | \$32.621 | \$33.023 | \$31.358 | \$32.251 |
| TTF | \$40.778 | \$42.279 | \$42.849 | \$42.623 | \$41.473 | \$41.356 | \$41.748 | \$41.974 | \$42.129 | \$42.306 | \$41.796 | \$42.611 |
| TTF-HHHub | \$34.472 | \$35.764 | \$36.532 | \$36.984 | \$36.679 | \$36.627 | \$36.956 | \$37.108 | \$37.250 | \$37.459 | \$36.884 | \$37.372 |
| NBP | \$39.246 | \$42.665 | \$43.738 | \$42.774 | \$39.534 | \$36.774 | \$35.939 | \$35.434 | \$35.550 | \$35.669 | \$36.838 | \$39.721 |
| NBP-HHHub | \$32.940 | \$36.150 | \$37.421 | \$37.135 | \$34.740 | \$32.045 | \$31.147 | \$30.568 | \$30.671 | \$30.822 | \$31.926 | \$34.482 |

Weather Storage Model - Next 4 Week Forecast



Weather Storage Model - Next 4 Week Forecast



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.

