The NG EU Storage Seasonal Inverted Z Signal.

Thirty-five years of European gas storage deviation from seasonal norm mapped against NYMEX natural gas forward returns. Strongest signal in the NG global stack.

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What this signal is

Why European gas storage runs on a sharp seasonal cycle. Why storage deviation from day-of-year norm leads LNG import demand by weeks. Why the clean monotonic edge with 10.38pp top-to-bottom spread is the strongest NG-global-stack discrimination.

European gas storage runs on a sharp seasonal cycle. Summer injection builds inventory for winter withdrawal. Storage deviation from the day-of-year norm leads LNG import demand by weeks because EU buyers must cover any seasonal deficit through imports. When storage runs short of the DoY norm, LNG pull is mandatory and Henry Hub tightens through Gulf Coast feedgas. When storage runs long, LNG imports slow and Henry Hub loosens.

Current reading as of November 2, 2026: composite +0.728, EU Storage Short, 87 trading days in band. EU storage is running roughly a full standard deviation short of the day-of-year norm. LNG pull building.

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How the inputs compose

The signal reads AGSI EU storage level daily, subtracts the day-of-year rolling norm, runs a 52-week rolling z-score of the deviation, and tanh-bounds the NEGATED z-score to plus-or-minus one (INVERTED polarity). Positive composite reads EU storage short (LNG pull mandatory, bullish NG). State machine uses a 4-band threshold at plus-or-minus 0.3 and plus-or-minus 0.7.

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What the state-conditional returns have actually done

Nat gas forward 60-day benchmark across the 8,926-day sample has a mean of minus 1.06 percent and a median of minus 0.84 percent; both reference points anchor the regime edges below.

State EU Storage Short (phase plus one, composite above plus 0.3) covers 11.8 percent of the sample and delivers plus 1.05 percent forward 60-day, a plus 2.11 percentage point edge above the mean baseline. State Normal covers 66.0 percent and delivers minus 0.61 percent. State EU Storage Long (phase minus one) covers 6.3 percent and delivers minus 9.34 percent, a minus 8.27pp edge below the baseline. CLEAN MONOTONIC with 10.38pp top-to-bottom spread. Strongest NG-global-stack discrimination.

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Three cases that frame how to read this signal

Case 1: April 2021 to October 2021. The 2021 EU storage shortage bullish rally.

The composite moved into state EU Storage Short on April 14, 2021 as EU storage ran short of seasonal norm heading into the post-COVID demand recovery. Over the 128-trading-session window NG ratio-adjusted continuous rallied from 6.76 to 9.52, a plus 40.9 percent move as LNG pull built.

Case 2: July 2023 to February 2024. The post-crisis EU storage surplus bearish window.

The composite moved into state EU Storage Long on July 17, 2023 as EU storage filled past seasonal norm on reduced winter demand expectations. Over the 158-trading-session window NG ratio-adjusted continuous fell from 5.00 to 3.80, a minus 24.1 percent move.

Case 3: March 2024 to September 2024. The 2024 shoulder-season EU Storage Long window.

The composite moved into state EU Storage Long on March 12, 2024 as EU storage remained above seasonal norm after a mild 2023-2024 winter. Over the 121-trading-session window NG ratio-adjusted continuous fell from 3.65 to 3.28, a minus 10.1 percent move.

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How to use the signal today

The composite reading is firmly EU Storage Short, 87 sessions into the regime. For a gas PM, this is the strongest bullish structural signal in the NG global stack. State-conditional forward edge is plus 2.11pp above baseline. Pair with the TTF-HH spread (arb economics) and the Rotterdam LNG regas composite (physical flow). Storage leads flow which leads spread which leads price.

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Methodology notes

Data source: AGSI (Aggregated Gas Storage Inventory) EU storage daily release. Daily cadence. Benchmark: NYMEX natural gas ratio-adjusted continuous (CSI feed NG_1220BD). Forward 60-day returns computed as the 60-day forward percentage change. Composite: 52-week rolling z-score of EU storage deviation from day-of-year norm, tanh-scaled. Polarity INVERTED so positive reads storage shortage.

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What this signal does not cover

This signal does not cover: country-level EU storage breakouts (Germany, Netherlands, Italy, France); specific storage facility ownership or operator decisions; UK NTS storage (operates on a different regulatory regime). This signal reads EU aggregate AGSI data only.