The NG TTF-HH Spread Z Signal.

Thirty-four years of TTF-HH arbitrage spread mapped against NYMEX natural gas forward returns.

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What this signal is

Why TTF-HH spread leads US LNG terminal utilization. Why wide spread pulls Gulf Coast feedgas and transmits back to Henry Hub pricing. Why the clean monotonic edge confirms the arb-economics mechanism.

European TTF gas trades at a premium to US Henry Hub when EU demand pulls LNG hard. The TTF-HH spread captures the arbitrage economics that drive US LNG terminal utilization. When the spread widens, Gulf Coast LNG exporters fill their terminals and feedgas demand pulls on domestic supply. When the spread narrows, US LNG exports slow and domestic supply loosens.

Current reading as of November 2, 2026: composite +0.930, Extreme POS, 181 trading days in band. The TTF-HH spread is roughly 1.7 standard deviations above its rolling norm; US LNG arb is firmly open.

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How the inputs compose

The signal reads daily ICE TTF Dutch gas futures front-month settlement and NYMEX Henry Hub nat gas front-month settlement, computes the spread in USD per MMBtu, runs a 252-day rolling z-score with 63-day minimum sample, and tanh-bounds to plus-or-minus one. Positive composite reads wide spread (US LNG arb open). State machine uses plus-or-minus 0.5 as the Extreme band boundaries.

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What the state-conditional returns have actually done

Nat gas forward 60-day benchmark across the 8,682-day sample has a mean of minus 1.09 percent and a median of minus 0.84 percent; both reference points anchor the regime edges below.

State Wide TTF-HH spread (phase plus one, composite above plus 0.5) covers 19.1 percent of the sample and delivers minus 0.10 percent forward 60-day, a plus 1.00 percentage point edge above the mean baseline. State Normal spread covers 60.4 percent and delivers minus 0.87 percent. State

Narrow TTF-HH spread (phase minus one) covers 20.6 percent and delivers minus 2.63 percent, a minus 1.54pp edge below the baseline. CLEAN MONOTONIC with 2.54pp top-to-bottom spread.

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Three cases that frame how to read this signal

Case 1: December 2014 to October 2015. The 2014-2015 European LNG pull wide-spread window.

The composite moved into state Wide TTF-HH spread on December 1, 2014 as European gas premium built. Over the 221-trading-session window NG ratio-adjusted continuous moved from 12.47 to 10.66, a minus 14.5 percent in-regime move. Henry Hub stayed anchored by shale supply even as TTF held premium.

Case 2: November 2011 to July 2012. The post-Fukushima wide-spread window.

The composite moved into state Wide TTF-HH spread on November 1, 2011 as Japan Fukushima nuclear shutdowns drove LNG demand and European prices higher. Over the 169-trading-session window NG ratio-adjusted continuous moved from 13.31 to 11.74, a minus 11.9 percent in-regime move.

Case 3: May 2023 to March 2024. The post-crisis narrow-spread bearish window.

The composite moved into state Narrow TTF-HH spread on May 8, 2023 as EU prices normalized after the 2022 crisis. Over the 217-trading-session window NG ratio-adjusted continuous fell from 4.93 to 3.64, a minus 26.1 percent move.

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How to use the signal today

The composite reading is firmly Extreme POS. US LNG arb is open and Gulf Coast terminals are pulling domestic feedgas. Pair with the Rotterdam LNG regas composite (physical flow) and the EU storage seasonal composite (demand driver) for a three-channel NG global view. Watch ICE TTF and NYMEX HH daily settlements.

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Methodology notes

Data source: ICE TTF Dutch gas futures front-month settlement and NYMEX Henry Hub nat gas front-month settlement. 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: 252-day rolling z-score of TTF-HH spread in USD per MMBtu, tanh-scaled.

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What this signal does not cover

This signal does not cover: country-level EU gas price breakouts (NBP UK, PEG France, PSV Italy); LNG shipping costs or Panama Canal congestion effects; floating storage decisions on LNG cargoes. This signal reads TTF front-month versus HH front-month only.