



NYMEX WTI Crude Oil, Natural Gas, Heating Oil, and RBOB Gasoline Futures Daily Settlement Procedure

The first six contract months in NYMEX WTI Crude Oil futures (CL), Natural Gas futures (NG), Heating Oil futures (HO), and RBOB Gasoline futures (RB) are settled by CME Group staff based solely upon trading activity on CME Globex between 14:28:00 and 14:30:00 Eastern Time (ET).

Daily settlement methodology

Front month

The front month settles to the volume-weighted average price ("VWAP") of the outright, rounded to the nearest tradable tick. (The procedure changes for the front month's last two days of trading. Please see the end of this document for further details.)

Second month

The second month settles to the price implied from the VWAP of the spread between the front month and second month, using the front month settlement as the anchor price. To use the spread VWAP, this spread must satisfy the product's respective **minimum volume threshold**:

Product	Second Month Minimum Volume Threshold
Crude Oil	200 contracts
Natural Gas	100 contracts
Heating Oil	50 contracts
RBOB Gasoline	50 contracts

In the event that the spread does not satisfy the minimum volume threshold, the second month's settlement price is derived from the price implied from the midpoint of the spread between the front and second months, using the front month settlement as the anchor price.

Third through sixth contract months

The third through sixth months are settled in chronological order according to the following procedure:

Tier 1: Settlement is based on prices implied from the VWAPs of the contract's one-month (e.g. July/August) and two-month (e.g. June/August) spreads, provided that the nearer leg already has a settlement price and that the minimum volume thresholds for the spreads have been met. The **minimum volume thresholds** for spreads used to settle NYMEX energy futures vary according to the product and month being settled:

Product	Months 3-4 Minimum Volume Threshold	Months 5-6 Minimum Volume Threshold
Crude Oil	100 contracts	One contract
Natural Gas	50 contracts	One contract
Heating Oil	25 contracts	One contract
RBOB Gasoline	25 contracts	One contract

Using the implied prices weighting formula below, an **85%** weighting factor is applied to the price implied from the one-month spread, and a **15%** weighting factor is applied to the price implied from the two-month spread. If either the one-month spread or the two-month spread does not trade during the two-minute window but the volume in the other spread meets the threshold, then the settlement price will be implied by the VWAP of the spread that traded.

Implied prices weighting formula

P = implied price

W = Weighting factor

V = Volume

$$\frac{\left(\left(\frac{(P_1 * V_1) + (P_2 * V_2)}{(V_1 + V_2)} \right) + \left(\frac{(P_1 * W_1) + (P_2 * W_2)}{(W_1 + W_2)} \right) \right)}{2}$$

Tier 2: If the combined volume of the spreads does not meet the volume threshold, then the midpoint of the best bids/asks in the relevant one-month and two-month spreads at 14:30:00 ET are used to imply prices for the contract.

The settlement price for that contract will be derived using the implied prices weighting formula (below).

Settlement price weighted average formula

P=implied price

W = Weighting factor

$$\frac{(P_1 * W_1) + (P_2 * W_2)}{(W_1 + W_2)}$$

Contracts beyond six months

The far back months are settled by CME Group staff in conjunction with market participants based on relevant spread relationships. The greatest weight is given to spreads executed in large volumes late in the trading day, either on the trading floor or on Globex.

In the absence of trading activity, spread bids and asks actively represented either on the trading floor or on Globex late in the trading day are used to determine settlements.

Wherever possible, no settlement price will be established that lies outside of an unfilled bid or ask available for execution during the final 15 minutes of trading if the volume of the spreads is 200 or more for Crude, 100 or more for Natural Gas, and 50 or more for Heating Oil and RBOB Gasoline.

Settlement on Last Two Trading Days of the Front Month

On the day before the front month contract expires, the front and second months are settled according to the following procedure:

- Tier 1:** On the *day before the front month contract expires*, the front and second months settle to the VWAP of the outright CME Globex trades executed between 14:28:00 and 14:30:00 ET, rounded to the nearest tradable tick. The next five months will settle based on the same procedures mentioned above.
- Tier 2:** On the *day of expiration*, the front (expiring) month will settle based on the VWAP of the outright CME Globex trades executed between 14:00:00 and 14:30:00 ET, and the second month will settle based on the VWAP of the outright CME Globex trades executed between 14:28:00 and 14:30:00 ET. The next five months will settle based on the same procedures mentioned above.
- Tier 3:** In the absence of outright or spread trades during this period, the settlement price will be the best bid or best ask in the expiring contract at 14:30:00 ET, whichever is closer to the last trade price. If there is not a bid/ask pair in the expiring contract at that time, the settlement price will be the best bid or ask implied by the bid/ask in the spread between the front (expiring) and second month contracts at 14:30:00 ET, whichever is closer to the last outright trade price in the front (expiring) contract.

Only bids and asks that remain active through expiration at 14:30:00 ET will be considered in these calculations. In the event there is insufficient activity to make the aforementioned calculations, staff may rely on earlier data or other available market information to determine an appropriate settlement price.

If you have any questions, please call the CME Global Command Center at 800.438.8618, in Europe at 44.800.898.013, or in Asia at 65.6532.5010.

Note: In the event the aforementioned calculations described in this advisory cannot be made or if staff, in its sole discretion, determines that anomalous activity yields results that are not representative of the fair value of the contract, staff may determine an alternative settlement price.