

# CME Group Petroleum Intraday Index Calculation Guide

## CME Group Petroleum Intraday Index

CME Group Petroleum Intraday Index is based on major Energy Futures live quotes and it is published every 15 minutes. The intent of the Index is to provide an indication on the value of the CME Petroleum Index end-of-day benchmark.

The CME Group Petroleum Intraday Index is listed in points with a starting value of 100.00, set on launch date (3rd August 2020) of the CME Petroleum Index<sup>1</sup>.

## Input data

**The CME Petroleum Intraday Index is a weighted basket of energy futures traded on CME Globex:**

- NYMEX WTI Crude Oil futures (CME Group Commodity code CL)<sup>2</sup>
- NYMEX RBOB Gasoline futures (CME Group Commodity code RB)<sup>3</sup>
- NYMEX NY Harbor ULSD futures (CME Group Commodity code HO)<sup>4</sup>

The calculation is performed every 15 minutes during CME Globex market hours.

The underlying components are represented in USD per barrel, with the RB and HO contracts converted from "cents/gallon" to "USD/barrel" using a standard conversion factor of 1 barrel = 42 US gallons.

Input data to the Index calculation is the mid price of the VWAPs (volume weighted average prices) separately calculated for the bid and the offer sides, up to 5 (five) order-book levels and rounded to 4 decimal places.

## Boundaries condition

The calculated mid-VWAP must be between the best Bid and the best Offer quotes at the moment of calculation; if such boundary condition is broken for the 5 (five) order book levels calculation, the mid-VWAP will be re-calculated using 4 (four) order-book levels and, if still outside the bid-offer spread, 3 (three) order-book levels. If the mid-VWAP remains outside the boundaries using 3 (three) order-book levels, the nearest best Bid or best Offer quote will be used.

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1 <https://www.cmegroup.com/market-data/cme-group-benchmark-administration/files/petroleum-index-methodology.pdf>

2 [https://www.cmegroup.com/trading/energy/crude-oil/light-sweet-crude\\_contractSpecs\\_futures.html](https://www.cmegroup.com/trading/energy/crude-oil/light-sweet-crude_contractSpecs_futures.html)

3 <https://www.cmegroup.com/trading/energy/refined-products/rbob-gasoline.html>

4 <https://www.cmegroup.com/trading/energy/refined-products/heating-oil.html>

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## Insufficient Input Data

In scenarios where there are fewer than 3 order-book levels for either the bid or offer for one of the components, the mid VWAP is set as the mid of the top of order-book for that component. If there are either no bids or offers, the last available calculated mid VWAP is used (e.g. if the Sunday 6 p.m. order-book is insufficient for one of the components, the last available VWAP from the previous Friday/trading day is used for that component).

## Weighting of Input Data

The percentage weight of each futures contract within the Index is based on the respective average open interest volumes for the last quarter of the calendar year, from October 1st to December 31st inclusive. The current weights of each component are as follows:

COMPONENT	CURRENT WEIGHT
WTI CRUDE OIL	72%
RBOB GASOLINE	13%
NY HARBOR ULSD	15%

## CME Group Petroleum Intraday Index Calculation

$$CPRT^t = \frac{WAP^t}{WAP^0} * 100$$

*CPRT<sup>t</sup>* is the CME Group Petroleum Intraday Index.

*WAP<sup>t</sup>* is the Volume Weighted Average Price as calculated in Input data.

*WAP<sup>0</sup>* is the Weighted Average of settlement prices at rebase date of the CME Petroleum EoD Index (3rd August 2020).

## Roll Period

Trading liquidity of futures contracts tends to transfer from the front month to the second month around 5 days prior to the expiry of the front month contract. During roll periods, the VWAP used for the Index calculation is the weighted sum of the respective VWAPs of the front month contract and the second month contract, smoothed according to the following weights.

ROLL PERIOD WEIGHTS	1ST MONTH	2ND MONTH
EXPIRY DAY -6	100%	0%
EXPIRY DAY -5	80%	20%
EXPIRY DAY -4	60%	40%
EXPIRY DAY -3	40%	60%
EXPIRY DAY -2	20%	80%
PENULTIMATE DAY (EXPIRY DAY -1)	0%	100%

On the penultimate day before expiry of the front month contract, only the second month contract is used in the calculation and so thereafter, until the next roll period.

WTI Crude Oil futures expires on the 25th calendar day of the month, RBOB Gasoline futures and NY Harbor ULSD futures expire on the last business day of the month.

The rolling weights are applied by trading day, remaining constant from market opening to market close.

CME Globex market hours are Sunday - Friday 6:00 p.m. - 5:00 p.m. ET (5:00 p.m. - 4:00 p.m. CT) with a 60-minute break each day beginning at 5:00 p.m. ET (4:00 p.m. CT).

CME GLOBEX TRADING DAY	BUSINESS DAY
Sunday 6:00 p.m. – Monday 5:00 p.m. ET	Monday
Monday 6:00 p.m. – Tuesday 5:00 p.m. ET	Tuesday
Tuesday 6:00 p.m. – Wednesday 5:00 p.m. ET	Wednesday
Wednesday 6:00 p.m. – Thursday 5:00 p.m. ET	Thursday
Thursday 6:00 p.m. – Friday 5:00 p.m. ET	Friday

## Publication Schedule

The Index is calculated and published every 15 minutes during each CME Group trading day as per the official schedule available on the [CME Globex Trading Schedule](#).

For more information, please visit [cmegroup.com/petroleumindex](https://cmegroup.com/petroleumindex)