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# ***ARGUS US REFINED PRODUCTS FORWARD CURVES***

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The most up-to-date Argus US Refined Products Forward Curves methodology is available on [www.argusmedia.com](http://www.argusmedia.com)

## Methodology overview

Argus aims to produce reliable, representative price assessments of commodity market values, free from distortion and representative of fair market values. Argus US Refined Products Forward Curves are assessments of market value for forward contracts and financial swaps contracts at predetermined time periods such as months, quarters and calendar years. Forward contracts allow for physical delivery of the product, and financial swaps settle against a published index. Forward curve prices are not forecasts of future values but instead are assessments of the price of delivery of a commodity at a future date if transacted today.

Argus US Refined Products Forward Curves are an essential tool to support mark-to-market accounting and numerous analytical applications such as value-at-risk, potential future exposure, deal valuation, regression analysis, scenario analysis, and valuing option premiums associated with forward products contracts.

Argus US Refined Products Forward Curves currently include balance of the month swap prices providing monthly granularity for time periods extending a minimum of three years forward from the spot year contract. Argus includes two futures contracts — CME Nymex New York Harbor ULSD (HO) and Rbob (RB). The product includes forward curve basis differentials to the same futures contracts. A complete product listing is included on page 4.

Argus US Refined Products Forward Curves are published on every trading day in which the CME's ULSD (HO) and Rbob (RB) products futures markets are open for open outcry trading during normal business hours. Argus US Refined Products Forward Curves are not published on CME holidays.

## Argus US Products methodology

Subscribers are encouraged to review the [Argus US Products Methodology and Specification Guide](#), which contains more information on Argus' editorial processes, policies and procedures, as well as detailed specifications on the physical indexes underlying the forward contracts. The specifications for all forward and swap contracts traded forward are assumed to be the same specification as the underlying physical products described in the Argus US Products methodology.

Argus US Refined Products Forward Curves prices are assessments of market value at 2:30pm EST and are distinct from Argus assessments for physical products, which represent the market throughout the trading day using a low, high and volume-weighted average methodology as described in the [Argus US Products methodology](#).

## Survey process

Argus price assessments are informed by information received from a wide cross-section of market participants, including producers,

consumers and intermediaries. Argus reporters engage with the industry by proactively polling participants for market data. Argus will contact and accept market data from all credible market sources including front and back office of market participants and brokers. Argus will also receive market data from electronic trading platforms and directly from the back offices of market participants. Argus will accept market data by telephone, instant messenger, email or other means.

Argus encourages all market participants to submit all market data to which they are a party that falls within the Argus stated methodological criteria for the relevant assessment. Argus encourages all sources of market data to submit transaction data from back office functions when and where possible.

## Assessment timestamp

Argus US Refined Products Forward Curves are produced on every trading day that the CME's ULSD New York Harbor (HO) and Rbob New York Harbor (RB) Futures markets are open for open outcry trading during normal business hours. All Argus Products Forward Curves are assessments of market value at 2:30pm EST based on information leading up to the timestamp, including transactions, bids and offers, and other market data. Occasionally, market data that is timed stamped after 2:30pm EST are used in calculating final assessments. This is done so that the Argus Products Forward Curves correspond with the CME closing prices for any given trading day. The 2:30pm EST timestamp provides consistency as it aligns with the CME ULSD New York Harbor (HO) and Rbob New York Harbor (RB) products futures closing prices for the primary trading session and the Trade at Settlement mechanism. In the event that CME's open outcry trading session closes early, Argus will use market prices that correspond with the CME's ULSD New York Harbor (HO) and Rbob New York Harbor (RB) market close schedule for that day. Service delivery is 6:00pm CST on every trading day that the CME ULSD New York Harbor and Rbob New York Harbor futures markets are open for trading during normal business hours.

## Assessment process

Argus gathers and analyses information leading up to the timestamp, including transactions, bids and offers, and other market data. Other market data will include spreads between products (quality spreads), spreads between different timings (timing roll), multiple timing transactions (strip deals) and other information.

In many markets, the relevant methodology will assign a relatively higher importance to transactions over bids and offers, and a relatively higher importance to bids and offers over other market information. But certain markets will exist for which such a hierarchy would produce unreliable and non-representative price assessments, and so the methodology must assign a different relative importance in order to ensure the quality and integrity of the price assessment. And even in markets for which the hierarchy normally

exists, certain market situations will at times emerge for which the strict hierarchy would produce non-representative prices, requiring Argus to adapt in order to publish representative prices.

At times, Argus may use proprietary curve valuation models that use advanced statistical analyses to formulate forward curves in cases in which no market information is available for a particular product or term. For each illiquid product or term, Argus has identified at least one liquid reference product or term that has exhibited a strong historical correlation. For each reference product or term that Argus utilizes in producing its forward curves, historical correlations are typically over 90pc, calculated on a daily log-normal return basis.

Once reference products and terms have been identified, Argus conducts historical regression analyses that are updated at least every week. Argus will typically only utilize regression results that yield an  $R^2$  of at least 90pc. The resulting regression co-efficients are then used to calculate daily price curves for illiquid markets. But Argus does not automatically apply the regression formula results as its final curve value. The regression results are checked to make sure that the daily price change that would result is aligned with other products and terms as calculated on an absolute price change basis and daily percentage basis.

### Verification of market data

Reporters carefully analyse all data submitted to the price assessment process. This data include transactions, bids, offers, volumes, counterparties, specifications and any other information that contributes materially to the determination of price. Specific to transactions, bids, and offers, reporters seek to verify the price, the volume, the specifications, location basis, and counterparty. When insufficient, inadequate, or no transaction information exists, Argus reporters will make an assessment of market value by applying intelligent judgment based on a broad array of factual market information.

The assessment process employing judgment is rigorous, replicable, and uses widely accepted valuation metrics. These valuation metrics mirror the process used by physical commodity traders to internally assess value prior to entering the market with a bid or offer. Applying these valuation metrics along with sound judgment significantly narrows the band within which a commodity can be assessed, and greatly increases the accuracy and consistency of the price series. The application of judgment is conducted jointly with the supervising editor.

Several tests are applied by reporters in all markets to transactional data to determine if they should be subjected to further scrutiny. Argus has established internal procedures that involve escalation of inquiry within the source's company and escalating review within Argus management.

For more information on this process, see the [Argus US Products methodology](#).

### Argus Global Compliance Policy

Subscribers and other stakeholders are encouraged to review the [Argus Global Compliance Policy](#) to understand the rigorous and transparent controls framework that Argus has employed to govern its price reporting activities. The company's global compliance officer oversees the compliance framework, including a rolling program of internal audits to ensure compliance with stated methodologies and policies.

### Methodological definitions

The specifications and methodology for the underlying physical markets that the forward and swap derivative markets reference are included in the [Argus US Products methodology](#).

But certain methodological definitions are necessarily unique to the Argus US Refined Products Forward Curves and are described below.

CME Nymex ULSD (HO) New York Harbor futures contract  
The ULSD forward curve prices used are from the CME (HO) futures contract daily settlement prices for the open outcry session as described on the [CME website](#).

The ULSD prompt month forward curve price published by Argus will cease to be published on the same expiration day as the CME HO futures contract for the delivery month. CME uses the last business day of the month proceeding the delivery month to determine the contract expiration date.

CME Nymex Rbob (RB) New York Harbor futures contract  
The Rbob forward curve prices used are from the CME (RB) futures contract daily settlement prices for the open outcry session as described on the [CME website](#).

The Rbob prompt month forward curve price published by Argus will cease to be published on the same expiration day as the CME RB futures contract for the delivery month. CME uses the last business day of the month proceeding the delivery month to determine the contract expiration date.

Supplemental Reid vapor pressure (RVP) assessments  
Argus US Refined Products Forward Curves will include seasonal gasoline RVP specification changes for Cbob Gulf coast (A1 and A2), Cbob New York Harbor (A1 and A2), and conventional Gulf coast gasoline (M1 and M2). Please refer to the [Argus Gasoline RVP Transition Schedule](#) for the RVP specification changes.

**Markets included in Argus US Refined Products Forward Curves****Futures markets:**

CME Nymex futures NY Harbor Rbob (RB)  
CME Nymex futures NY Harbor ULSD (HO)

**Chicago:**

Gasoline physical  
Cbob physical  
Rbob physical  
Jet fuel physical  
ULSD swap

**Group 3:**

Cbob swap  
ULSD swap

**Los Angeles:**

Carbob physical  
Jet fuel swap  
ULSD physical

**New York Harbor:**

Gasoline physical (M1, summer RVP, 7.8)  
Gasoline physical (M2)  
Cbob physical (A1, summer RVP, 7.8)  
Cbob physical (A2)  
Rbob swap  
Heating oil physical  
ULS heating oil physical  
Jet fuel swap  
ULSD swap  
Residual fuel oil 1pc swap

**US Gulf coast:**

Gasoline swap (M1, summer RVP, 7.8)  
Gasoline swap (M2)  
Cbob swap (A1, summer RVP, 7.8)  
Cbob swap (A2)  
Rbob physical  
Heating oil physical  
Jet fuel swap  
ULSD swap  
Residual fuel oil 3pc swap

For a complete description of products listed above please refer to the [Argus US Products methodology](#).