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## ***ARGUS BRAZIL MOTOR FUELS***

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The most up-to-date Argus Brazil Motor Fuels Methodology and Specifications guide is available on [www.argusmedia.com](http://www.argusmedia.com)

## Methodology overview

Argus Brazil Motor Fuels is a daily report about the Brazilian ethanol market. The publication includes price assessments, market commentary, logistics costs, market fundamentals, news and analysis.

### Methodology rationale

Argus strives to construct methodologies that reflect the way the market trades. Argus aims to produce price assessments which are reliable indicators of commodity market values, free from distortion and representative of spot market values. As a result, the specific currencies, volume units, locations and other particulars of an assessment are determined by industry consensus to facilitate seamless bilateral trade and Argus mirrors these industry conventions.

In the Brazilian ethanol markets, Argus typically reflects physical market prices across the entire trading day as a low and high of deals done. In illiquid markets and time periods, Argus assesses the range within which product could have traded by applying a strict process outlined later in this methodology. An entire day price is a reliable indicator of physical market values as it incorporates the broadest possible pool of spot market liquidity and has acceptance from industry.

In order to qualify to set the low or high of the day, deals must meet the minimum volume, delivery, timing, and specification requirements in our methodology and the deals must be bona fide. For volume-weighted averages, the same requirements apply, except volume is considered in aggregate, rather than on a per trade basis.

### Definition of trading day

Argus defines the trading day by determining at what times the market can be said to contain a fair number of willing buyers and sellers. Outside of these time boundaries, markets are typically too illiquid to produce representative price indications and deals. These boundaries can vary in different markets, and will be under continuous review to maintain the accuracy of the assessments.

The trading day is defined as follows:

8:00am-4:45pm Brasilia time

Argus will announce its publishing schedule in a calendar located at [www.argusmedia.com](http://www.argusmedia.com). Argus may not assess prices on certain public holidays even when the exchanges are open, owing to anticipated illiquidity in the cash spot markets.

### 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 sources of market data 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.

Throughout all markets, Argus is constantly seeking to increase the number of companies willing to provide market data. Reporters are mentored and held accountable for expanding their pool of contacts. The number of entities providing market data can vary significantly from day to day based on market conditions. Should the number of entities providing market data repeatedly fall to a level that assessment quality may be affected, supervising editors will review the viability of the assessment.

For certain price assessments identified by local management, should more than 50pc of the market data upon which the assessment is based come from a single entity during any assessment period (defined as the minimum period covered, such as a day for a daily assessment), then the supervising editor will engage in an analysis of the market data with the primary reporter to ensure that the quality and integrity of the assessment has not been affected.

Argus has committed to deliver many of our final published prices to clients by a particular deadline each day. Because compiling and confirming transactions and other market data in advance of this deadline is a lengthy process, price assessment procedures must be concluded well before that deadline. As a result, for the Brazilian ethanol markets, Argus has instituted cut-off times for the submission of data by market participants. Argus will review all data received after the cut-off time and will make best efforts to include in the assessment process all verifiable transactions and market data received after the cut-off time but reserves the right to exclude any market data from the process if received after the cut-off time.

### Cut-off time

5:15pm Brasilia time

### Market data usage

In each market, Argus uses the methodological approach deemed to be the most reliable and representative for that market. Argus will utilize various types of market data in its methodologies, to include:

- Transactions
- Bids and offers
- Other market information, to include spread values between grades, locations, timings, and many other data.

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. Certain markets however 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 obtains, 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.

### Verification of transaction data

Reporters carefully analyze 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. This high level of care applies regardless of the methodology employed. Specific to transactions, bids, and offers, reporters seek to verify the price, the volume, the specifications, location basis, and counterparty. In some transactional average methodologies, reporters also examine the full array of transactions to match counterparties and arrive at a list of unique transactions.

Several tests are applied by reporters in all markets to transactional data to determine if it should be subjected to further scrutiny. If a transaction has been identified as failing such a test, it will receive further scrutiny. For certain price assessments identified by local management, Argus has established internal procedures that involve escalation of inquiry within the source's company and escalating review within Argus management. Should this process determine that a transaction should be excluded from the price assessment process, the supervising editor will initiate approval and, if necessary, documentation procedures.

#### Primary tests applied by reporters

- Transactions not transacted at arms length, including deals between related parties or affiliates.
- Transaction prices that deviate significantly from the mean of all transactions submitted for that day.
- Transaction prices that fall outside of the generally observed lows and highs that operated throughout the trading day.
- Transactions that are suspected to be a leg of another transaction or in some way contingent on an unknown transaction.
- Single deal volumes that significantly exceed the typical transaction volume for that market.
- Transaction details that are identified by other market participants as being for any reason potentially anomalous.
- Transaction details that are reported by one counterparty differently than the other counterparty.
- Any transaction details that appear to the reporter to be illogical or to stray from the norms of trading behavior. This could include but is not limited to divergent specifications, unusual delivery location and counterparties not typically seen.
- Transactions that involve the same counterparties, the same price and delivery dates are checked to see that they are separate deals and not one deal duplicated in Argus records.

#### Secondary tests applied by editors for transactions identified for further scrutiny

##### Transaction tests

- The impact of linkage of the deal to possible other transactions such as contingent legs, exchanges, options, swaps, or other derivative instruments. This will include a review of transactions in markets that the reporter may not be covering.

- The nature of disagreement between counterparties on transactional details.
- The possibility that a deal is directly linked to an offsetting transaction that is not publicly known, for example a "wash trade" which has the purpose of influencing the published price.
- The impact of non-market factors on price or volume, including distressed delivery, credit issues, scheduling issues, demurrage, or containment.

##### Source tests

- The credibility of the explanation provided for the outlying nature of the transaction.
- The track record of the source submitting the data. Sources will be deemed more credible if they
  - Regularly provide transaction data with few errors.
  - Provide data by Argus' established deadline.
  - Quickly respond to queries from Argus reporters.
  - Have staff designated to respond to such queries.
- How close the information receipt is to the deadline for information, and the impact of that proximity on the validation process.

### Assessment guidelines

When insufficient, inadequate, or no transaction information exists, or when a transaction based methodology will not produce representative prices, Argus reporters will make an assessment of market value by applying intelligent judgment based on a broad array of factual market information. Reporters must use a high degree of care in gathering and validating all market data used in determining price assessments, a degree of care equal to that applying to gathering and validating transactions. The information used to form an assessment could include deals done, bids, offers, tenders, spread trades, exchange trades, fundamental supply and demand information and other inputs.

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, in order to be sure that guidelines below are being followed. Valuation metrics include the following:

#### Relative value transactions

Frequently transactions occur which instead of being an outright purchase or sale of a single commodity, are instead exchanges of commodities. Such transactions allow reporters to value less liquid markets against more liquid ones and establish a strong basis for the exercise of judgment.

- Exchange one commodity for a different commodity in the same market at a negotiated value.
- Exchange delivery dates for the same commodity at a negotiated value.

- Exchange a commodity in one location for the same commodity at another location at a negotiated value.

### Bids and offers

If a sufficient number of bids and offers populate the market, then the highest bid and the lowest offer can be assumed to define the boundaries between which a deal could be transacted.

### Comparative metrics

The relative values between compared commodities are readily discussed in the market and can be discovered through dialogue with market participants. These discussions are the precursor to negotiation and conclusion of transactions.

- Comparison to the same commodity in another market center.
- Comparison to a more actively traded but slightly different specification commodity in the same market center.
- Analysis of prices in forward markets for physically deliverable commodity that allow extrapolation of value into the prompt timing for the commodity assessed.
- Comparison to the commodity's primary feedstock or primary derived product(s).
- Comparison to trade in the same commodity but in a different modality (as in barge versus oceangoing vessel) or in a different total volume (as in full cargo load versus partial cargo load).

Throughout this methodology, Argus will explain, in more detail and on a market by market basis, the criteria and procedures that are used to make an assessment of market value by applying intelligent judgment.

### Volume minimums and transaction data thresholds

In establishing each methodology, Argus will list a specific minimum volume for each assessment. Because of the varying transportation infrastructure found in all commodity markets, Argus typically does not establish thresholds strictly on the basis of a count of transactions, as this could lead to unreliable and non-representative assessments. Instead, minimum volumes are typically established which may apply to each transaction accepted, to the aggregate of transactions, to transactions which set a low or high assessment or to other volumetrically relevant parameters.

For certain price assessments identified by local management, Argus will seek to establish minimum transaction data thresholds and when no such threshold can be established Argus will explain the reasons. These thresholds will often reflect the minimum volumes necessary to produce a transaction-based methodology, but may also establish minimum deal parameters for use by a methodology that is based primarily on judgment.

Should no transaction threshold exist, or should submitted data fall below this methodology's stated transaction data threshold for any reason, Argus will follow the procedures outlined elsewhere in this document regarding the exercise of judgment in the price assessment process.

### Transparency and confidentiality

Argus values transparency in energy markets. Argus feels transparency and openness is vital to developing confidence in the price assessment process. Argus asks for transaction counterparty names from contacts in order to confirm deals and to avoid double-counting. But Argus does not publish counterparty names in the Brazil Motor Fuels report. Many companies that voluntarily report trades to Argus have existing confidentiality agreements with counterparties and can only reveal deals to the press if confidentiality is maintained. Maintaining confidentiality allows Argus to gather more information and create more robust assessments.

### Basis differentials and absolute prices

Argus publishes various price types for each commodity. These typically include:

- **Low:** The lowest price that traded or could have traded
- **High:** The highest price that traded or could have traded
- **Volume-weighted average:** a volume-weighted average of reported trades (section below)

### Publications and price data

Brazilian domestic ethanol price assessments are published in the Argus Brazil Motor Fuels report. Subsets of these prices also appear in other Argus reports in several formats, including Argus Americas Biofuels.

Argus price data are available independent of the text-based report in electronic files that can feed into various databases. These price data are also supplied through various third-party data integrators. The Argus website also provides access to prices, reports and news with various web-based tools. All Argus prices are kept in a historical database and available for purchase. Contact your local Argus office for information.

### Corrections to assessments

Argus will on occasion publish corrections to price assessments after the publication date. We will correct errors that arise from clerical mistakes, calculation errors, or a misapplication of our stated methodology. Argus will not retroactively assess markets based on new information learned after the assessments are published. We make our best effort to assess markets based on the information we gather during the trading day assessed.

If transaction information is submitted in error, and the company submitting informs Argus of the error within 24 hours of the original submission, Argus will make best efforts to correct the price data. After 24 hours, Argus will review both the material effect that the correction will have on the price data and the amount of time that has elapsed from the date of the published price data before deciding whether to issue a correction. After 30 days, data submitters are not expected to file corrections to submitted data.

### Ethics and compliance

Argus operates according to the best practices in the publishing field, and maintains thorough compliance procedures throughout the firm. We want to be seen as a preferred provider by our sub-

scribers, who are held to equally high standards, while at the same time maintaining our editorial integrity and independence. Argus has a strict ethics policy that applies to all staff. The policy can be found on our website at [www.argusmedia.com](http://www.argusmedia.com). Included in this policy are restrictions against staff trading in any energy commodity or energy related stocks, and guidelines for accepting gifts. Argus also has strict policies regarding central archiving of email and instant messenger communication, maintenance and archiving of notes, and archiving of spreadsheets and deal lists used in the price assessment process. Argus publishes prices that report and reflect prevailing levels for open-market arms length transactions (please see the [Argus Global Compliance Policy](#) for a detailed definition of arms length).

### Consistency in the assessment process

Argus recognizes the need to have judgment consistently applied by reporters covering separate markets, and by reporters replacing existing reporters in the assessment process. In order to ensure this consistency, Argus has developed a program of training and oversight of reporters. This program includes:

- A global price reporting manual describing among other things the guidelines for the exercise of judgment.
- Cross-training of staff between markets to ensure proper holiday and sick leave backup. Editors that float between markets to monitor staff application of best practices.
- Experienced editors overseeing reporting teams are involved in daily mentoring and assisting in the application of judgment for illiquid markets.
- Editors are required to sign-off on all price assessments each day, thus ensuring the consistent application of judgment.

### Review of methodology

The overriding objective of any methodology is to produce price assessments which are reliable indicators of commodity market values, free from distortion and representative of spot market values. As a result, Argus editors and reporters are regularly examining our methodologies and are in regular dialogue with the industry in order to ensure that the methodologies are representative of the physical market being assessed. This process is integral with reporting on a given market. In addition to this ongoing review of methodology, Argus conducts reviews of all of its methodologies and methodology documents on at least an annual basis.

Argus market report editors and management will periodically and as merited initiate reviews of market coverage based on a qualitative analysis that includes measurements of liquidity, visibility of market data, consistency of market data, quality of market data and industry usage of the assessments. Report editors will review:

- Appropriateness of the methodology of existing assessments
- Termination of existing assessments
- Initiation of new assessments

The report editor will initiate an informal process to examine viability. This process includes:

- Informal discussions with market participants
- Informal discussions with other stakeholders
- Internal review of market data

Should changes, terminations, or initiations be merited, the report editor will submit an internal proposal to management for review and approval. Should changes or terminations of existing assessments be approved, then formal procedures for external consultation are begun.

### Changes to methodology

Formal proposals to change methodologies typically emerge out of the ongoing process of internal and external review of the methodologies. Formal procedures for external consultation regarding material changes to existing methodologies will be initiated with an announcement of the proposed change published in the relevant Argus report. This announcement will include:

- Details on the proposed change and the rationale
- Method for submitting comments with a deadline for submissions
- Notice that all formal comments will be published after the given consultation period unless submitter requests confidentiality

Argus will provide sufficient opportunity for stakeholders to analyze and comment on changes, but will not allow the time needed to follow these procedures to create a situation wherein unrepresentative or false prices are published, markets are disrupted, or market participants are put at unnecessary risk. Argus will engage with industry throughout this process in order to gain acceptance of proposed changes to methodology. Argus cannot however guarantee universal acceptance and will act for the good order of the market and ensure the continued integrity of its price assessments as an overriding objective.

Following the consultation period, Argus management will commence an internal review and decide on the methodology change. This will be followed by an announcement of the decision in the relevant Argus report and include a date for implementation. In addition, publication of stakeholders' formal comments that are not subject to confidentiality and Argus' response to those comments will also take place. These formal comments should be published in a manner described by management but must be available to all market participants and stakeholders.

### Updates to methodology

The Argus Brazil Motor Fuels methodology is constantly updated and revised. The latest available methodology (which may supersede the one you are reading) is available at [www.argusmedia.com](http://www.argusmedia.com).

## Price assessments

Unless otherwise noted all prices are for "domesticized" product – either produced domestically, or imported including any duty, taxes and other applicable fees.

Argus assesses the price of anhydrous and hydrous ethanol meeting the following quality specifications:

**Anhydrous**

Free of water and at least 99pc pure – and used in fuel blends. Anhydrous fuel meets all the requirements of the ASTM D4806.

**Hydrous**

Contains water and has a purity of 96pc. Can be used in Brazil as a 100pc gasoline substitute.

**Spot prices**

Prices are for material traded since the last published assessment meeting the quality, volume, timing and delivery criteria set out below. Assessments for Sao Paulo and Center-South can include market information from multiple mill locations and storage facilities normalised to Ribeirao Preto.

**High, low and volume-weighted average prices**

Prices are assessed and published as a low-high range.

Argus also publishes volume-weighted averages of transactions in the spot market over the course of the trading day or trading week.

In order to allow the average to be representative in illiquid markets, a minimum aggregate volume of trade must occur in a given trading day or week for a volume-weighted average to be calculated. Should this aggregate volume not be reached, the volume-weighted average price will default to the mean of the low and high price for the same product.

**Minimum aggregate volumes for volume-weighted averages**

Market	Minimum aggregate volume
Brazilian domestic ethanol	270m <sup>3</sup>

**Normalisation of delivery criteria**

**Sao Paulo state and the Center-South region**

Price assessments for Sao Paulo state and the Center-South region include market information for multiple mill locations and storage facilities, organised into micro-producing regions, normalised to Ribeirao Preto. Price assessments for Sao Paulo state include only in-state trades, while Center-South price assessments include all trades from the wider region sold to Sao Paulo state. Prices for most mill locations and storage facilities are normalised by adding road freight from the micro-producing region to Paulinia and subtracting road freight from Paulinia to Ribeirao Preto. Prices for Pirassununga and Piracicaba are normalised using an assessed differential to Ribeirao Preto. See the normalisation table below.

**Uberaba and Betim**

Price assessments for Uberaba and Betim include market information for multiple mill locations organised into micro-producing regions, in and around Minas Gerais state, including but not limited

to Ribeirao Preto (Sao Paulo) and Senador Canedo/Quirinopolis (Goias). Prices are normalised by adding road freight from the micro-producing region to either one of the two destinations as specified by market sources or based on geographic proximity if a destination is not declared by the time of publication. See the normalisation table below.

**Paulinia**

Price assessments for Paulinia include market information for multiple mill locations, organised into micro-producing regions, in Sao Paulo state as well as inter-tank transfers at the distribution hub at Paulinia. Prices are normalised by adding road freight from the micro-producing region to Paulinia. See the normalisation table below.

**Northeast**

Prices for the ports of Suape, Sao Francisco do Conde and Fortaleza are delivered at place (DAP) and include market information for inter-tank transfers, imports and domestic shipments from multiple mill locations in the states of the Northeast and Center-South regions.

Ex-mill trades for product from specified micro-producing regions to be delivered to one of the named ports as specified by market sources are normalized to delivered prices using road freight from the micro-producing region to the named port. See the normalization table below.

Market information for deliveries to the Northeast originating in the Center-South region will not be used in other assessments.

**Ex-mill**

Ex-mill prices are published every other Monday between 1 November and 30 April.

**Anhydrous**

Ex-mill prices for anhydrous ethanol include market information for mill locations within the named state to any location.

**Hydrous**

Ex-mill hydrous ethanol prices in Alagoas are for product destined to any location. Ex-mill hydrous ethanol prices in Paraiba are for product destined outside Paraiba. Ex-mill hydrous ethanol prices in Pernambuco are for product destined within Pernambuco.

**Taxation**

Hydrous ethanol price assessments include the federal PIS/COFINS and state ICMS taxes, except when any of these have been exempted.

In the Center-South region, hydrous ethanol price assessments include the federal PIS/COFINS and state ICMS taxes, except when any of these have been exempted. In the Northeast region, hydrous ethanol price assessments only include the federal PIS/COFINS tax, except when exempted.

Anhydrous ethanol prices assessments include the federal PIS/COFINS tax, except when it has been exempted. Exemptions may be subject to change at short notice. Subscribers will be notified of any changes.

**Spot ethanol assessments**

Locations	Min vol	Timing	Delivery basis	Frequency
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**Hydrous**

Ribeirao Preto	90m <sup>3</sup>	0-20 days	ex-mill or ex-tank Ribeirao Preto	Daily
Sao Paulo	90m <sup>3</sup>	0-20 days	ex-mill or ex-tank Ribeirao Preto	Daily
Center-South	90m <sup>3</sup>	0-20 days	ex-mill or ex-tank Ribeirao Preto	Weekly, Fridays
Uberaba	90m <sup>3</sup>	0-20 days	dap Uberaba	Weekly, Fridays
Betim	90m <sup>3</sup>	0-20 days	dap Betim	Weekly, Fridays
Paulinia	90m <sup>3</sup>	0-20 days	dap Paulinia	Daily
Pirassununga*	90m <sup>3</sup>	0-20 days	ex-mill Pirassununga	Weekly, Fridays
Piracicaba*	90m <sup>3</sup>	0-20 days	ex-mill Piracicaba	Weekly, Fridays
Suape	90m <sup>3</sup>	0-20 days	dap Suape	Weekly, Mondays
Sao Francisco do Conde	90m <sup>3</sup>	0-20 days	dap Sao Francisco do Conde	Every two weeks, Mondays
Fortaleza	90m <sup>3</sup>	0-20 days	dap Fortaleza	Every two weeks, Mondays
Alagoas	90m <sup>3</sup>	0-20 days	ex-mill Alagoas	Every two weeks, Mondays, (Active 1 Nov to 30 Apr)
Paraiba†	90m <sup>3</sup>	0-20 days	ex-mill Paraiba	Every two weeks, Mondays, (Active 1 Nov to 30 Apr)
Pernambuco‡	90m <sup>3</sup>	0-20 days	ex-mill Pernambuco	Every two weeks, Mondays, (Active 1 Nov to 30 Apr)

**Anhydrous**

Center-South	90m <sup>3</sup>	0-20 days	ex-mill or ex-tank Ribeirao Preto	Weekly, Fridays
Pirassununga*	90m <sup>3</sup>	0-20 days	ex-mill Pirassununga	Weekly, Fridays
Piracicaba*	90m <sup>3</sup>	0-20 days	ex-mill Piracicaba	Weekly, Fridays
Suape	90m <sup>3</sup>	0-20 days	dap Suape	Weekly, Mondays
Sao Francisco do Conde	90m <sup>3</sup>	0-20 days	dap Sao Francisco do Conde	Every two weeks, Mondays
Fortaleza	90m <sup>3</sup>	0-20 days	dap Fortaleza	Every two weeks, Mondays
Alagoas	90m <sup>3</sup>	0-20 days	ex-mill Alagoas	Every two weeks, Mondays, (Active 1 Nov to 30 Apr)
Paraiba	90m <sup>3</sup>	0-20 days	ex-mill Paraiba	Every two weeks, Mondays, (Active 1 Nov to 30 Apr)
Pernambuco	90m <sup>3</sup>	0-20 days	ex-mill Pernambuco	Every two weeks, Mondays, (Active 1 Nov to 30 Apr)

\*published independently as differentials to Ribeirao Preto, which are also used to normalize values for inclusion in the Center-South and Sao Paulo assessments  
 †ex-mill hydrous ethanol prices in Paraiba are for product destined outside Paraiba  
 ‡ex-mill hydrous ethanol prices in Pernambuco are for product destined within Pernambuco

Hydrous and anhydrous ethanol was exempt from PIS/COFINS taxation until 1 January 2017, when these taxes were re-introduced.

**Calculated prices**
**Hydrous ethanol Center-South ex-mill ex-tax R/m<sup>3</sup>**

An ex-tax price calculated as the hydrous ethanol Center-South ex-mill volume weighted average R/m<sup>3</sup> minus the current ICMS tax rate in the state of Sao Paulo and the federal PIS/COFINS tax rates.

**Anhydrous-hydrous spread Center-South ex-mill (pc)**

Calculated as: (anhydrous ethanol Center-South ex-mill volume-weighted average - hydrous ethanol Center-South ex-mill volume-weighted average) / hydrous ethanol Center-South ex-mill volume-weighted average \* 100.

**Term contract prices**

Term contract price assessments are for anhydrous material delivered under long-term contracts, where the contract is negotiated at a percentage differential to ex-tax Center-South ex-mill hydrous spot prices, and valid for the current agricultural year (1 April-31 March).

Prices are assessed for the Center-South region weekly on Friday.

Argus assesses the differential between anhydrous and hydrous material negotiated between buyer and seller as a low-high range, where the low is the lowest differential negotiated and validated, and the high the highest. The outright contract price low and high are calculated by applying the low percentage and the high percentage differential to the corresponding hydrous ethanol Center-South ex-mill, ex-tax spot price for the day of publication.

For example, a differential low and high of 0pc and 10pc, and a hydrous ethanol Center South ex-mill ex-tax spot price of R100/m<sup>3</sup>, would result in an outright contract price low of R100/m<sup>3</sup> and an outright contract price high of R110/m<sup>3</sup>.

**Road freight**

Prices are assessed weekly, on Friday, for the transportation of 90m<sup>3</sup> of material along the specified route, loading within 20 days, and including tolls. Tax inclusive assessments (inc-tax) include PIS/COFINS and ICMS. Tax exclusive assessments (ex-tax) exclude these taxes.

**Currency and unit**

Ethanol prices are assessed and published in reals/m<sup>3</sup> (R/m<sup>3</sup>). Prices are also published in US dollars/m<sup>3</sup>, converted from the corresponding R/m<sup>3</sup> price using the 1pm exchange rate published by Brazil's Central Bank on the day of publication. Road freight rates are published in reals/m<sup>3</sup>.

## US ethanol prices

Argus Brazil Motor Fuels includes prices for major US ethanol markets, converted to reals/m<sup>3</sup>.

Prices are published for

- Chicago (Argo)
- Los Angeles low CI
- Houston
- New York Harbor

See the [Argus Americas Biofuels methodology](#).

## Brazilian biodiesel

### Soybean oil

Argus assesses soybean oil on a weekly basis both in the export and in the domestic markets. The assessments are published every Friday.

#### Paranagua

**Timing:** 5 - 30 days forward

**Volume:** 5,000t minimum

**Unit:** \$/t

**Basis:** fob Paranagua

**Specification:** degummed soybean oil ANEC 81

#### Sao Paolo

**Timing:** 30 days forward

**Volume:** 200t minimum

**Unit:** reals/t

**Basis:** cif Sao Paulo with 12pc ICMS

**Specification:** degummed soybean oil ANEC 81

### Beef Tallow

Argus assesses beef tallow weekly and publishes the price every Friday.

**Timing:** 30 days forward

**Volume:** 300t minimum

**Unit:** reals/t

**Basis:** cif Sao Paulo with 12pc ICMS

**Specification:** acidity maximum 3.5pc; maximum 1pc moisture and impurities

### Methanol

Argus assesses methanol delivered Brazil weekly and publishes the price every Friday.

**Timing:** minimum 20-30 days forward

**Volume:** 1,000t

**Unit:** \$/t

**Basis:** cif Brazil

**Specification:** IMPCA or ASTM D1152

### Glycerine

Argus assesses glycerine delivered to China from Brazil weekly and publishes the price every Friday.

**Timing:** minimum 40-50 days forward

**Volume:** 500-1,000t

**Unit:** \$/t

**Basis:** cif China (Shanghai, Nanjing, Zhangjiagang, Lianyungang and Tianjin ports)

**Specification:** raw glycerine (low fatty acid content) with minimum 80pc glycerol; maximum 12pc moisture

## Delivered South America products prices

Argus Brazil Motor Fuels includes calculated prices for gasoline and ULSD delivered to ports in South America from the US Gulf coast and Rotterdam and price assessments for imported gasoline and ULSD meeting the specifications established by Brazilian regulator ANP.

### Calculated foreign specification prices

Diesel ULSD 62 fob USGC: del Itaqui, del Suape, del Santos, del Paranagua

Gasoline 87 conv USGC: del Itaqui, del Suape, del Santos, del Paranagua

Gasoline Eurobob oxy NWE: del Itaqui, del Suape, del Santos, del Paranagua

See the [Argus US Products methodology](#).

### Domestic specification gasoline, diesel prices

Prices for gasoline and diesel are assessed and published weekly on Friday, or the previous working day if Friday is a holiday, as a differential to price of Nymex gasoline or diesel.

Prices are assessed and published as differentials to the first and second-month Nymex gasoline or diesel futures contract. All trades, bids, offers, and other market information against a Nymex futures month different than the one published will be converted to a differential to the published Nymex futures month.

The assessments include market activity which occurs between 8am on the day after the previous assessment and 4:45pm on the day of the assessment and is received by Argus by 5:15pm on the day of the assessment.

**Delivery timing:** 15-45 days forward

**Volume:** full MR1 or MR2 cargo

**Delivery terms:** delivered to up to two ports on the Brazilian coast

**Unit:** ¢/USG

**Diesel specification:** ANP S10 diesel

**Diesel differential basis:** Nymex ULSD futures contract

**Gasoline specification:** ANP unblended A gasoline

**Gasoline differential basis:** Nymex RBOB futures contract

### Petrobras posted prices

Argus publishes wholesale prices for diesel — S10 and S500 — and gasoline in the following distribution bases: Manaus, Itacoatiara, Belem, Sao Luis, Fortaleza, Guamare, Cabedelo, Ipojuca, Maceio, Sao Francisco do Conde, Candeias, Jequie, Itabuna, Vitoria, Vila Velha, Volta Redonda, Duque de Caxias, Betim, Uberlandia, Uberaba, Guarulhos, Barueri, Sao Caetano do Sul, Cubatao, Santos, Paulinia, Sao Jose dos Campos, Ribeirao Preto, Brasilia, Senador



Canedo, Araucaria, Paranagua, Itajai, Guaramirim, Biguacu, Canoas and Rio Grande.

Argus' published fuel prices are a snapshot of posted prices at around 5pm Brazil time. If posted prices are unavailable or have not been updated at that time, Argus may republish the most recent prices. In such cases, when they become available, prices may be updated in the Argus database for retrieval from Argus Direct and other electronic data distribution channels.

Prices are published in reals/l and ¢/USG using the 1pm exchange rate published by Brazil's Central Bank on the day of publication and a conversion factor of 1USG=3.7854l.

## US environmental markets

### LCFS

The California Low-Carbon Fuel Standard (LCFS) price per carbon intensity point, as published in Argus Air Daily and converted to \$/m<sup>3</sup>.

### D5/D6 RIN spread

The spread between the assessed price of renewable identification numbers (RINs) for D5 (advanced biofuel D5 category) and D6 (ethanol, renewable fuel D6 category) as published in Argus Americas Biofuels and converted to \$/m<sup>3</sup>.

See the [Argus Air Daily methodology](#) and the [Argus Americas Biofuels methodology](#).

## Geographical definitions

Regions outlined above are defined as follows:

### Ribeirao Preto

Albertina, Alta Mogiana, Andrade, Araquara, Ariranha, Batatais, Bazan, Bela Vista, Bertolo, Buritzal, Cevasa, CHS Ribeirao Preto, Colombo Ariranha, Colorado, Continental, Da Pedra, Delos, Delta Energia Ribeirao Preto, Dracena, Guaira, Guariba, Ibira, Igarapava, Itaiquara–Tapirataba, Jaboticabal, Luis Antonio, Mandu, MB, Mococa, Nardini, Nova Uniao, Pignata, Pitangueiras, Pradopolis, Santa Clara, Santa Cruz, Sao Francisco, Sao José, Sta Ines, Sta Adelia, Sto Antonio, Vale do Rosario, Viralcool

### Aracatuba

Alcoazul, Brejo Alegre, Caeté Paulicéia Araçatuba, Ipê, Sta Adélia - Pereira Barreto, Sta Adélia – Pioneiros, Andradina, Auriflama, Bento de Abreu, Campestre, Clementina, Da Mata, Diana, Figueira, Generalco, Mirandópolis, Mirandópolis Mundial, Promissão, Queiroz, Santa Mercedes, Unialco, USAA, Valparaíso, Viralcool II

### Divinopolis

Agropeu, Bambui, Lagoa da Prata, Luciania, Pompeu

### Frutal-Araxá

Alcon, Bunge Frutal, Bunge Itapagipe, Campo Florido, CMAA Vale do Tijuco, Delta MG, Delta Volta Grande, Santa Juliana, Santo Ângelo, Uberaba, Zema

### Ituiutaba

Arapora, Bioaroeira, Canápolis, Ituiutaba, Prata, Santa Vitoria, Sao Simao Andrade, Vale Sao Simao

### Jau-Bauru

Furlan Avaré, São Manoel, Barra Bonita, Bento de Abreu, Bocaína, Brotas, DC Bio, Dois Córregos, Grizzo, Guaricanga, Iacanga, Jaú, JJ, Lins, Malosso, Santa Candida, Santa Fé (Itaquê), Zilor Barra Grande, Zilor São José

### Minas Oeste

Iturama, Limeira, Uniao de Minas

### Passos

Monte Belo, Guaranesia, Sao Sebastiao do Paraiso

### Patos-Unai

DPVA, Joao Pinheiro, Paracatu, Veredas

### Pirassununga

Camillo Ferrari, Cresciúma, Ester, Nossa Aparecida, Nova Era Energia, São João, São Luiz, Santa Lúcia, Vista Alegre

### Piracicaba

Capivari, Comanche Tatuí, Elias Fausto, Furlan Avaré, Furlan Santa Bárbara, Iracemópolis, Santa Maria, Rafard, Rio das Pedras, Pederneiras, Santa Rosa

### Presidente Prudente

Alcidia, Alta Paulista, Alto Alegre Floresta, Alvorada do Oeste, Atena, Bioenergia, Branco Peres, Califórnia, Cocal Narendiba, Conquista de Pontal, Decasa, Floralco, Rio Vermelho, Santa Fany, Tupã, Umoe Bioenergy II

### Ourinhos

Água Bonita, Bernardino de Campos, CESPT, Comanche Canitar, Cocal, Iracema – Itaí, Jacarezinho, Londra, Pyles, Ipaussu, Maracaí, Paraguaçu, Pau d'Alho, Tarumã, Renascença, Rio Pardo, Sao Luiz S.A, Santa Maria – Mandurí, São Luiz, TGM Destilaria, Toledo Ibéria, Zilor Quatá

### Sao Jose do Rio Preto

Alcoeste, Cardoso, Catanduva, Cruz Alta, CBAA, Colombo – Palestina, Guararoba, José Bonifácio, Moema, Monções, Mendonça, Nova Horizonte, Ilha Solteira, Itajobi, Londra, Coplasa, Monte Aprazível, Catanduva, Meridiano, Potirendaba, Sebastianópolis, Oeste Paulista, Onda Verde – Usina Vale, Oriundúva, Ouroeste, Ruelle Monterey, Santa Albertina, São José da Estiva, Severínia, Tanabí, Tietê, Vale do Parana, Vertente

### Teofilo Otoni

Carlos Chagas, Nanuque, Serra dos Aimores

### **Quirinópolis/Senador Canedo (GO)**

Rio Verde, Itumbiara, Caçu, Canadá, Cerradinho Bio, Nardini II – Apore, CHS Edeia, Colorado CEM, Decal, Centro-Oeste, Jataí, SJC Bioenergia Quirinópolis, Boa Vista, São Paulo, São Simão, Serra do Caiapo, Serranópolis, Água Emendada, Morro Vermelho, Rio Claro, VIBO Leopoldo de Bulhões, Sylvania, Vianópolis, Cambuí, Floresta, Panorama, VREC Bom Sucesso

### **Triangulo Mineiro (MG)**

Araquari, Araporã Bioenergia, Bambuí Bioenergia, Bioenergética Aroeira, Campo Florido, Cerradão, CMAA Vale do Tijuco, DAM-FI, Delta Conquista, Delta Matriz, Frutal, Itapagipe, Ituiutaba, Iturama, Laginha Trialcool, Limeira do Oeste, Luciania, Planalto, Prata, Santa Juliana, Santa Vitória, São Simão, Uberaba, União de Minas, USA Santo Angelo, Vale do Paranaíba, Volta Grande

### **Dourados/Rio Brilhante (MS)**

Aurora, Caarapó, CBAA, CBB, DCOIL Iguatemi, Eldorado, Eldorado, Fátima do Sul, Ivinhema, Laguna, Maracaju, Monte Verde, Naviraí, Passa Tempo, Rio Brilhante, Safi Brasil, Santa Helena, Santa Luzia, São Fernando, Sidrolândia, Vicentina, Vista Alegre

### **Center-South**

The states of Sao Paulo, Minas Gerais, Goias, Mato Grosso do Sul and Parana

### **Northeast**

The states of Alagoas, Bahia, Ceara, Maranhao, Paraiba, Pernambuco, Piaui, Sergipe, Rio Grande do Norte

### **Bahia Norte**

Juazeiro

### **Bahia Sul**

Ibirapuã, Lajedão, Medeiros, Santa Cruz

Normalisation criteria			
Assessment	Ex-mill origin market	Added: Road freight inc-tax R/m <sup>3</sup>	Subtracted: Road freight inc-tax R/m <sup>3</sup>
Paulinia	Ribeirao Preto	Ribeirao Preto - Paulinia	na
	Aracatuba	Aracatuba - Paulinia	na
	Presidente Prudente	Presidenta Prudente - Paulinia	na
	Ourinhos	Ourinhos - Paulinia	na
	Jau-Bauru	Jau-Bauru - Paulinia	na
	Sao Jose do Rio Preto	Sao Jose do Rio Preto - Paulinia	na
	Pirassununga	Ribeirao Preto - Paulinia	Assessed differential to Ribeirao Preto*
	Piracicaba	Ribeirao Preto - Paulinia	Assessed differential to Ribeirao Preto*
	Ribeirao Preto	na	na
	Aracatuba	Aracatuba - Paulinia	Ribeirao Preto - Paulinia
Sao Paulo state	Presidente Prudente	Presidenta Prudente - Paulinia	Ribeirao Preto - Paulinia
	Ourinhos	Ourinhos - Paulinia	Ribeirao Preto - Paulinia
	Jau-Bauru	Jau-Bauru - Paulinia	Ribeirao Preto - Paulinia
	Sao Jose do Rio Preto	Sao Jose do Rio Preto - Paulinia	Ribeirao Preto - Paulinia
	Pirassununga	na	Assessed differential to Ribeirao Preto*
	Piracicaba	na	Assessed differential to Ribeirao Preto*
	Ribeirao Preto	na	na
	Aracatuba	Aracatuba - Paulinia	Ribeirao Preto - Paulinia
	Presidente Prudente	Presidenta Prudente - Paulinia	Ribeirao Preto - Paulinia
	Ourinhos	Ourinhos - Paulinia	Ribeirao Preto - Paulinia
Center-South	Jau-Bauru	Jau-Bauru - Paulinia	Ribeirao Preto - Paulinia
	Sao Jose do Rio Preto	Sao Jose do Rio Preto - Paulinia	Ribeirao Preto - Paulinia
	Triangulo Mineiro	Triangulo Mineiro MG - Paulinia	Ribeirao Preto - Paulinia
	Quirinopolis/Senador Candeo (GO)	Quirinopolis/Senador Candeo (GO) - Paulinia	Ribeirao Preto - Paulinia
	Dourados/Rio Brilhante (MS)	Dourados/Rio Brilhante MS - Paulinia	Ribeirao Preto - Paulinia
	Pirassununga	na	Assessed differential to Ribeirao Preto*
	Piracicaba	na	Assessed differential to Ribeirao Preto*
	Divinopolis	Divinopolis - Betim	na
	Patos-Unai	Patos-Unai - Betim	na
	Passos	Passos - Betim	na
Betim	Frutal-Araxe	Frutal-Araxe - Betim	na
	Ituiutaba	Ituiutaba - Betim	na
	Minas Oeste	Minas Oeste - Betim	na
	Teofilo Otoni	Teofilo Otoni - Betim	na
	Ponte Nova	Ponte Nova - Betim	na
	Quirinopolis/Senador Canedo (GO)	Quirinopolis/Senador Candeo (GO) - Betim	na
	Ribeirao Preto	Ribeirao Preto - Betim	na
	Divinopolis	Divinopolis - Uberaba	na
	Patos-Unai	Patos-Unai - Uberaba	na
	Passos	Passos - Uberaba	na
Uberaba	Frutal-Araxe	Frutal-Araxe - Uberaba	na
	Ituiutaba	Ituiutaba - Uberaba	na
	Minas Oeste	Minas Oeste - Uberaba	na
	Teofilo Otoni	Teofilo Otoni - Uberaba	na
	Ponte Nova	Ponte Nova - Uberaba	na
	Quirinopolis/Senador Canedo (GO)	Quirinopolis/Senador Candeo (GO) - Uberaba	na
	Ribeirao Preto	Ribeirao Preto - Uberaba	na

**Normalisation criteria**

Assessment	Ex-mill origin market	Added: Road freight inc-tax R/m <sup>3</sup>	Subtracted: Road freight inc-tax R/m <sup>3</sup>
Suape	Pernambuco	Pernambuco - Suape	na
	Alagoas	Alagoas - Suape	na
	Paraiba	Paraiba - Suape	na
	Goiás	Goiás - Suape	na
	Minas Gerais	Minas Gerais - Suape	na
	Sao Paulo	Sao Paulo - Suape	na
	Bahia Norte	Bahia Norte - Suape	na
	Bahia Sul	Bahia Sul - Suape	na
Sao Francisco do Conde	Bahia Norte	Bahia Norte - Sao Francisco do Conde	na
	Bahia Sul	Bahia Sul - Sao Francisco do Conde	na
	Alagoas	Alagoas - Sao Francisco do Conde	na
	Pernambuco	Pernambuco - Sao Francisco do Conde	na
	Minas Gerais	Minas Gerais - Sao Francisco do Conde	na
	Goiás	Goiás - Sao Francisco do Conde	na
Fortaleza	Sao Paulo	Sao Paulo - Sao Francisco do Conde	na
	Pernambuco	Pernambuco - Fortaleza	na
	Paraiba	Paraiba - Fortaleza	na
	Bahia Norte	Bahia Norte - Fortaleza	na
	Bahia Sul	Bahia Sul - Fortaleza	na
	Goiás	Goiás - Fortaleza	na
	Rio Grande do Norte	Rio Grande do Norte - Fortaleza	na

*\*indicates activity is normalized using an assessed differential to Ribeirao Preto, not ethanol road freight inc-tax*