METHODOLOGY AND SPECIFICATIONS GUIDE

argus

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ARGUS AMERICAS BIOFUELS

Contents:

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The most up-to-date Argus Americas Biofuels Methodology and Specifications guide is available on www.argusmedia.com

Methodology overview

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 biofuels 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. Argus applies product basis differential transactions to the CME settlement price to arrive at fixed prices because the futures settlement price is a representative futures price reference. This approach has been endorsed by industry acceptance. See also section "Definition of trading day."

Additionally, the industry has asked Argus to reflect swaps market prices as a bid-offer range at 2:30pm EST. This approach aligns the financial swap with its underlying futures settlement price at 2:30pm EST and allows companies to more easily use the price as a mark-to-market tool.

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:

North America: 8:00am–3:30pm Houston time
Brazil: 8:00am-4:45pm Brasilia time

Argus will announce its publishing schedule in a calendar located at 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 Americas biofuels 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

Brazil: 5:15pm Brasilia time
All other assessments: 4:00pm Houston 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.

Commodity	Modality	Locations	Minimum volume
D6 ethanol RIN	Credit	na	500,000 RINs
D4 biodiesel RIN	Credit	na	250,000 RINs
D5 advanced RIN	Credit	na	100,000 RINs
Biodiesel SME	Rail/barge	fob Houston	3,000 bl
Argo ethanol (VWA)	fob tank	Argo terminal, Chicago	15,000 bl
D6 ethanol RIN (VWA)	Credit	na	1.5mn RINs

Transparency and confidentiality
Argus values transparency in energy markets. As a result, we publish lists of deals in our reports that include price, basis, and volume information. The deal tables allow subscribers to cross check and verify the deals against the prices. 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 Americas Biofuels report. Many companies in the US and Latin America 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
In the Americas Biofuels report, a mix of absolute prices and cash basis differentials make up the negotiated bids, offers and transaction values. In the case of differentials, Argus fixed prices are derived by adding the differentials to the CME futures settlement price or to another differential. In the case of B100 SME biodiesel, differentials trade at premiums or discounts to the front month Nymex ULSD futures contract.

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

- **Differential low**: The low differential to futures or another basis.
- **Differential high**: The high differential to futures or another basis.
- **Low**: The "fixed" or absolute price.
- **High**: The "fixed" or absolute price.
- **Delta**: The change between today's absolute price and that of the previous trading day.

Swaps and forwards markets

Argus publishes forward assessments for numerous markets. These include forward market contracts that can allow physical delivery, such as an "Any Month" paper contract, and swaps contracts that swap a fixed price for the average of a floating published price. Argus looks at forward swaps to inform physical assessments but places primary emphasis on the physical markets. Argus looks at forward markets for biofuels in New York and Chicago.

Publications and price data

Argus biofuels prices for the US and Latin America are published in the Argus Americas Biofuels report. Subsets of these prices appear in other Argus market reports and newsletters in various forms, such as Argus US Products, Argus Latin Markets and Argus US West Coast Products. The 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 subscribers, 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. 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 Americas Biofuels methodology is constantly updated and revised. The latest available methodology (which may supersede the one you are reading) is available at www.argusmedia.com.

Volume-weighted averages

For certain products, Argus publishes volume-weighted averages ("weighted average") of deals done throughout the entire trading day.

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

Minimum aggregate volumes for volume-weighted averages

Market	Minimum aggregate volume
Argo ethanol	15,000 bl
D6 RINs	1.5mn RINs

Month-to-date averages

Month-to-date averages (MTD averages) are the average of the midpoint prices published during the month for:

- Chicago (Argo) prompt
- New York Harbor prompt
- Los Angeles low CI
- Fob Brazil anhydrous
- Cif Brazil anhydrous
- SME Houston fob B100
- SME Chicago fob B100
- SME fob Argentina upriver

US ethanol

Specification
All US ethanol assessments reflect ASTM D4806, 92.1pc ethanol min. Los Angeles ethanol is quoted based on differing carbon intensity scores. Los Angeles specifications will evolve with the Low-Carbon Fuel Standard (LCFS) each year to reflect the new year's low carbon intensity score requirement.

Timing, volume and basis

Chicago
Timing: Prompt: 1-10 days forward Forward months: reflect value of "any month" forward contract. Includes current month and three additional months forward. Months roll at end of calendar month.
Volume: 5,000 bl min
Basis: in-tank transfer fob Kinder Morgan Argo terminal

Chicago Rule 11
Timing: 1-5 days forward
Volume: 145,000 USG min (equivalent to five railcars)
Basis: fob Chicago rail as Rule 11.

New York
Timing: Reflects value of current month "any month" contract and three additional months forward. Months roll five calendar days before end of month.
Volume: 25,000 bl min
Basis: fob New York Harbor barge

US Gulf coast
Timing: 5-15 days forward
Volume: 10,000 bl min
Basis: fob Houston, barge or rail delivery

Dallas, Tampa, Atlanta
Timing: 3-10 days forward
Volume: 5,000 bl min
Basis: delivered by rail

Nebraska

Timing: 1-5 days forward
Volume: 145,000 USG min (equivalent to five railcars)
Basis: BNSF: fob Nebraska rail on Burlington Northern Santa Fe railroad. UP: fob Nebraska rail on Union Pacific railroad.

Los Angeles

Specification: specifications will evolve with the Low Carbon Fuel Standard each year to reflect the new year's low carbon intensity score requirement.
Low CI: carbon intensity score of 79.9
Timing: 1-15 days forward
Volume: 145,000 USG min (equivalent to five railcars)
Basis: rail delivered Carson, California

Ethanol crush spread

This spread measures the profitability of producing ethanol from corn and provides a hedging tool. Since one bushel of corn yields about 2.8 USG of ethanol, the price of ethanol is multiplied by this value to accurately reflect the price conversion. The spread is expressed in $/bushel and calculated as: (Concurrent month Cbot Ethanol in ¢/USG x 2.80) – (Concurrent month Cbot Corn in ¢/bushel).

Asia-Pacific ethanol

cfr Asia South Korea B grade

See the Argus Biofuels Methodology.

Brazil ethanol

Spot prices

Prices are for material meeting the quality, volume, timing and delivery criteria set out below.

Quality	
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.
Industrial grade	South Korean B Grade ethanol

Volume, timing, and delivery

Assessment	Minimum volume	Timing	Delivery	Assessment frequency
Fob Santos	10,000m³	5-30 days	Fob Santos	Daily
Cif Brazil	10,000m³	20-30 days	Cif all Brazilian ports	Daily
Industrial grade fob	5,000m³	15-30 days	Santos or Paranaguá	Every Friday

US biodiesel

Specification

SME B100: soy methyl ester with 100% purity. Conforms to ASTM D6751
SME B99: soy methyl ester with 99% purity. Conforms to ASTM D6751

Argus B100 assessments are for trade where the blenders' tax credit (BTC) will be split 50:50 between blender and supplier if the BTC is reinstated with retroactive effect.

Argus B99 assessments are of trade in material from which the BTC and RINs have already been stripped. Assessed as a differential to CME Nymex ULSD, and to the nearest quarter of a cent.

SME B99 and B100 prices are assessed for New York Harbor, fob Houston and Chicago rail.

Timing, volume and basis

Chicago

Timing: 3-15 days forward
Volume: 3,000 bl min
Basis: in-tank transfer fob Kinder Morgan Argo terminal

Houston

Timing: 3-15 days forward
Volume: 3,000 bl min
Basis: fob Houston rail/barge

New York Harbor

Timing: 15-30 days forward
Volume: 75,000 USG min (equivalent to three railcars)
Basis: rail delivered to New York Harbor

Heating oil/Soybean oil spread

This spread measures the profitability of producing biodiesel from soybeans and provides a hedging tool for protecting production price exposure, also known as the HOBO spread. The spread is expressed in $/USG and calculated as: (Concurrent month Nymex Heating Oil in $/USG) – (Concurrent month CME Soybean Oil in $/lb x 7.50). The spread rolls with the CME Soybean Oil contract on the business day prior to the 15th calendar day of the contract month.

Latin America biodiesel

SME fob upriver, Argentina

Argus assesses Argentinian soybean oil-derived biodiesel in $/t on a daily basis.

Timing: 2-6 weeks forward
Volume: 5,000t minimum
Basis: fob upriver Argentina (Rosario, San Martin)

Outright bid and ask prices are calculated taking into account the esterification factor (assessed daily) and soybean oil differentials (assessed daily) to the Chicago Board of Trade (Cbot) soybean oil futures settlement. The resulting bid and ask prices are derived from the following formula – (soybean oil differentials + Cbot soybean oil futures settlement) * 2,204lbs/t divided by 100¢/$ + esterification factor.

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.

Soybean oil fob Paranagua ($/t)

Timing: 5 - 30 days forward
Volume: 5,000 t minimum
Basis: fob Paranagua
Specification: degummed soybean oil ANEC 81

Soybean oil cif Sao Paulo with 12pc ICMS (real/t)

Timing: 30 days forward
Volume: 200t minimum
Basis: cif Sao Paulo with 12pc ICMS
Specification: degummed soybean oil ANEC 81

Argentinian soybean oil

Argus assesses Argentinian soybean oil in US cents/lb on a daily basis as a differential to the Chicago Board of Trade (Cbot) soybean oil futures settlement.

Timing: delivery is for up to four weeks forward
Volume: 500-5,000t
Basis: fob San Lorenzo, Argentina

Beef Tallow

Argus assesses beef tallow in real/t on a weekly basis. The assessment is published every Friday.

Timing: 30 days forward
Volume: 300t minimum
Basis: cif Sao Paulo with 12pc ICMS
Specification: acidity maximum 3,5pc; maximum 1pc moisture and impurities

Methanol cif Brazil

Argus assesses Brazilian methanol for delivery in Brazil in $/t on a weekly basis. The assessment is published every Friday.

Timing: minimum 20-30 days forward
Volume: 1,000t
Basis: cif Brazil
Specification: IMPCA or ASTM D1152

Glycerine cif China

Argus assesses Brazilian glycerine for delivery in China in $/t on a weekly basis. The assessment is published every Friday.

Timing: minimum 40-50 days forward
Volume: 500-1,000t
Basis: cif China (Shanghai, Nanjing, Zhangjiagang, Lianyungang and Tianjin ports)
Specification: raw glycerine (low fatty acid content) with minimum 80pc glycerol; maximum 12pc moisture

RINs (Renewable Identification Numbers)

Definition

A RIN is a numeric code that is generated by the production or import of renewable fuels. Once a gallon of renewable fuel is blended, the RIN may be detached from the physical fuel and sold through the EPA Moderated Tracking System (EMTS). Under the 2010 Renewable Fuels Standard (RFS2), refiners, importers and blenders, also known as obligated parties (OPs), may purchase RINs to fulfil government mandates set forth by RFS2.

RIN price assessments do not discriminate between RINs that are certified under the EPA's voluntary third-party Quality Assurance Plan (QAP) and those that are not.

Argus will initiate and discontinue coverage of particular RIN vintage years depending on market liquidity, but will always consult subscribers before discontinuing coverage of a vintage year.

Ethanol (renewable fuel D6 category)

The prevailing spot market price of 500,000 RINs for the named vintage year.

Biodiesel (biomass-based diesel D4 category)

The prevailing spot market price of 250,000 RINs for the named vintage year.

Cellulosic (cellulosic biofuel D3 category)

The prevailing spot market price of 100,000 RINs for the named vintage year.

Advanced biofuel (advanced biofuel D5 category)

The prevailing spot market price of 100,000 RINs for the named vintage year.

Renewable Volume Obligation (RVO)

Definition

Argus' RVO assessments reflect an obligated party's cost per US gallon of meeting its obligations under the EPA's RFS2 by purchasing RINs in the spot market. The RVO is calculated by weighting Argus' RIN assessments for the named compliance year according to the EPA's final percentage requirements for the same compliance year, or according to the EPA's proposed percentage requirements for that year if standards have not yet been finalized. See Annex I for current and historic weightings.

Tier 3 sulphur credits

Assessments are of the price of sulphur credits generated under the average, banking and trading (ABT) provision of the Tier 3 Motor Vehicle Emission and Fuel Standards for gasoline produced or imported with sulphur content below 10ppm. Each credit represents a 1ppm reduction for 1mn US gallons of gasoline. To be included in the assessment, trades must be for at least 2,500 credits and be completed during the week of assessment. Assessments are published on the last business day of the week.

Early credits
The price of credits generated through the production of sub-30ppm sulphur gasoline on an annual average basis. The generation period for early credits begins 1 January 2012 and ends 31 December 2016. Early credits expire at the earlier of five years or 31 March 2020.

Standard credits
The price of credits generated through the production of sub-10ppm sulphur gasoline on an annual average basis. The generation period for standard credits begins 1 January 2017. Standard credits expire after five years.

Freight

Rosario-New York 5,000-10,000t biodiesel
Assessment reflects the cost of moving 5,000-10,000t of biodiesel from Rosario to New York Harbor. The loading window is 7-21 days from the day on which the vessel was fixed. The vessel is a chemical carrier. The rate is assessed in $/t.

Santos-New York 10,000-20,000t ethanol
Assessment reflects the cost of moving 10,000-20,000t of ethanol from Santos to New York Harbor. The loading window is 7-21 days from the day on which the vessel was fixed. The vessel is a chemical carrier. The rate is assessed in $/t.

USGC-east coast Mexico 5,000-10,000t ethanol
Assessment reflects the cost of moving 5,000-10,000t of ethanol from the US Gulf to the east coast of Mexico. The loading window is 10-30 days from the day on which the vessel was fixed. The vessel is a chemical carrier. The rate is assessed in $/t.

US Gulf-Itaqui 10,000-20,000t ethanol
Assessment reflects the cost of moving 10,000-20,000t of ethanol from the US Gulf to Itaqui. The loading window is 7-21 days from the day on which the vessel was fixed. The vessel is a chemical carrier. The rate is assessed in $/t.

Rosario-US Gulf 5,000-10,000t biodiesel.
Assessment reflects the cost of moving 5,000-10,000t of biodiesel from Rosario to the US Gulf. The loading window is 7-21 days from the day on which the vessel was fixed. The vessel is a chemical carrier. The rate is assessed in $/t.

Other relevant markets

US refined products
New York barge reg RBOB
New York barge reg CBOB
Gulf coast Colonial reg RBOB F
Gulf coast Colonial reg CBOB A
Gulf coast Colonial ULSD 62

See the Argus US Products methodology for more information.

Americas natural gas liquids
Mont Belvieu natural gasoline

See the Argus NGL Americas methodology for more information.

US environmental markets
California Carbon Allowance
California carbon price for gasoline, diesel
California carbon offset
California Low-Carbon Fuel Standard (LCFS)
California LCFS cost for gasoline, diesel
California LCFS premium per carbon intensity point
Oregon Low-Carbon Fuel Standard (LCFS)

See Argus Air Daily methodology for more information.

Annex I: RVO weightings

Effective Date	D3/D7 cellulosic	D4 biomass-based diesel	D5 advanced biofuel	D6 renewable fuel
24 Jun 2013- 5 Aug 2013	0.0080%	1.1200%	0.4720%	8.0300%
6 Aug 2013 – Final 2013 RVO	0.0040%	1.1300%	0.4860%	8.1200%
24 April 2014 – Final 2013 Cellulosic standard RVO	0.0005%	1.1300%	0.4895%	8.1200%
2 Jan 2014 – Proposed 2014 RVO	0.0100%	1.1600%	0.1600%	7.8700%
29 May 2015 – Proposed 2014 RVO	0.0190%	1.4200%	0.0810%	7.5000%
29 May 2015 – Proposed 2015 RVO	0.0590%	1.4100%	0.1410%	7.4300%
30 November 2015 – Final 2014 RVO	0.0190%	1.4100%	0.0810%	7.6800%
30 November 2015 – Final 2015 RVO	0.0690%	1.4900%	0.0610%	7.9000%
30 November 2015 – Final 2016 RVO	0.12800%	1.5900%	0.2920%	8.0900%
30 November 2016 – Final 2017 RVO	0.1730%	1.6700%	0.5370%	8.3200%