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ARGUS BIOFUELS

Contents:

Methodology overview	2
Price assessments — introduction	5
Argus Open Markets	5
Europe	6
Asia-Pacific	11
Spot price assessments	12
Europe biofuels	12
Europe feedstocks	13
Asia-Pacific biofuels	14
Asia-Pacific feedstocks	15
Americas biofuels	17
Alternative aviation fuels	18
Alternative marine fuels	19
Ethanol	21
Biomethanol	23
Biomethane	24
Bionaphtha and biopropane	24
Monthly averages	25
Greenhouse gas reduction	25
Reference prices	26
Arbitrage	27
Forward price assessments and swaps	27

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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 conventions.

In the European biofuels market, Argus publishes physical market prices in the open spot market as laid out in the specifications and methodology guide. Argus uses the trading period deemed by Argus to be most appropriate, in consultation with industry, to capture spot liquidity.

In order to be included in the assessment process, deals must meet the minimum volume, delivery, timing and specification requirements in our methodology. In illiquid markets, Argus assesses the range within which product could have traded by applying a strict process outlined later in this 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, Argus Open Markets® (AOM®) and directly from the back offices of market participants. Argus will accept market data by telephone, instant messenger, email, AOM 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.

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.

For certain price assessments identified by local management, if more than 50pc of the market data involved in arriving at a price assessment is sourced from a single party 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.

Market data usage

In each market, Argus uses the methodological approach deemed to be the most reliable and representative for that market. Argus will utilise 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 applies, 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 analyse all data submitted to the price assessment process. This data includes transactions, bids, offers, volumes, counterparties, specifications and any other information that contributes materially to the determination of price. This high level of care described 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.

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 assessments used to settle derivatives and for many other assessments, 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 arm's 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 and perceived by Argus to be as such.
- 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 behaviour. 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. 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

As insufficient, inadequate, or no transaction information may exist in the biofuels markets, 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 centre.
- Comparison to a more actively traded but slightly different specification commodity in the same market centre.
- Analysis of prices in forward markets for a 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).

Volume minimums and transaction data thresholds

Because of the varying transportation infrastructure and varying specifications traded for different European markets, Argus does not establish thresholds on the basis of a count of transactions, or volumes traded in biofuel markets, as this would lead to unreliable and non-representative assessments. Argus will typically use comparative metrics (as defined above) and relative value transactions to determine price assessments in the absence of confirmed transaction data. As no transaction threshold exists, Argus follows the procedures outlined elsewhere in this document regarding the exercise of judgment in the price assessment process.

Swaps and forwards markets

Argus publishes forward assessments for numerous markets. These include forward market contracts that can allow physical delivery 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.

Publications and price data

Argus biofuels prices for Europe are published in the Argus Biofuels report. 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.

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 recognises 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 programme of training and oversight of reporters. This programme 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
- For prices used in derivatives, 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 analyse 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 which will be published in the relevant Argus report and include a date for implementation. For prices used in derivatives, publication of stakeholders' formal comments that are not subject to confidentiality and Argus' response to those comments will also take place.

Price assessments — introduction

Argus Biofuels is a daily market report that publishes prices and market commentary on the international bulk spot market for biofuels. Argus Biofuels contains price assessments for different types of spot contracts at specified locations. The market commentary is on the main regional market at Rotterdam.

The assessed prices are based on prices from the open spot market whenever possible.

All assessments and formulas refer to the price of the product on the day of the published report and are expressed in US dollars unless otherwise stated. The prices are for contracts under whatever general terms and conditions are accepted as standard and prevailing in that particular market. Price changes refer to the last published report.

Timing

Price assessment times are as outlined below except on the last publication day before holidays listed in the publishing schedule or announced in the publication. On those days, prices are assessed at 12:30pm local time. For prices with an assessment period, that period advances to 12:00pm-12:30pm local time.

Currency

All euro and pound sterling to US dollar conversions use rates at 4:00pm London time on the day of publication. All Malaysian ringgit to US dollar conversions use rates at 11:00am London time on the day of publication. All Chinese yuan to US dollar conversions use rates at 4:00pm London time the day before publication.

Argus Open Markets

Argus Open Markets (AOM) is a web-based platform enabling market participants to post bids and offers and initiate trade for physical commodities in real time on the spot market.

In biofuels, AOM is available for:

- RED rapeseed OME fob ARA range
- RED Fame 0°C CFPP fob ARA range
- RED Advanced Fame 0°C CFPP fob ARA range
- RED UCOME fob ARA range
- RED SAF HEFA-SPK fob ARA range
- RED HVO fob ARA range (Class I)

- RED HVO fob ARA range (Class II)
- RED HVO fob ARA range (Class III)
- RED HVO fob ARA range (Class IV)
- RED (T2) Ethanol fob ARA range, inc duty
- RED Netherlands waste-based ethanol fob ARA range
- RED UCO fob ARA range
- RED UCO (hydrotreating) fob ARA range
- RED UCOME fob China bulk
- RED UCOME fob strait of Malacca bulk
- UCO fob China bulk
- Premium UCO fob China bulk
- UCO fob strait of Malacca bulk

Related price assessments are typically assessed as a volume-weighted average of deals done within Argus criteria and reported on the Argus Open Markets platform.

At times, trade initiated on AOM may occur at a price that is neither the best bid nor best offer available on AOM at the time. This may occur because of credit restrictions, logistics, because of the speed of market activity, or for other reasons.

Such trades are subject to additional scrutiny to determine why they were initiated at a price other than the best bid or best offer on AOM at the time. Argus may, when possible, normalise the price of such transactions using the most competitive bid or offer on AOM at the time when doing so would produce an assessment more reflective of market conditions.

Note, AOM users attempting to initiate trade at a price that is neither the best bid nor the best offer price available on AOM at that time will be alerted to this fact by the platform.

For the avoidance of doubt, all trade is subject to scrutiny before acceptance for inclusion in the relevant assessment.

Assessments are based on information according to the following hierarchy:

1. Confirmed trade conducted via Argus Open Markets that meets the Argus specifications, timing and location criteria
2. Confirmed trade conducted outside of Argus Open Markets that meets the Argus specifications, timing and location criteria that are reported via Argus Open Markets
3. Confirmed bids and offers conducted via Argus Open Markets that meet Argus specifications, timing and location criteria
4. Bids and offers conducted outside of Argus Open Markets that meet the Argus specifications, timing and location criteria
5. Other market information including but not limited to bids, offers and trades for other volumes, timing and locations, forward markets and arbitrage economics

In the event that Argus Open Markets is unavailable, Argus reserves the right to alter the above hierarchy in the interest of producing an accurate price assessment.

Europe

RED rapeseed OME fob ARA range

Rapeseed oil methyl ester meeting EN14214 specification

If the EN14214 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Currency/unit: US dollars/tonne

Timing: barges loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period

Size: 1,000t, barge shipping tolerance of +/- 2pc at buyer's option

Cold filter plugging point: -13°C or lower

Pour point: between -9°C and -18°C

Water content: 300ppm

Additives: product must not contain additives with the exception of oxidation stabilisers

Typical properties: the following properties are expected for rapeseed OME

- **Iodine value:** 105-114g iodine/hg
- **Saturate methyl ester:** max 8pc m/m (gram of component per 100g sample)
- FAME composition in which the C18:1/C18:2 ratio is 3 or above and C18:1/C16:0 ratio is 13 or above

Market participants initiating trades on the Argus Open Markets platform acknowledge that small deviations from these standards are possible and that only a combination of test results indicating blended product will be considered as off specification

Certificate of analysis: product must be accompanied by a Certificate of Analysis from accredited inspectors with information including CFPP, pour point, iodine value, saturate methyl ester content and FAME composition

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Sellers must provide the below certification criteria

- Registered in Germany's biomass web application system Nabisy

GHG savings: 60pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ.

Assessment time: 4:00pm to 4:30pm London time

Terms and conditions: trades are conducted under standard industry-acceptable terms and conditions or other pre-agreed terms and conditions

Proof of sustainability (POS): trades must be accompanied by rapeseed oil POS and must include only standard industry-acceptable POS clauses in compliance with the EU RED. Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of POS. Documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

RME-FAME: For the purposes of price assessment it is assumed that RED rapeseed OME fob ARA can replace FAME 0° CFPP.

Accordingly, the published RED rapeseed OME fob ARA price assessment will never fall below parity with the FAME 0° CFPP price assessment published in Argus Biofuels. If the assessment process results in a RED rapeseed OME fob ARA price that is below the contemporaneous assessment of FAME 0° CFPP fob ARA, the RED rapeseed OME fob ARA AND THE FAME 0° price assessments will be equal. Note, in this event, the less liquid of the two prices will be adjusted to meet the price of the more liquid market.

RED Fame 0°C CFPP fob ARA range

Fatty acid methyl ester meeting EN14214 specifications

If the EN14214 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Currency/unit: US dollars/tonne

Timing: barges loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period

Size: 1,000t, barge shipping tolerance of +/- 2pc at buyer's option

Cold filter plugging point: 0°C

Water content: 350ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body.

Sellers must provide the below certification criteria

- German mandate compliant — any feedstock in line with § 37b of the "Bundes-Immissionsschutzgesetz" and "Biomasseverordnung"
- Registered in Germany's biomass web application system Nabisy

GHG savings: 60pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ.

Assessment time: 4:00pm to 4:30pm London time

Terms and conditions: trades are conducted under standard industry-acceptable terms and conditions or other pre-agreed terms and conditions

Proof of sustainability (POS): trades must be accompanied by non-palm oil POS and must include only standard industry-acceptable POS clauses in compliance with the EU RED. Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of POS. Documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

RME-FAME: For the purposes of price assessment it is assumed that RED rapeseed OME fob ARA can replace FAME 0° CFPP.

Accordingly, the published RED rapeseed OME fob ARA price assessment will never fall below parity with the FAME 0° CFPP price assessment published in Argus Biofuels. If the assessment process results in a RED rapeseed OME fob ARA price that is below the contemporaneous assessment of FAME 0° CFPP fob ARA, the RED rapeseed OME fob ARA AND THE FAME 0° price assessments will be equal. Note, in this event, the less liquid of the two prices will be adjusted to meet the price of the more liquid market.

RED Advanced Fame 0°C CFPP fob ARA range

Fatty acid methyl ester meeting EN14214 specifications

If the EN14214 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Currency/unit: US dollars/tonne

Timing: loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period

Size: 1,000t, barge shipping tolerance of +/- 2pc at buyer's option

Cold filter plugging point: 0°C

Water content: maximum 350ppm

Certification: material must be accompanied with RED-compliant certification issued by European Commission-approved auditing body. Sellers must provide the below certification criteria

- German advanced mandate compliant — RED-compliant Annex IX Part A feedstocks considered advanced in Germany in line with § 37b of the "Bundes-Immissionsschutzgesetz" and "Biomasseverordnung" and Annex I of the "Bundes-Immissionsschutzgesetz"
- Registered in Germany's biomass web application system Nabisy

GHG savings: 85pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO2 equivalent/MJ

The material contained in each 1,000t barge need only meet the required GHG savings requirement on average, and multiple proof of sustainability (POS) certificates may be attached such that they average to the required GHG savings requirement. All qualities included in a 1,000t barge must be derived from German mandate-compliant advanced feedstock and meet a minimum GHG savings of 78pc based on a fossil fuel comparator of 94g CO2 equivalent/MJ.

Assessment time: 4:00pm to 4:30pm London time

Terms and conditions: trades are conducted under standard industry-acceptable terms and conditions or other pre-agreed terms and conditions

Proof of sustainability: trades must be accompanied by non-palm oil mill effluent POS and must include only standard industry-acceptable POS clauses in compliance with the EU RED. Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of POS. Documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

RED UCOME fob ARA range

Used cooking oil methyl ester meeting EN14214

If the EN14214 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Currency/unit: US dollars/tonne

Timing: loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period

Size: 1,000t, barge shipping tolerance of +/- 2pc at buyer's option

Cold filter plugging point: 0°C

Water content: maximum 350ppm

Certification and buyers' options: Material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Sellers must be able to provide all of the below certification criteria

- Registered in Germany's biomass web application system Nabisy

And if requested by the buyer when nominating a barge

- German mandate compliant — of used cooking oil feedstock in line with § 37b of the "Bundes-Immissionsschutzgesetz" and "Biomasseverordnung"
- UK double-counting eligible — qualified to count double under UK renewable energy for transport laws and regulations

If UK certification is requested at the time of nomination, product must meet only the default value for GHG savings under the national scheme.

GHG savings: 87.5pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO2 equivalent/MJ

The material contained in each 1,000t barge need only meet the required GHG savings requirement on average, and multiple POS certificates may be attached such that they average to the required GHG savings requirement. All qualities included in a 1,000t barge must be derived from used cooking oil (UCO) feedstock and meet a minimum GHG savings of 84pc based on a fossil fuel comparator of 94g CO2 equivalent/MJ.

Assessment time: 4:00pm to 4:30pm London time

Terms and conditions: trades are conducted under standard industry-acceptable terms and conditions or other pre-agreed terms and conditions

Proof of sustainability (POS): trades must be accompanied by used cooking oil POS and must include only standard industry-acceptable POS clauses in compliance with the EU RED. Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of POS. Documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

RED UCO fob ARA range

Used cooking oil as defined by Harmonised System (HS) code 15180095. If the HS code 15180095 definition differs from the Argus specification listed below, the Argus specification takes precedence. EU duty free or EU duty paid

Currency/unit: US dollars/tonne

Timing: barges loading 7-21 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Size: 1,000t, barge shipping tolerance of +/- 2pc at buyer's option

Free fatty acids (FFA) as oleic: maximum 7pc

Moisture, impurities and unsaponifiable (MIU): maximum 2pc

Ester content: maximum 2pc

Iodine value (IV): minimum 75g iodine/hg

Phosphorus content: maximum 50ppm

Sulphur content: maximum 50ppm

Polyethylene content: maximum 50ppm

Wax content: maximum 250ppm

Material must not be chemically modified

Certificate of analysis: product must be accompanied by a Certificate of Analysis from accredited inspectors generated a maximum of two working days before bill of lading

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Material must be used cooking oil entirely of vegetable origin

GHG savings: material must be accompanied by sustainability declaration stating disaggregated default values or calculated actual values for greenhouse gas emissions including emissions from transport and distribution (ETD).

Assessment time: 4:00pm to 4:30pm London time

ABP documentation: material must be accompanied by commercial documentation demonstrating animal by-product category 3 classification as per Regulation (EC) No 1069/2009, 142/2011 and 2017/1261

Proof of sustainability: documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

RED UCO (hydrotreating) fob ARA range

Used cooking oil as defined by Harmonised System (HS) code 15180095. If the HS code 15180095 definition differs from the Argus specification listed below, the Argus specification takes precedence. EU duty free or EU duty paid

Currency/unit: US dollars/tonne

Timing: barges loading 7-21 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Size: 1,000t, barge shipping tolerance of +/- 2pc at buyer's option

Free fatty acids (FFA) as oleic: maximum 10pc

Moisture, impurities and unsaponifiables (MIU): maximum 2pc

Ester content: maximum 2pc

Sulphur content: maximum 50ppm

Metals content (total excluding phosphorus): maximum 100ppm

Phosphorus content: maximum 50ppm

Chloride content (total): maximum 50ppm

Nitrogen content: 200ppm

Polyethylene content: maximum 50ppm

Wax content: maximum 250ppm

Material must not be chemically modified

Certificate of analysis: product must be accompanied by a Certificate of Analysis from accredited inspectors generated a maximum of two working days before bill of lading

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Material must be used cooking oil entirely of vegetable origin

GHG savings: material must be accompanied by sustainability declaration stating disaggregated default values or calculated actual values for greenhouse gas emissions including emissions from transport and distribution (ETD).

Assessment time: 4:00pm to 4:30pm London time

ABP documentation: material must be accompanied by commercial documentation demonstrating animal by-product category 3 classification as per Regulation (EC) No 1069/2009, 142/2011 and 2017/1261

Proof of sustainability: documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

RED HVO fob ARA range (Class I)

Hydrotreated vegetable oil (HVO) meeting EN15940 specifications. If the EN15940 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Feedstock: RED-compliant food and feed crops

Currency/unit: US dollars/m³

Prices are assessed as a US dollar/m³ premium to HVO-escalated 7-28 day Ice gasoil. Prices are also converted to a US dollar/t premium to HVO-escalated 7-28 day Ice gasoil and to outright US dollar/t prices for publication.

Market information priced as a US dollar/m³ differential to another basis, including but not limited to HVO-escalated French diesel, will be converted to a differential to HVO-escalated 7-28 day Ice gasoil for consideration for inclusion in the assessment.

HVO escalation: HVO typically trades in volumetric terms and is less dense than diesel and gasoil. Accordingly, Argus adjusts the prices of the underlying diesel or gasoil contracts against which HVO trades to an assumed HVO-equivalent density of 0.78kg/l. For the purpose of this escalation, Argus assumes both French diesel and Ice gasoil to have a density of 0.845kg/l in a vacuum at 15°C.

Timing: loading 7-28 days forward of the day of the assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to HVO-escalated 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period and adjusted as described above.

Size: 1,000-2,000t, barge shipping tolerance of +/- 2pc at buyer's option

Cold filter plugging point: maximum -10°C

Cloud point: maximum -7°C

Cetane number: minimum 70

Water content: maximum 200ppm

Fatty acid methyl ester (FAME) content: maximum 0.5pc

Additives: product must not contain additives with the exception of lubricity additives

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Sellers must provide the below certification criteria

- German mandate compliant — any feedstock in line with § 37b of the “Bundes-Immissionsschutzgesetz” and “Biomasseverordnung”
- Registered in Germany’s biomass web application system Nabisy

Certificate of analysis (CoA), regardless of the intended destination of the barge, must include C14 analysis from accredited inspectors, with acceptable results aligned with requirements set out in the framework published by the Dutch Emissions Authority (NEA).

GHG savings: minimum 60pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:00pm to 4:30pm London time

Terms and conditions: trades are conducted under standard industry-acceptable terms and conditions or other pre-agreed terms and conditions

Proof of sustainability: trades must be accompanied by non-palm oil proof of sustainability and must include only standard industry-acceptable proof of sustainability clauses (for example, those of BP and Shell) in compliance with the EU RED. Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of Proof of Sustainability (POS). Documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

RED HVO fob ARA range (Class II)

Hydrotreated vegetable oil (HVO) meeting EN15940 specifications. If the EN15940 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Feedstock: RED-compliant used cooking oil

Currency/unit: US dollars/m³

Prices are assessed as a US dollar/m³ premium to HVO-escalated 7-28 day Ice gasoil. Prices are also published as a US dollar/t premium to HVO-escalated 7-28 day Ice gasoil, outright US dollar/t and US dollar/m³ prices and a US dollar/t premium to front-month Ice gasoil.

Market information priced as a US dollar/m³ differential to another basis, including but not limited to HVO-escalated French diesel, will be converted to a differential to HVO-escalated 7-28 day Ice gasoil for consideration for inclusion in the assessment.

HVO escalation: HVO typically trades in volumetric terms and is less dense than diesel and gasoil. Accordingly, Argus adjusts the prices of the underlying diesel or gasoil contracts against which HVO trades to an assumed HVO-equivalent density of 0.78kg/l. For the purpose of this escalation, Argus assumes both French diesel and Ice gasoil to have a density of 0.845kg/l in a vacuum at 15°C.

Timing: loading 7-28 days forward of the day of the assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to HVO-escalated 7-28 day Ice gasoil, calculated on the day of assessment as the average of

settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period and adjusted as described above.

Size: 1,000-2,000t, barge shipping tolerance of +/- 2pc at buyer’s option

Cold filter plugging point: maximum -10°C

Cloud point: maximum -7°C

Cetane number: minimum 70

Water content: maximum 200ppm

Fatty acid methyl ester (FAME) content: maximum 0.5pc

Additives: product must not contain additives with the exception of lubricity additives

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Sellers must provide the below certification criteria

- German mandate compliant — of used cooking oil feedstock in line with § 37b of the “Bundes-Immissionsschutzgesetz” and “Biomasseverordnung”
- Registered in Germany’s biomass web application system Nabisy

Certificate of analysis (CoA), regardless of the intended destination of the barge, must include C14 analysis from accredited inspectors, with acceptable results aligned with requirements set out in the framework published by the Dutch Emissions Authority (NEA).

GHG savings: minimum 85pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:00pm to 4:30pm London time

Terms and conditions: trades are conducted under standard industry-acceptable terms and conditions or other pre-agreed terms and conditions

Proof of sustainability: trades must be accompanied by proof of sustainability and must include only standard industry-acceptable proof of sustainability clauses (for example, those of BP and Shell) in compliance with the EU RED. Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of Proof of Sustainability (POS). Documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

RED HVO fob ARA range (Class III)

Hydrotreated vegetable oil (HVO) meeting EN15940 specifications. If the EN15940 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Feedstock: RED-compliant tallow (category 3)

Currency/unit: US dollars/m³

Prices are assessed as a US dollar/m³ premium to HVO-escalated 7-28 day Ice gasoil. Prices are also converted to a US dollar/t premium to HVO-escalated 7-28 day Ice gasoil and to outright US dollar/t prices for publication.

Market information priced as a US dollar/m³ differential to another basis, including but not limited to HVO-escalated French diesel, will be converted to a differential to HVO-escalated 7-28 day Ice gasoil for consideration for inclusion in the assessment.

HVO escalation: HVO typically trades in volumetric terms and is less dense than diesel and gasoil. Accordingly, Argus adjusts the

prices of the underlying diesel or gasoil contracts against which HVO trades to an assumed HVO-equivalent density of 0.78kg/l. For the purpose of this escalation, Argus assumes both French diesel and Ice gasoil to have a density of 0.845kg/l in a vacuum at 15°C.

Timing: loading 7-28 days forward of the day of the assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to HVO-escalated 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period and adjusted as described above.

Size: 1,000-2,000t, barge shipping tolerance of +/- 2pc at buyer's option

Cold filter plugging point: maximum -10°C

Cloud point: maximum -7°C

Cetane number: minimum 70

Water content: maximum 200ppm

Fatty acid methyl ester (FAME) content: maximum 0.5pc

Additives: product must not contain additives with the exception of lubricity additives

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Certificate of analysis (CoA), regardless of the intended destination of the barge, must include C14 analysis from accredited inspectors, with acceptable results aligned with requirements set out in the framework published by the Dutch Emissions Authority (NEA).

GHG savings: minimum 82pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:00pm to 4:30pm London time

Terms and conditions: trades are conducted under standard industry-acceptable terms and conditions or other pre-agreed terms and conditions

Proof of sustainability: trades must be accompanied by proof of sustainability and must include only standard industry-acceptable proof of sustainability clauses (for example, those of BP and Shell) in compliance with the EU RED. Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of Proof of Sustainability (POS). Documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

RED HVO fob ARA range (Class IV)

Hydrotreated vegetable oil (HVO) meeting EN15940 specifications. If the EN15940 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Feedstock: RED-compliant palm oil mill effluent (POME) oil

Currency/unit: US dollars/m³

Prices are assessed as a US dollar/m³ premium to HVO-escalated 7-28 day Ice gasoil. Prices are also published as a US dollar/t premium to HVO-escalated 7-28 day Ice gasoil, outright US dollar/t prices and a US dollar/t premium to front-month Ice gasoil.

Market information priced as a US dollar/m³ differential to another basis, including but not limited to HVO-escalated French diesel, will be converted to a differential to HVO-escalated 7-28 day Ice gasoil

for consideration for inclusion in the assessment.

HVO escalation: HVO typically trades in volumetric terms and is less dense than diesel and gasoil. Accordingly, Argus adjusts the prices of the underlying diesel or gasoil contracts against which HVO trades to an assumed HVO-equivalent density of 0.78kg/l. For the purpose of this escalation, Argus assumes both French diesel and Ice gasoil to have a density of 0.845kg/l in a vacuum at 15°C.

Timing: loading 7-28 days forward of the day of the assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to HVO-escalated 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period and adjusted as described above.

Size: 1,000-2,000t, barge shipping tolerance of +/- 2pc at buyer's option

Cold filter plugging point: maximum -10°C

Cloud point: maximum -7°C

Cetane number: minimum 70

Water content: maximum 200ppm

Fatty acid methyl ester (FAME) content: maximum 0.5pc

Additives: product must not contain additives with the exception of lubricity additives

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Sellers must provide the below certification criteria

- German mandate compliant — of POME oil feedstock in line with § 37b of the "Bundes-Immissionsschutzgesetz" and "Biomasseverordnung"
- Registered in Germany's biomass web application system Nabisy

Certificate of analysis (CoA), regardless of the intended destination of the barge, must include C14 analysis from accredited inspectors, with acceptable results aligned with requirements set out in the framework published by the Dutch Emissions Authority (NEA).

GHG savings: minimum 80pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:00pm to 4:30pm London time

Terms and conditions: trades are conducted under standard industry-acceptable terms and conditions or other pre-agreed terms and conditions

Proof of sustainability: trades must be accompanied by proof of sustainability and must include only standard industry-acceptable proof of sustainability clauses (for example, those of BP and Shell) in compliance with the EU RED. Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of Proof of Sustainability (POS). Documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

Asia-Pacific

RED UCOME fob China bulk

Used cooking oil methyl ester meeting EN14214

If the EN14214 specification differs from the Argus specification listed below, the Argus specification takes precedence.

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob China (Tianjin, Tangshan, Lianyungang, Nantong, Taizhou, Jiangyin, Zhangjiagang, Xiamen, Huangpu, Nansha, Zhuhai, Fangchenggang)

Size: 2,500-5,000t

Cold filter plugging point: maximum 5°C

Water content: maximum 400ppm

Oxidation stability: no requirement

Certification: material must be accompanied with RED-compliant certification issued by European Commission-authorized body

GHG savings: 87.5pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ. The material contained in each cargo need only meet the required GHG savings requirement on average, and multiple POS certificates may be attached such that they average to the required GHG savings requirement. All qualities included must be derived from used cooking oil (UCO) feedstock and meet a minimum default GHG savings of 84pc based on a fossil fuel comparator of 94g CO₂ equivalent/MJ.

Assessment time: 4:00-4:30pm Singapore time

Terms and conditions: trades are conducted under standard industry-acceptable terms and conditions (for example those of BP, Shell and TotalEnergies) or other pre-agreed terms and conditions.

Proof of sustainability: trades must include only standard industry-acceptable proof of sustainability clauses (for example, those of BP and Shell) in compliance with the EU RED and must be delivered no later than 30 days after bill of lading. Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of Proof of Sustainability (POS).

Payment: must be made within 5 calendar days after the bill of lading upon receipt of:

- 3/3 bill of lading, or Letter of Indemnity countersigned by first class bank
- Invoice
- Quality and Quantity documentation
- Certificate of origin showing China origin
- Sustainability documents

Sustainability documents can be provided after payment if mutually agreed by the counterparties but must be provided within the time limits set by the appropriate European government body or European Commission-approved auditing body.

RED UCOME fob strait of Malacca bulk

Used cooking oil methyl ester meeting EN14214

If the EN14214 specification differs from the Argus specification listed below, the Argus specification takes precedence.

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob Port Klang, Pasir Gudang, Tanjung Langsat, Singapore

Size: 2,500-5,000t

Cold filter plugging point: maximum 12°C

Water content: maximum 400ppm

Oxidation stability: no requirement

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body.

Sellers must be able to provide the below certification criteria

- German mandate compliant — of used cooking oil feedstock in line with § 37b of the “Bundes-Immissionsschutzgesetz” and “Biomasseverordnung”
- Registered in Germany’s biomass web application system Nabisy

And if requested by the buyer

- UK double-counting eligible — qualified to count double under UK renewable energy for transport laws and regulations

GHG savings: minimum 87.5pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ. The material contained in each cargo need only meet the required GHG savings requirement on average, and multiple POS certificates may be attached such that they average to the required GHG savings requirement. All qualities included must be derived from used cooking oil (UCO) feedstock and meet a minimum GHG savings of 84pc based on a fossil fuel comparator of 94g CO₂ equivalent/MJ.

Assessment time: 4:00-4:30pm Singapore time

Terms and conditions: trades are conducted under standard industry-acceptable terms and conditions (for example those of BP, Shell and Total) or other pre-agreed terms and conditions.

Proof of sustainability: trades must include only standard industry-acceptable proof of sustainability clauses (for example, those of BP and Shell) in compliance with the EU RED and must be delivered no later than 30 days after bill of lading. Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of Proof of Sustainability (POS).

Payment: must be made within 5 calendar days after the bill of lading upon receipt of:

- 3/3 bill of lading, or Letter of Indemnity countersigned by first class bank
- Invoice
- Quality and Quantity documentation
- Certificate of origin
- Sustainability documents

Sustainability documents can be provided after payment if mutually agreed by the counterparties but must be provided within the time limits set by the appropriate European government body or European Commission-approved auditing body.

RED UCO bulk fob China

Used cooking oil as defined by Harmonised System (HS) code 151800. If the HS code 151800 definition differs from the Argus specification listed below, the Argus specification takes precedence.

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob China (Tianjin, Tangshan, Lianyungang, Nantong, Taizhou, Jiangyin, Zhangjiagang, Xiamen, Huangpu, Nansha, Zhuhai, Fangchenggang)

Size: 2,500-5,000t

Total fatty matter: minimum 98pc

Free fatty acids (FFA) as oleic: maximum 7pc

Moisture, impurities and unsaponifiables: maximum 2pc

Ester content: maximum 2pc

Iodine value (IV): minimum 75g iodine/hg

Triglyceride content: minimum 80pc

Phosphorous content: maximum 50ppm

Sulphur content: maximum 50ppm

Wax content: maximum 250ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Material must be used cooking oil entirely of vegetable origin.

Assessment time: 4:00-4:30pm Singapore time

Payment: must be made within 5 calendar days after the bill of lading upon receipt of:

- 3/3 bill of lading, or Letter of Indemnity countersigned by first class bank
- Invoice
- Quality and Quantity documentation
- Certificate of origin showing China origin
- Sustainability documents
- Annex VII under the EU regulation 1013/2006 on shipments of waste

Sustainability documents can be provided after payment if mutually agreed by the counterparties but must be provided within the time limits set by the appropriate European government body or European Commission-approved auditing body.

RED UCO (hydrotreating) bulk fob China

Used cooking oil as defined by Harmonised System (HS) code 151800. If the HS code 151800 definition differs from the Argus specification listed below, the Argus specification takes precedence.

Currency/unit: US dollars/tonne

Timing: loading 30-45days forward of the day of assessment

Location: fob China (Tianjin, Tangshan, Lianyungang, Nantong, Taizhou, Jiangyin, Zhangjiagang, Xiamen, Huangpu, Nansha, Zhuhai, Fangchenggang)

Size: 2,500-5,000t

Free fatty acids (FFA): maximum 8pc

Moisture, impurities and unsaponifiables: maximum 2pc

Ester content: maximum 2pc

Triglyceride content: minimum 80pc

Phosphorous content: maximum 50ppm

Sulphur content: maximum 50ppm

Metals content: maximum 100ppm

Chloride content (total): maximum 50ppm

Nitrogen content: 200ppm

Polyethylene content: maximum 50ppm

Wax content: maximum 250ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Material must be used cooking oil entirely of vegetable origin.

Assessment time: 4:00-4:30pm Singapore time

Payment: must be made within 5 calendar days after the bill of lading upon receipt of:

- 3/3 bill of lading, or Letter of Indemnity countersigned by first class bank
- Invoice
- Quality and Quantity documentation
- Certificate of origin showing China origin
- Sustainability documents

- Annex VII under the EU regulation 1013/2006 on shipments of waste

Sustainability documents can be provided after payment if mutually agreed by the counterparties but must be provided within the time limits set by the appropriate European government body or European Commission-approved auditing body.

UCO fob strait of Malacca bulk

Used cooking oil as defined by Harmonised System (HS) code 151800. If the HS code 151800 definition differs from the Argus specification listed below, the Argus specification takes precedence.

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob Port Klang, Pasir Gudang, Tanjung Langsat, Singapore

Size: 1,000-5,000t

Total fatty matter: minimum 98pc

Free fatty acids (FFA): maximum 5pc

Moisture and impurities (MIU): maximum 2pc

Moisture: maximum 1pc

Unsaponifiables: maximum 1pc

Ester content: maximum 1pc

Iodine value (IV): minimum 50g iodine/hg

Phosphorous content: maximum 50ppm

Sulphur content: maximum 50ppm

Wax content: maximum 250ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Material must be used cooking oil entirely of vegetable origin.

Assessment time: 4:00-4:30pm Singapore time

Payment: must be made within 5 calendar days after the bill of lading upon receipt of:

- 3/3 bill of lading, or Letter of Indemnity countersigned by first class bank
- Invoice
- Quality and Quantity documentation
- Certificate of origin issued by relevant authorities
- Sustainability documents
- Annex VII under the EU regulation 1013/2006 on shipments of waste

Sustainability documents can be provided after payment if mutually agreed by the counterparties but must be provided within the time limits set by the appropriate European government body or European Commission-approved auditing body.

Spot price assessments

Europe biofuels

RED Soya OME fob ARA range

Soya oil methyl ester meeting EN14214 specifications. If the EN14214 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Currency/unit: US dollars/tonne

Timing: loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period

Size: 1,000t

Cold filter plugging point: -4°C

Certification: material must be accompanied with RED-compliant certification issued by European Commission-approved auditing body.

GHG savings: biodiesel from installations that started operations after 5 October 2015 must have a minimum of 60pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ.

Assessment time: 4:00pm to 4:30pm London time

RED Fame -10°C CFPP fob ARA range

Fatty acid methyl ester meeting EN14214 specifications

If the EN14214 specification differs from the Argus specification listed below, the Argus specification takes precedence.

Calculated as the sum of 10pc of the Argus assessment of FAME 0°C CFPP fob ARA range and 90pc of the Argus assessment of RED rapeseed OME fob ARA range.

EU duty free or EU duty paid

Currency/unit: US dollars/tonne

Timing: loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period

Size: 1,000t

Cold filter plugging point: -10°C

Certification: material must be accompanied with RED-compliant certification issued by European Commission-authorized body

GHG savings: 60pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:00pm to 4:30pm London time

RED Tallow OME fob ARA range

Tallow methyl ester meeting EN14214

If the EN14214 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Currency/unit: US dollars/tonne

Timing: loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Size: 1,000t

Cold filter plugging point: 12-13°C

Water content: maximum 350ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

GHG savings: minimum 78pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:00pm to 4:30pm London time

RED POME OME fob ARA range

Palm oil mill effluent (POME) oil methyl ester meeting EN14214 specifications

If the EN14214 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Feedstock: RED-compliant POME oil

Currency/unit: US dollars/tonne

Timing: loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period

Size: 1,000t

Cold filter plugging point: 10°C

Certification: material must be accompanied with RED-compliant certification issued by European Commission-approved auditing body

GHG savings: minimum 80pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:00pm to 4:30pm London time

Europe feedstocks

Rapeseed oil (RSO)

Argus Biofuels includes spot and forward prices for crude rapeseed oil (RSO) on a fob Dutch mill basis. Prices are published for prompt loading and for loading during the first three of the forward quarters listed below.

- February, March, April (FMA)
- May, June, July (MJJ)
- August, September, October (ASO)
- November, December, January (NDJ)

See the [Argus AgriMarkets methodology](#).

Crude sunflower oil (SFO)

Fob northwest Europe ("fob 6 ports") for delivery during the first forward quarter. See the [Argus AgriMarkets methodology](#).

UCO cif ARA

Used cooking oil

EU duty unpaid

Currency/unit: US dollars/tonne

Timing: delivery 30-45 days forward of the day of assessment

Location: cif ARA

Parcel size: 500-1,000t

Free fatty acids (FFA): 5pc

Moisture, impurities and unsaponifiable (MIU): maximum 2pc

Iodine value (IV): minimum 80g iodine/hg

Sulphur content: maximum 50ppm

Certification: material must be accompanied with RED-compliant certification issued by European Commission-authorized body

Assessment time: 4:30pm London time

UCO ex-works ARA range

Used cooking oil

EU duty free or EU duty paid

Currency/unit: euros/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: ex-works ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Parcel size: 100-500t

Free fatty acids (FFA): 5pc

Moisture, impurities and unsaponifiable (MIU): maximum 2pc

Iodine value (IV): minimum 70g iodine/hg

Sulphur content: maximum 50ppm

Certification: material must be accompanied with RED-compliant certification issued by European Commission-authorized body

Assessment time: 4:30pm London time

Tallow (categories 1 and 2) fca northwest Europe

Animal fats derived from category 1 and category 2 materials as per Regulation (EC) No 1069/2009 (Article 3, No 19) and 142/2011. If the (EC) No 1069/2009 and 142/2011 specifications differ from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Currency/unit: euros/tonne

Timing: delivery 30-45 days forward of the day of assessment

Location: fca northwest Europe

Parcel size: 100-1,000t

Free fatty acids (FFA): 20pc

Moisture, impurities and unsaponifiable (MIU): maximum 1pc

Certification: material must be accompanied with RED-compliant certification issued by European Commission-authorized body

Assessment time: 4:30pm London time

Tallow (category 3) fca northwest Europe

Animal fats derived from category 3 materials as per Regulation (EC) No 1069/2009 (Article 3, No 19) and 142/2011. If the (EC) No 1069/2009 and 142/2011 specifications differ from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Currency/unit: euros/tonne

Timing: delivery 30-45 days forward of the day of assessment

Location: fca northwest Europe

Parcel size: 100-1,000t

Free fatty acids (FFA): maximum 5pc

Moisture, impurities and unsaponifiable (MIU): maximum 2pc

Certification: material must be accompanied with RED-compliant certification issued by European Commission-authorized body

Assessment time: 4:30pm London time

POME oil cif ARA

Palm oil mill effluent (POME) oil

EU duty unpaid

Currency/unit: US dollars/tonne

Timing: delivery 30-45 days forward of the day of assessment

Location: cif ARA

Size: 2,000-5,000t

Total fatty matter (TFM): minimum 95pc

Free fatty acids (FFA): minimum 30pc

Moisture & impurities (M&I): maximum 3pc

Certification: material must be accompanied with RED-compliant certification issued by European Commission-authorized body

Assessment time: 4:30pm London time

Soapstock acid oil cif ARA

EU duty free or EU duty paid

Currency/unit: US dollars/tonne

Timing: delivery 30-45 days forward of the day of assessment

Location: cif ARA

Size: 100-1,000t

Free fatty acids (FFA) as oleic: maximum 70pc

Moisture, impurities and unsaponifiables (MIU): maximum 3pc

Iodine value (IV): minimum 80g iodine/hg

Sulphur content: maximum 500ppm

Certification: material must be accompanied with RED-compliant certification issued by European Commission-authorized body

Assessment time: 4:30pm London time

Asia-Pacific biofuels

RED HVO fob China (Class II)

Hydrotreated vegetable oil (HVO) meeting EN15940 specifications. If the EN15940 specification differs from the Argus specification listed below, the Argus specification takes precedence.

Feedstock: RED-compliant used cooking oil

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob China

Size: assessments are standardised to cargoes of 3,000-5,000t

Cold filter plugging point: maximum -10°C

Cloud Point: maximum -7°C

Water content: 200ppm

Lubricity HFRR at 60°C: maximum 600µm

Biogenic carbon by C14: minimum 97pc

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

GHG savings: minimum 85pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:30pm Singapore time

RED HVO fob China (Class IV)

Hydrotreated vegetable oil (HVO) meeting EN15940 specifications. If the EN15940 specification differs from the Argus specification listed below, the Argus specification takes precedence.

Feedstock: RED-compliant palm oil mill effluent (POME) oil

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob China

Size: assessments are standardised to cargoes of 3,000-5,000t

Cold filter plugging point: maximum -10°C

Cloud Point: maximum -7°C

Water content: 200ppm

Lubricity HFRR at 60°C: maximum 660µm

Biogenic carbon by C14 analysis: minimum 97pc

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

GHG savings: minimum 80pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:30pm Singapore time

RED HVO fob strait of Malacca

Hydrotreated vegetable oil (HVO) meeting EN15940 specifications. If the EN15940 specification differs from the Argus specification listed below, the Argus specification takes precedence.

Feedstock: RED-compliant used cooking oil

Currency/unit: US dollars/tonne

Timing: loading 25-45 days forward of the day of the assessment
Location: fob Singapore, Port Klang, Pasir Gudang, Tanjung Langsat. Prices in other southeast Asian locations including Indonesia and Thailand may be considered for inclusion in the assessment if deemed relevant to the above locations.

Size: assessments are standardised to cargoes of 5,000-10,000t

Cold filter plugging point: maximum -10°C

Cloud point: maximum -7°C

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body.

GHG savings: minimum 85pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:30pm Singapore time

RED brown grease methyl ester fob China

Brown grease methyl ester meeting EN14214

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob China

Size: 3,000-5,000t

Water content: maximum 350ppm

Cold filter plugging point: maximum 5°C

GHG savings: default 87.5pc

Certification: material must be accompanied with RED-compliant certification issued by European Commission-authorized body

Assessment time: 4:30pm Singapore time

RED POME OME fob China bulk

Palm oil mill effluent (POME) oil methyl ester meeting EN14214 specifications

If the EN14214 specification differs from the Argus specification listed below, the Argus specification takes precedence.

Feedstock: RED-compliant POME oil

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob China

Size: 2,500-5,000t

Water content: maximum 400 ppm

Cold filter plugging point: maximum 13°C

GHG savings: minimum 80pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

Assessment time: 4:30pm Singapore time

Asia-Pacific feedstocks

UCO fob China

Used cooking oil

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob China

Size: 500-1,000t

Free fatty acids (FFA): maximum 7pc

Moisture, impurities and unsaponifiable (MIU): maximum 2pc

Iodine value (IV): minimum 80g iodine/hg

Sulphur content: maximum 50ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

Assessment time: 4:30pm Singapore time

UCO dap China

Used cooking oil (including VAT)

Currency/unit: Chinese yuan/tonne and converted to US dollars/tonne

Timing: loading 10-30 days forward of the day of assessment

Location: dap China

Size: 200-2,000t

Free fatty acids (FFA): maximum 7pc

Moisture, impurities and unsaponifiable (MIU): maximum 2pc

Iodine value (IV): minimum 80g iodine/hg

Sulphur content: maximum 50ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

Assessment time: 4:30pm Singapore time

RED UCO (hydrotreating) dap China

Used cooking oil (including VAT)

Currency/unit: Chinese yuan/tonne and converted to US dollars/tonne

Timing: delivering 10-30 days forward of the day of assessment

Location: dap China

Size: 200-2,000t

Free fatty acids (FFA): maximum 10pc

Moisture, impurities and unsaponifiables (MIU): maximum 2pc

Ester content: maximum 2pc

Iodine value (IV): minimum 70g iodine/hg

Phosphorus content: maximum 50ppm

Sulphur content: maximum 50ppm

Metals content (total, excluding phosphorus): maximum 100ppm

Chloride content (total): maximum 50ppm

Nitrogen content: maximum 150ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Material must be used cooking oil entirely of vegetable origin

Assessment time: 4:30pm Singapore time

EPA-compliant UCO fob China bulk

Used cooking oil as defined by Harmonised System (HS) code 151800. If the HS code 151800 definition differs from the Argus specification listed below, the Argus specification takes precedence.

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob China (Tianjin, Tangshan, Lianyungang, Nantong,

Taizhou, Jianguyin, Zhangjiagang, Xiamen, Huangpu, Nansha, Zhuhai, Fangchenggang)

Size: 2,500-5,000t

Free fatty acids (FFA): maximum 15pc

Moisture, impurities and unsaponifiable (MIU): maximum 2pc

Certification: material must comply with US Environmental Protection Agency (EPA) requirements. Records demonstrating the traceability of the UCO must be provided to the buyer upon sale of product or stored on the buyer's behalf within an EPA-compliant recordkeeping platform. Material to be accompanied by a health veterinary certificate issued by an official government body in the exporting country provided by the seller. Material may be used cooking oil of animal or vegetable origin. Any relevant Import permits must be obtained by the importer. Material must also be accompanied with RED-compliant certification issued by a European Commission-approved auditing body.

Assessment time: 4:30pm Singapore time

EPA-compliant UCO fob strait of Malacca bulk

Used cooking oil as defined by Harmonised System (HS) code 151800. If the HS code 151800 definition differs from the Argus specification listed below, the Argus specification takes precedence.

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob Port Klang, Pasir Gudang, Tanjung Langsat, Singapore

Size: 2,500-5,000t

Free fatty acids (FFA): maximum 15pc

Moisture, impurities and unsaponifiable (MIU): maximum 2pc

Certification: material must comply with US Environmental Protection Agency (EPA) requirements. Records demonstrating the traceability of the UCO must be provided to the buyer upon sale of product or stored on the buyer's behalf within an EPA-compliant recordkeeping platform. Material to be accompanied by a health veterinary certificate issued by an official government body in the exporting country provided by the seller. Material may be used cooking oil of animal or vegetable origin. Any relevant Import permits must be obtained by the importer. Material must also be accompanied with RED-compliant certification issued by a European Commission-approved auditing body.

Assessment time: 4:30pm Singapore time

Brown grease DAP China

Brown grease (including VAT)

Currency/unit: Chinese yuan/tonne and converted to US dollars/tonne

Timing: delivery 7-10 days forward of the day of assessment

Location: dap China

Size: 200-1,000t

Moisture and impurities (MIU): maximum 3pc

Unsaponifiables: maximum 2pc

Saponification value (SV): minimum 185mg KOH/g

Iodine value (IV): minimum 60g iodine/hg

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

Assessment time: 4:30pm Singapore time

UCO fob Indonesia

Used cooking oil

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob Indonesia (Belawan, Gresik, Jakarta, Semarang and Makassar)

Size: 500-1,000t

Free fatty acids (FFA): maximum 5pc

Moisture, impurities and unsaponifiable (MIU): maximum 2pc

Iodine value (IV): minimum 50g iodine/hg

Sulphur content: maximum 50ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

Assessment time: 4:30pm Singapore time

UCO fob Vietnam

Used cooking oil

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob Vietnam

Size: 200-1,000t

Free fatty acids (FFA): maximum 5pc

Moisture and impurities (MIU): maximum 2pc

Unsaponifiables: maximum 1pc

Iodine value (IV): minimum 60g iodine/hg

Sulphur content: maximum 50ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

Assessment time: 4:30pm Singapore time

RED UCO (hydrotreating) dap Malaysia

Domestic used cooking oil (UCO) of Malaysian and entirely vegetable origin

Currency/unit: US dollars/tonne

Timing: delivering 10-30 days forward of the day of assessment

Location: dap Port Klang, Pasir Gudang, Tanjung Langsat

Size: 200-2,000t

Free fatty acids (FFA): maximum 5pc

Moisture, impurities and unsaponifiables (MIU): maximum 2pc

Ester content: maximum 2pc

Iodine value (IV): minimum 50g iodine/hg

Phosphorus content: maximum 50ppm

Sulphur content: maximum 50ppm

Metals content (total, excluding phosphorus): maximum 100ppm

Chloride content (total): maximum 50ppm

Nitrogen content: maximum 150ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Material must be used cooking oil entirely of vegetable origin

Assessment time: 4:30pm Singapore time

RED UCO (hydrotreating) bulk fob strait of Malacca

Used cooking oil as defined by Harmonised System (HS) code 151800. If the HS code 151800 definition differs from the Argus specification listed below, the Argus specification takes precedence.

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob Port Klang, Pasir Gudang, Tanjung Langsat, Singapore

Size: 1,000-5,000t

Free fatty acids (FFA): maximum 5pc

Moisture, impurities and unsaponifiable (MIU): maximum 2pc

Ester content: maximum 2pc

Phosphorous content: maximum 50ppm

Sulphur content: maximum 50ppm

Metals content (total, excluding phosphorus): maximum 100ppm

Chloride content (total): maximum 50ppm

Nitrogen content: maximum 200ppm

Wax content: maximum 250ppm

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Material must be used cooking oil entirely of vegetable origin

Assessment time: 4:30pm Singapore time

POME oil fob Indonesia

Palm oil mill effluent (POME) oil

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob Indonesia (Dumai/Belawan)

Size: 2,000-5,000t

Total fatty matter (TFM): minimum 95pc

Free fatty acids (FFA): minimum 30pc

Moisture & impurities (M&I): maximum 3pc

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

Assessment time: 4:30pm Singapore time

RED refined POME oil fob Indonesia

Palm oil mill effluent (POME) oil that has been pre-treated and refined

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob Indonesia (Dumai/Belawan)

Size: 2,000-5,000t

Free fatty acids (FFA): maximum 5pc

Moisture & impurities (M&I): maximum 1pc

Iodine value (IV): 50-55g iodine/hg

Unsaponifiables: maximum 2pc

Total metals: maximum 100ppm

Lovibond colour: minimum 3 red

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

Assessment time: 4:30pm Singapore time

POME oil fob Malaysia

Palm oil mill effluent (POME) oil

Currency/unit: US dollars/tonne

Timing: loading 30-45 days forward of the day of assessment

Location: fob Malaysia (Port Klang/Pasir Gudang/Lahad Datu)

Size: 2,000-5,000t

Total fatty matter (TFM): minimum 95pc

Free fatty acids (FFA): minimum 30pc

Moisture & impurities (M&I): maximum 3pc

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

Assessment time: 4:30pm Singapore time

RBD palm olein fob Malaysia/Indonesia

Currency/unit: US dollars/tonne

Size: 500-2,000t bulk

Timing: loading 2-4 weeks forward of the day of assessment

Fatty acid: maximum 0.1pc

Moisture and impurities: maximum 0.1pc

Iodine value: minimum of 56g iodine/hg

Melting point: maximum 24°C

Lovibond colour: minimum 3 red

Assessment time: 4:30pm Singapore time

Prices are published for the first three months trading

Tallow fob east coast Australia

Tallow is assessed each week as a low-high range of prices in the market since the last assessment based on conversations with market participants. Prices are for export tallow acceptable for import to or as feedstock for the production of biofuels for the US and European Union.

Currency/unit: US dollars/tonne

Timing: loading 30-90 days forward of the day of assessment

Location: fob east coast Australia (Brisbane and Melbourne ports)

Size: 5,000-20,000t

Free Fatty Acids (FFA): maximum 4pc, categories as defined by Grain Trade Australia

Moisture, impurities and unsaponifiables (MIU): maximum 1pc

Assessment time: 4:30pm Singapore time on Tuesdays

Tallow dap east coast Australia

Tallow is assessed each week as a low-high range of prices in the market since the last assessment based on conversations with market participants. Prices are for export tallow acceptable for import to or as feedstock for the production of biofuels for the US and European Union.

Currency/unit: Australian dollars/tonne

Timing: delivering 10-45 days forward of the day of assessment

Location: dap east coast Australia (Brisbane and Melbourne)

Size: 200-2,000t

Free Fatty Acids (FFA): maximum 2pc, categories as defined by Grain Trade Australia

Moisture, impurities and unsaponifiables (MIU): maximum 1pc

Assessment time: 4:30pm Singapore time on Tuesdays

Americas biofuels

Published prices are the previous day's close in the US. See the [Argus Americas Biofuels methodology](#).

- SME fob upriver, Argentina
- Argentinian soybean oil
- SME fob US Houston B100
- SME fob US Houston B100 €/USG

Alternative aviation fuels

Hydrotreated esters and fatty acids (HEFA-SPK)

RED SAF HEFA-SPK fob ARA range

Synthesised paraffinic kerosine from hydrotreated esters and fatty acids (HEFA-SPK) meeting ASTM D7566 specifications

EU duty free or EU duty paid

Included Pathways: Synthesised Paraffinic Kerosine from hydro-treated esters and fatty acids (HEFA)

Feedstock: RED-compliant used cooking oil

Currency/unit: US dollars/m³

Prices are assessed as a differential to SAF-escalated 7-28 day Ice gasoil. Outright and differential prices are also published in \$/t. Market information priced as a differential to another basis, including but not limited to northwest Europe jet fuel, will be converted for consideration for inclusion in the assessment.

SAF escalation: HEFA-SPK typically trades in volumetric terms and is less dense than gasoil. Accordingly, Argus will adjust the prices of the underlying gasoil contract against which HEFA-SPK is assessed to an assumed density of 0.76 kg/litre. For the purpose of this escalation, Argus assumes Ice gasoil to have a density of 0.845 kg/litre in a vacuum at 15°C.

Timing: loading 7-28 days forward of the day of the assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to SAF-escalated 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period and adjusted as described above.

Size: 1,000t, barge shipping tolerance of +/- 2pc at buyer's option

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body. Sellers must be able to provide the below certification criteria and, in addition, buyers must declare the relevant certification scheme when nominating barges

Certificate of analysis (CoA): regardless of the intended destination of the barge, must include C14 analysis from accredited inspectors, with acceptable results aligned with requirements set out in the framework published by the Dutch Emissions Authority (NEA).

GHG savings: minimum 80pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:00pm-4:30pm London time

Proof of sustainability: trades must be accompanied by proof of sustainability (POS) and must include only standard industry-acceptable proof of sustainability clauses in compliance with the EU RED. Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of POS. Documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

RED SAF HEFA-SPK cif northwest Europe

Synthesised paraffinic kerosine from hydrotreated esters and fatty acids (HEFA-SPK) meeting ASTM D7566 specifications

EU duty free or EU duty paid

Included Pathways: Synthesised Paraffinic Kerosine from hydro-treated esters and fatty acids (HEFA)

Feedstock: RED-compliant used cooking oil

Currency/unit: US dollars/m³

Prices are assessed as a differential to SAF-escalated 7-28 day Ice gasoil. Outright and differential prices are also published in \$/t. Market information priced as a differential to another basis, including but not limited to northwest Europe jet fuel, will be converted for consideration for inclusion in the assessment.

SAF escalation: HEFA-SPK typically trades in volumetric terms and is less dense than gasoil. Accordingly, Argus will adjust the prices of the underlying gasoil contract against which HEFA-SPK is assessed to an assumed density of 0.76 kg/litre. For the purpose of this escalation, Argus assumes Ice gasoil to have a density of 0.845 kg/litre in a vacuum at 15°C.

Timing: delivery 10-25 days forward of the day of the assessment

Location: cif northwest Europe standardised to ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Basis: assessed as a differential to SAF-escalated 7-28 day Ice gasoil, calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period and adjusted as described above.

Size: 5,000-10,000t

Certification: material must be accompanied by RED-compliant certification issued by a European Commission-approved auditing body and proof of sustainability (POS) and must include only standard industry-acceptable POS clauses in compliance with the EU RED

GHG savings: minimum 80pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:00pm-4:30pm London time

e-SAF cost, Netherlands

See the [Argus Hydrogen and Future Fuels methodology](#).

HEFA-SPK - jet CO₂ abatement northwest Europe

The cost of abating a tonne of CO₂-equivalent (CO₂e) GHG emissions by consuming HEFA-SPK rather than jet fuel.

Calculated as the difference between the Argus RED SAF fob ARA range and the Argus cif northwest Europe jet/kerosine assessments, divided by the difference in CO₂ emissions for the two fuels. Both fuel price and emissions are adjusted for the difference in energy content between HEFA-SPK and jet/kerosine.

HEFA-SPK is assumed to have a lower heating (calorific) value (LHV/LCV) of 44 GJ/t and jet/kerosine of 43 GJ/t. HEFA-SPK is assumed to emit 0.827t of CO₂/t of fuel and jet/kerosine is assumed to emit 4.042t of CO₂/t of fuel.

Prices are published in \$/t CO₂e.

RED SAF (HEFA-SPK) fob strait of Malacca

Synthesised paraffinic kerosine from hydrotreated esters and fatty acids (HEFA-SPK) meeting ASTM D7566 specifications

Feedstock: RED-compliant used cooking oil

Currency/unit: US dollars/t

Timing: loading 25-45 days forward of the day of assessment

Location: Singapore, Port Klang, Pasir Gudang, Tanjung Langsat. Prices in other southeast Asian locations including Indonesia and Thailand may be considered for inclusion in the assessment if deemed relevant to the above locations.

Size: assessments are standardised to cargoes of 5,000-10,000t

Certification: material must be accompanied with RED-compliant certification.

GHG savings: minimum 80pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:30pm Singapore time

Corsia SAF (HEFA-SPK) fob strait of Malacca

Synthesised paraffinic kerosine from hydrotreated esters and fatty acids (HEFA-SPK) meeting ASTM D7566 specifications

Feedstock: Corsia-certified used cooking oil

Currency/unit: US dollars/t

Timing: loading 25-45 days forward of the day of assessment

Location: Singapore, Port Klang, Pasir Gudang, Tanjung Langsat. Prices in other southeast Asian locations including Indonesia and Thailand may be considered for inclusion in the assessment if deemed relevant to the above locations.

Size: assessments are standardised to cargoes of 1,000-5,000t

Certification: material must be accompanied with Corsia-compliant certification issued by an ICAO-approved auditing body

GHG savings: minimum 79pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 89g CO₂ equivalent/MJ

Assessment time: 4:30pm Singapore time

Strait of Malacca HEFA-SPK - jet-kerosine CO₂ abatement

The cost of abating a tonne of CO₂-equivalent (CO₂e) GHG emissions by consuming HEFA-SPK rather than jet fuel.

Calculated as the difference between the Argus RED SAF (HEFA-SPK) fob strait of Malacca and the Argus prompt Singapore jet/kerosine assessments, divided by the difference in CO₂ emissions for the two fuels.

Both fuel price and emissions are adjusted for the difference in energy content between HEFA-SPK and jet/kerosine.

HEFA-SPK is assumed to have a lower heating (calorific) value (LHV/LCV) of 44 GJ/t and jet/kerosine of 43 GJ/t. HEFA-SPK is assumed to emit 0.827t of CO₂/t of fuel and jet/kerosine is assumed to emit 4.056t of CO₂/t of fuel.

Prices are published in \$/t CO₂e.

SAF HEFA-SPK fob China

Synthesised paraffinic kerosine from hydrotreated esters and fatty acids (HEFA-SPK) meeting ASTM D7566 specifications

Included Pathways: Synthesised Paraffinic Kerosine from hydro-treated esters and fatty acids (HEFA)

Feedstock: Corsia or RED-compliant used cooking oil

Currency/unit: US dollars/t

Timing: loading 30-45 days forward of the day of assessment

Location: fob China

Size: assessments are standardised to cargoes of 3,000-5,000t

Biogenic carbon by C14: minimum 97pc

Certification: material must be accompanied with Corsia or RED-compliant certification. Note, the Argus assessment is the price of product meeting either standard and accompanied by the relevant documentation and is not a requirement that sellers offer product meeting both standards.

GHG savings: minimum 80pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:30pm Singapore time

Alternative marine fuels

Marine biodiesel blend

RED B30 marine UCOME dob ARA range

B30 marine biodiesel and VLSFO blend meeting ISO 8217 Used cooking oil methyl ester meeting EN14214 (30pc) and 0.5%S 380cst fuel oil (70pc).

Currency/unit: US dollars/tonne

Timing: delivery 5-30 days forward of the day of assessment

Location: dob ARA (Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing, Ghent and Zeebrugge)

Size: minimum 200t

Certification: biofuel must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

Assessment time: 5:30pm London time

See the [Argus Marine Fuels methodology](#) for information about Argus bunker fuel coverage.

RED marine Advanced Fame 0°C CFPP dob ARA range

Calculated and published in US dollars/tonne as B30 and B100 blend ratios of RED Advanced Fame 0°C CFPP fob ARA range and 0.5%S 380cst fuel oil dob ARA. Calculation includes variable costs associated with storage, throughput and transport that are regularly reviewed. For example, B20 is a blend of 20pc biodiesel and 80pc fuel oil and B100 is 100pc biodiesel.

Currency/unit: US dollars/tonne

Size: 1,000-3,000t

See the [Argus Marine Fuels methodology](#) for information about Argus bunker fuel coverage. Prices are calculated using the latest available component values.

B24 marine UCOME dob Algeciras-Gibraltar

B24 marine biodiesel and VLSFO blend meeting ISO 8217
Used cooking oil methyl ester meeting EN14214 (24pc) and 0.5%S
380cst fuel oil (76pc)

Currency/unit: US dollars/tonne

Timing: delivery 5-30 days forward of the day of assessment

Location: dob Algeciras-Gibraltar

Size: minimum 200t

Certification: biofuel must be accompanied by RED-compliant certification issued by a European Commission-approved auditing body

Assessment time: 5:30pm London time

See the [Argus Marine Fuels methodology](#) for information about Argus bunker fuel coverage.

RED B30 Advanced Fame and VLSFO dob Netherlands

B30 marine biodiesel and VLSFO blend meeting ISO 8217
Advanced fatty acid methyl ester meeting EN14214 (30pc) and
0.5%S 380cst fuel oil (70pc).

EU duty free or EU duty paid

Size: minimum 200t

Delivery: 5-30 days forward of the day of assessment, delivered on board

Location: Amsterdam and Rotterdam, prices at other Dutch ports may be considered for inclusion in the assessment if deemed relevant to the price at Amsterdam and Rotterdam.

Certification: biofuel must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body and be compliant with RED Annex IX Part A and considered advanced in the Netherlands, inclusive of definitions listed in Annex V of the Regeling energie Vervoer

Assessment time: 5:30pm London time

RED B30 Advanced Fame and MGO dob Netherlands

B30 marine biodiesel and MGO blend meeting ISO 8217.
Advanced fatty acid methyl ester meeting EN14214 (30pc) and
0.1%S Gasoil Bunker (70pc).

EU duty free or EU duty paid

Size: minimum 200t

Delivery: 5-30 days forward of the day of assessment, delivered on board

Location: Amsterdam and Rotterdam, prices at other Dutch ports may be considered for inclusion in the assessment if deemed relevant to the price at Amsterdam and Rotterdam.

Certification: biofuel must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body and be compliant with RED Annex IX Part A and considered advanced in the Netherlands, inclusive of definitions listed in Annex V of the Regeling energie Vervoer

Assessment time: 5:30pm London time

RED B100 Advanced Fame dob Netherlands

Advanced fatty acid methyl ester marine biodiesel meeting EN14214
EU duty free or EU duty paid

Size: minimum 200t

Delivery: 5-30 days forward of the day of assessment

Location: Amsterdam and Rotterdam, prices at other Dutch ports may be considered for inclusion in the assessment if deemed relevant to the price at Amsterdam and Rotterdam.

Certification: biofuel must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body and be compliant with RED Annex IX Part A and considered advanced in the Netherlands, inclusive of definitions listed in Annex V of the Regeling energie Vervoer

Assessment time: 5:30pm London time

B24 marine UCOME dob Singapore

B24 marine biodiesel and VLSFO blend meeting ISO 8217
Used cooking oil methyl ester meeting EN14214 (24pc) and 0.5%S
380cst fuel oil (76pc).

Currency/unit: US dollars/tonne

Timing: delivery 4-12 days forward of the day of assessment

Location: dob Singapore

Size: 300-3,000t

Certification: biofuel must be accompanied by ISCC or similar certification

Assessment time: 7pm Singapore time

See the [Argus Marine Fuels methodology](#) for information about Argus bunker fuel coverage.

B30 marine UCOME dob Singapore

B30 marine biodiesel and VLSFO blend meeting ISO 8217
Used cooking oil methyl ester meeting EN14214 (30pc) and 0.5%S
380cst fuel oil (70pc).

Currency/unit: US dollars/tonne

Timing: delivery 4-12 days forward of the day of assessment

Location: dob Singapore

Size: 300-3,000t

Certification: biofuel must be accompanied by ISCC or similar certification

Assessment time: 7pm Singapore time

See the [Argus Marine Fuels methodology](#) for information about Argus bunker fuel coverage.

B24 marine UCOME dob Guangzhou

B24 marine biodiesel and VLSFO blend meeting ISO 8217
Used cooking oil methyl ester meeting EN14214 (24pc) and 0.5%S
380cst fuel oil (76pc).

Currency/unit: US dollars/tonne

Timing: delivery 4-15 days forward of the day of assessment

Location: dob Guangzhou

Size: 300-3,000t

Certification: biofuel must be accompanied by ISCC or similar certification

Assessment time: 7pm Singapore time

See the [Argus Marine Fuels methodology](#) for information about Argus bunker fuel coverage.

B24 marine UCOME dob Fujairah

Calculated as the B24 marine UCOME dob Singapore assessment plus freight costs from Singapore. Published in US dollars/tonne.
See the [Argus Marine Fuels methodology](#).

Bio-LNG bunker dob Europe

The calculated spot price of bio-LNG bunkers. Prices are calculated separately for delivery on board at ports in northwest Europe and the west Mediterranean, each using subsidised and unsubsidised Dutch waste-based and subsidised and unsubsidised manure-based renewable gas guarantee of origin (RGGO) certificate prices. See the [Argus LNG Daily methodology](#).

FuelEU costs

FuelEU UCOME-MGO abatement

The cost of abating a tonne of CO₂-equivalent (CO_{2e}) GHG emissions by fuelling a vessel with UCOME rather than MGO. Calculated as the difference between the Argus RED Ucome fob ARA range and Argus 0.1%S MGO fob northwest Europe barge price assessments, divided by the difference in well-to-wake (W2W) emissions for the two fuels.

Both fuel price and emissions are adjusted for the difference in energy content between UCOME and MGO. UCOME is assumed to have a lower calorific value (LCV) of 37 GJ/t and MGO of 42.7 GJ/t in line with RED Annex III and the FuelEU Maritime default as per regulation (EU) 2023/1805.

Well-to-wake emissions are based on standard values laid out in regulation (EU) 2023/1805 and include CO₂, CH₄ and N₂O emissions using AR4 values from the IPCC, in line with the current FuelEU Maritime standard.

Prices are published in €/t CO_{2e} and \$/t CO_{2e}.

FuelEU UCOME-MGO abatement ex-ETS

The price of FuelEU UCOME-MGO abatement described above, less the price of 1t of EU ETS spot allowances. FuelEU UCOME-MGO abatement ex ETS prices are published in €/t CO_{2e} and \$/t CO_{2e}.

FuelEU UCOME-VLSFO abatement

The cost of abating a tonne of CO₂ equivalent (CO_{2e}) GHG emissions by fuelling a vessel with UCOME rather than VLSFO. Calculated as the difference between the Argus RED UCOME fob ARA range and Argus 0.5%S fuel oil fob northwest Europe barge price assessments, divided by the difference in well-to-wake (W2W) emissions for the two fuels.

Both fuel price and emissions are adjusted for the difference in energy content between UCOME and VLSFO. UCOME is assumed to have a lower calorific value (LCV) of 37 GJ/t and VLSFO of 40.5 GJ/t in line with RED Annex III and the FuelEU Maritime default as per regulation (EU) 2023/1805.

Well-to-wake emissions are based on standard values laid out in regulation (EU) 2023/1805 and include CO₂, CH₄ and N₂O emissions using AR4 values from the IPCC, in line with the current FuelEU Maritime standard.

Prices are published in €/t CO_{2e} and \$/t CO_{2e}.

FuelEU UCOME-VLSFO abatement ex-ETS

The price of FuelEU UCOME-VLSFO abatement described above, less the price of 1t of EU ETS spot allowances. FuelEU UCOME-VLSFO abatement ex ETS prices are published in €/t CO_{2e} and \$/t CO_{2e}.

FuelEU MGO penalty

The €/t CO_{2e} and \$/t CO_{2e} penalty price of failing to meet CO_{2e} abatement requirements under FuelEU Maritime regulations by fuelling a vessel with MGO. The calculation assumes a €2,400/t of 41 GJ/t fuel oil equivalent penalty as in the current FuelEU Maritime standard adjusted for the 42.7 GJ/t assumed energy content of MGO and converted using the well-to-wake emissions for MGO.

Well-to-wake emissions are based on standard values laid out in regulation (EU) 2023/1805 and include CO₂, CH₄ and N₂O emissions using AR4 values from the IPCC, in line with the current FuelEU Maritime standard.

FuelEU VLSFO penalty

The €/t CO_{2e} and \$/t CO_{2e} penalty price of failing to meet CO_{2e} abatement requirements under FuelEU Maritime regulations by fuelling a vessel with VLSFO. The calculation assumes a €2,400/t of 41 GJ/t fuel oil equivalent penalty as in the current FuelEU Maritime standard adjusted for the 40.5 GJ/t assumed energy content of VLSFO and converted using the well-to-wake emissions for VLSFO.

Well-to-wake emissions are based on standard values laid out in regulation (EU) 2023/1805 and include CO₂, CH₄ and N₂O emissions using AR4 values from the IPCC, in line with the current FuelEU Maritime standard.

EU ETS (maritime sector)

The spot EU ETS price. The history of the series shows the phased extension of the EU ETS to the maritime transport sector. See the [Argus Carbon methodology](#).

Ethanol

RED Netherlands waste-based ethanol fob ARA range

Anhydrous, undenatured ethanol meeting EN15376 specifications. If the EN15376 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free, EU duty paid or in free EU circulation

Currency/unit: assessed and published in euros/m³. The assessment is also converted and published in US dollars/tonne

Timing: loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht and Ghent

Size: 1,000t

Certification: material must be accompanied with RED-compliant certification issued by European Commission-approved auditing body. Sellers must provide the below certification criteria

- Biomass feedstock compliant with RED Annex IX Part A and considered advanced in the Netherlands, inclusive of definitions listed in Annex V of the Regeling energie vervoer

- GHG savings: minimum 80pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4pm to 4:30pm London time

Proof of sustainability: documentation of POS or sustainability declaration must be transferred between counterparties within 30 working days after bill of lading.

RED Germany waste-based ethanol fob ARA range

Anhydrous, undenatured ethanol meeting EN15376 specifications
If the EN15376 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free, EU duty paid or in free EU circulation

Currency/unit: assessed and published in euros/m³. The assessment is also converted and published in US dollars/tonne

Timing: loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht and Ghent

Size: 1,000t

Certification: material must be accompanied with RED-compliant certification issued by European Commission-approved auditing body
Sellers must provide the below certification criteria

- German mandate compliant — feedstock in line with § 37b of the “Bundes-Immissionsschutzgesetz” and “Biomasseverordnung”
- Registered in Germany’s biomass web application system Nabisy

GHG savings: minimum 90pc greenhouse gas savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4pm to 4:30pm London time

RED (T2) Ethanol fob ARA range, inc duty

Ethanol meeting EN15376 specifications

If the EN15376 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Currency/unit: assessed and published in euros/m³. The assessment is also converted to and published in US dollars/tonne

Timing: loading 5-20 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht and Ghent

Traded material may be delivered within the same terminal via a pump-over on buyer’s request. In this instance, the seller would be required to deliver into the buyer’s tank within a maximum of 120 hours after the nomination date, and timings relating to bill of lading would instead refer to the date of pump-over completion.

Size: 1,000t

Certification: material must be accompanied with RED-compliant certification issued by European Commission-approved auditing body
Sellers must be able to provide all of the below certification criteria

- Registered in Germany’s biomass web application system Nabisy
- Upon buyer request, and within 20 working days after bill of lading, the commissioning date of the production plant and the country of production must be provided by the seller, in writing in a way consistent with industry practice and acceptable to both buyer and seller

GHG savings: 75pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

The material contained in each 1,000t barge need only meet the required GHG savings requirement on average, and multiple POS certificates may be attached such that they average to the required GHG savings requirement. All qualities included in a 1,000t barge must meet a minimum GHG savings of 65pc based on a fossil fuel comparator of 94g CO₂ equivalent/MJ.

Terms and conditions: trades are conducted under standard industry-acceptable terms and conditions or other pre-agreed terms and condition

Proof of sustainability (POS): trades must include only standard industry-acceptable POS clauses in compliance with the EU RED.
Argus reserves the right to exclude from the assessment process trades accompanied by restrictive terms of POS. Documentation of POS or sustainability declaration must be transferred between counterparties within 20 working days after bill of lading.

Payment: must be made within 5 calendar days after the bill of lading

Assessment time: 4pm to 4:30pm London time

RED (T2) fob ARA range, inc duty differential to Eurobob non-oxy

Argus RED T2 ethanol differentials to Argus Eurobob non-oxy prices are calculated using a conversion rate of 1m³ = 0.789t

EU duty free or EU duty paid

Currency/unit: US dollars/tonne

Assessment time: 4pm to 4:30pm London time

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

RED (T2) premium Ethanol fob ARA range, inc duty

Ethanol meeting EN15376 specifications

If the EN15376 specification differs from the Argus specification listed below, the Argus specification takes precedence.

EU duty free or EU duty paid

Currency/unit: assessed and published in euros/m³. The assessment is also converted to and published in US dollars/tonne

Timing: loading 5-20 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht and Ghent

Size: 1,000t

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

GHG savings: minimum 90pc greenhouse gas savings based on a fossil fuel comparator of 94g CO₂ equivalent/MJ.

Assessment time: 4pm to 4:30pm London time

Ethanol fob Pakistan

99.7pc anhydrous fuel-grade ethanol

Currency/unit: US dollars/tonne

Timing: loading 30-60 days forward of the day of assessment

Location: fob Pakistan (Karachi)

Size: assessments are standardised to cargoes of 2,000-5,000t

Assessment time: 4:30pm Singapore time

Ethanol fob Pakistan (hydrous)

96pc extra neutral alcohol (ENA)

Currency/unit: US dollars/tonne

Timing: loading 30-60 days forward of the day of assessment

Location: fob Pakistan (Karachi)

Size: assessments are standardised to cargoes of 2,000-5,000t

Assessment time: 4:30pm Singapore time

Ethanol cfr Mumbai

99pc industrial-grade ethanol

Currency/unit: US dollars/tonne

Timing: delivery 30-60 days forward of the day of assessment

Duties: Prices are exclusive of duties and taxes at destination

Size: assessments are standardised to cargoes of 20,000-30,000t

Assessment time: 4:30pm Singapore time

Ethanol cfr Philippines

99pc anhydrous fuel-grade ethanol

Currency/unit: US dollars/m³

Timing: delivery 30-60 days forward of the day of assessment

Location: cfr Philippines (Subic Bay/Batangas)

Size: assessments are standardised to cargoes of 10,000-20,000m³

Assessment time: 4:30pm Singapore time

Ethanol cfr Vietnam

99pc anhydrous fuel-grade ethanol meeting the Vietnamese national standard (QCVN)

Currency/unit: US dollars/m³

Timing: delivery 15-30 days forward of the day of assessment

Location: cfr Vietnam southern ports — including Vung Tau and Nha Be. Prices at central or northern Vietnamese ports may be considered for inclusion in the assessment if deemed relevant.

Size: assessments are standardised to cargoes of 3,000-7,000m³

Assessment time: 4:30pm Singapore time

B-grade cfr northeast Asia

95pc hydrous ethanol

Currency/unit: US dollars/m³

Timing: delivery 60-90 days forward of the day of assessment

Location: cfr northeast Asia (Ulsan/Chiba)

Size: assessments are standardised to cargoes of 5,000-15,000m³

Assessment time: 4:30pm Singapore time

ETBE fob Rotterdam, ETBE differential to MTBE

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

Biomethanol

RED biomethanol cif UK

Quality: IMPCA specification

Currency/unit: US dollars/tonne

Timing: delivery 10-25 days forward of the day of assessment

Location: cif UK

Size: 1,000-4,000t

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing

body. Sellers must be able to provide certification that product is UK double-counting eligible — qualified to count double under UK renewable energy for transport laws and regulations

Assessment time: 4:30pm London time

RED biomethanol fob ARA range netback

Calculated as the cif UK biomethanol assessment less the daily freight differential between ARA and the Thames. Published in US dollars/tonne and converted to euros/tonne.

Biomethanol differential to fob Rotterdam methanol

Argus RED biomethanol fob ARA differential to Argus fob Rotterdam barge daily methanol index

Currency/unit: US dollars/tonne

Assessment time: 4:30pm London time

See the [Argus Methanol methodology](#).

RED biomethanol fob north China

Quality: IMPCA specification

Currency/unit: US dollars/tonne

Timing: loading up to 90 days forward from the date of assessment

Location: including Yingkou, Dalian, Qingdao and Tianjin ports

Size: 3,000-10,000t

Feedstock: compliant with RED Annex IX Part A

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

GHG savings: 75-85pc greenhouse gas (GHG) savings based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment timing: 4:30pm Singapore time on Fridays

Biomethanol differential to cfr China methanol

Argus RED biomethanol fob north China differential to Argus cfr China methanol

Currency/unit: US dollars/tonne

See the [Argus Methanol methodology](#).

RED biomethanol dap Shanghai

Quality: IMPCA specification

Currency/unit: US dollars/tonne

Timing: delivery up to 90 days forward from the date of assessment

Location: Shanghai. Prices in other east China ports including Ningbo and Zhoushan may be considered for inclusion in the assessment if deemed relevant

Size: 1,000-5,000t

Feedstock: compliant with RED Annex IX Part A

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

GHG savings: 65-75pc greenhouse gas (GHG) savings based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment timing: 4:30pm Singapore time on Fridays

RED biomethanol dob Shanghai

The price of biomethanol bunkering at Shanghai port including customs clearance, port, and storage costs.

Quality: IMPCA specification

Currency/unit: US dollars/tonne

Timing: delivery up to 90 days forward from the date of assessment

Location: Shanghai. Prices in other east China ports including Ningbo and Zhoushan may be considered for inclusion in the assessment if deemed relevant

Size: 1,000-5,000t

Feedstock: compliant with RED Annex IX Part A

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

GHG savings: 65-75pc greenhouse gas (GHG) savings based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment timing: 4:30pm Singapore time on Fridays

Biomethane

Argus biofuels includes German biomethane prices republished from Argus Renewable Gas and Power.

- RED biomethane Germany waste
- RED biomethane Germany manure

See the [Argus Renewable Gas and Power methodology](#).

Bionaphtha and biopropane

RED bionaphtha fob ARA range

EU duty free or EU duty paid

Feedstock: RED-compliant used cooking oil

Currency/unit: US dollars/tonne, a US dollars/m³ conversion is published assuming 1m³ = 0.69t

Timing: loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Size: 1,000-2,000t

Certification: material must be accompanied with RED-compliant certification issued by a European Commission-approved auditing body

GHG savings: minimum 87pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:30pm London time

RED bionaphtha fob ARA range differential to naphtha 65 para cif northwest Europe

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

Bionaphtha chemical feedstock fob ARA range

EU duty free or EU duty paid

Feedstock: used cooking oil

Currency/unit: US dollars/tonne, a US dollars/m³ conversion is published assuming 1m³ = 0.69t

Timing: loading 7-28 days forward of the day of assessment

Location: fob ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Size: 1,000-2,000t

Certification: material must be accompanied with certification for markets and sectors not regulated by RED including chemical and energy markets — such as ISCC Plus — issued by a European Commission-approved auditing body

GHG savings: minimum 87pc greenhouse gas (GHG) savings, based on a fossil fuel comparator of 94g CO₂ equivalent/MJ

Assessment time: 4:30pm London time

Bionaphtha cfr northeast Asia

Currency/unit: US dollars/tonne

Timing: delivery 30-60 days forward of the day of assessment

Location: cfr northeast Asia (South Korea/Japan)

Size: assessments are standardised to cargoes of 3,000-5,000t

Certification: material must be accompanied by ISCC Plus or similar certification

Assessment time: 4:30pm Singapore time

Bionaphtha cfr northeast Asia diff to naphtha Japan c+f

See the [Argus Asia-Pacific Products methodology](#).

RED bionaphtha fob ARA range specifications

Density	kg/l	0.69
Vapour pressure	PSI	Max 12.5
Colour	Saybolt	Min plus 20
Lead	PPB	Max 50
Sulphur	PPM	Max 30
IBP	°C	Min 30
FBP	°C	Max 180
Paraffins	% vol	Min 65
Olefins	% vol	Max 1
Naphthenes	% vol	To be reported
Aromatics	% vol	To be reported
Total chlorines	PPM	Max 10
MTBE	PPM	Max 50
Hydrogen sulphide	PPM	Max 10
Mercaptans	PPM	To be reported
Mercury	PPB	Max 5
Total oxygenate content	PPM	Max 100
Octanes	Ron	Max 55
Benzene	% vol	Max 1

Bionaphtha cfr northeast Asia specifications

Density	kg/l	0.69
Vapour pressure	PSI	Max 13
Colour	Saybolt	Min plus 20
Lead	PPB	Max 150
Sulphur	PPM	Max 650
IBP	°C	Min 25
FBP	°C	Max 204
Paraffins	% vol	Min 85
Olefins	% vol	Max 1
Total chlorines	PPM	Max 1
Mercury	PPB	Max 1
Total oxygenate content	PPM	Max 50
N-Paraffins	% vol	Min 30
Arsenic	PPB	Max 20

Biopropane fca ARA range

EU duty free or EU duty paid

Feedstock: RED-compliant used cooking oil

Currency/unit: US dollars/tonne, a US dollars/m³ conversion is published assuming 1m³ = 0.522t

Timing: loading 7-28 days forward of the day of the assessment

Location: fca ARA range — including Antwerp, Rotterdam, Amsterdam, Dordrecht, Flushing and Ghent

Size: 20-500t

Certification: material must be accompanied with RED-compliant certification or certification for markets and sectors not regulated by RED including chemical and energy markets – such as ISCC Plus – issued by a European Commission-approved auditing body

Assessment time: 4:30pm London time

Monthly averages

Monthly averages are the average of midpoint prices published during the calendar month. The final indexes for a month should be taken as those published in the last Argus Biofuels of the month.

Monthly averages are published in \$/t unless specified.

Monthly indexes are published for:

- RED rapeseed OME fob ARA range
- RED Soya OME fob ARA range
- RED Fame 0°C CFPP fob ARA range
- RED Fame -10°C CFPP fob ARA range
- RED UCOME fob ARA range
- RED Tallow OME fob ARA range
- RED POME OME fob ARA range
- RED Advanced Fame 0°C CFPP fob ARA range
- RED UCOME fob China
- RED UCOME fob strait of Malacca
- RED POME OME fob China
- SME fob Argentina
- RED HVO fob ARA range (Class I)
- RED HVO fob ARA range (Class II)
- RED HVO fob ARA range (Class III)
- RED HVO fob ARA range (Class IV)
- RED HVO fob China (Class II)
- RED HVO fob China (Class IV)
- RED HVO fob Singapore (Class I)
- RED HVO fob Singapore (Class II)
- RED HVO fob Singapore (Class III)
- RED HVO fob Singapore (Class IV)
- RED SAF HEFA-SPK fob ARA range
- RED SAF HEFA-SPK cif NWE
- RED SAF HEFA-SPK fob Singapore netback
- e-SAF cost, Netherlands
- RED bionaphtha fob ARA range
- Bionaphtha cfr northeast Asia range
- Biopropane fca ARA range
- RSO fob Dutch mill prompt (€/t)
- RED UCO fob ARA range
- RED UCO (hydrotreating) fob ARA range
- UCO cif ARA
- UCO ex-works ARA range

- Tallow (categories 1 and 2) fca northwest Europe
- Tallow (category 3) fca northwest Europe
- POME oil cif ARA
- Soapstock acid oil cif ARA
- RED UCO (hydrotreating) bulk fob China
- RED bulk UCO fob strait of Malacca
- RED UCO fob China
- RED UCO fob Indonesia
- RED UCO fob Vietnam
- RED UCO bulk fob China
- RED POME oil fob Malaysia
- RED Netherlands waste-based ethanol fob ARA range
- RED Germany waste-based ethanol fob ARA range
- RED (T2) premium Ethanol fob ARA range, inc duty
- RED (T2) premium Ethanol fob ARA range, inc duty (€/m³)
- RED (T2) Ethanol fob ARA range, inc duty
- RED (T2) Ethanol fob ARA range, inc duty (€/m³)
- RED (T2) Ethanol fob ARA range, inc duty differential to Euro-bob oxy
- Ethanol fob Pakistan
- German greenhouse gas savings quota (Treibhausgas-minderungsquote)
 - Conventional GHG quota
 - Single-counting advanced GHG quota
 - Double-counting advanced GHG quota
 - Other GHG quota
 - Annex IX part B GHG quota
- Upstream emission reduction (UER) certificates
- Ice gasoil - 7-28 days forward
- Ice gasoil - 7-28 days forward (HVO-escalated)
- Ice gasoil - 7-28 days forward (SAF-escalated)

Greenhouse gas reduction

German greenhouse gas savings quota (Treibhausgas-minderungsquote)

Prices are published for quotes produced from categories of fuels:

- Conventional GHG quota
- Single-counting advanced GHG quota
- Double-counting advanced GHG quota
- Other GHG quota
- Annex IX part B GHG quota

See the [Argus O.M.R. Fuels methodology](#).

Upstream emission reduction (UER) certificates

The price of certified upstream emission reductions (UER) generated and validated in accordance with the German upstream emissions reduction ordinance (UERV). See the [Argus O.M.R. Fuels methodology](#).

UK renewable transport fuel certificate (RTFC)

The price of an RTFC, a certificate acceptable for use in meeting the legally prescribed volumetric obligation for finished transport fuel under the UK Renewable Transport Fuel Obligation (RTFO). Prices are assessed and published as the best bid and offer in the market at 4:30pm London time.

Currency/unit: p/RTFC (p/l)

Timing: prices are assessed for the most recent obligation period that has yet to be surrendered and may also be assessed for forward obligation periods for which Argus has determined that sufficient market liquidity exists to produce a robust assessment.

The obligation period ends on 31 December, and obligations are surrendered on 15 September the following year. Argus ceases the assessment of the obligation year on 15 June of the following year and begins assessing the next obligation period no later than 15 June of the obligation year. For example, Argus will begin publishing a 2020 obligation period assessment no later than 15 June 2020 but may begin publication earlier than that date should Argus deem market liquidity sufficient to produce a robust assessment. Argus will publish a 2020 obligation period up to and including 15 June 2021.

Crop-based RTFC

The price of an RTFC generated by single counting crop-based biofuels as defined under UK RTFO Order 2007 No. 3072 and subsequent amendments.

Other RTFC

The price of an RTFC generated by double counting biofuels produced from wastes and processing residues, agricultural residues, non-food cellulosic and ligno-cellulosic material and renewable fuels of non-biological origin, as defined under UK RTFO Order 2007 No. 3072 and subsequent amendments.

UK HEFA SAF certificates

The price of a sustainable aviation fuel (SAF) certificate, acceptable for use in meeting the legally prescribed energetic obligation on suppliers of aviation turbine fuel under the UK SAF mandate and generated from fuel made from a relevant hydrotreated esters and fatty acids (HEFA) feedstock.

Currency/unit: p/SAF certificate

Timing: prices are assessed for the most recent obligation period that has yet to be surrendered and may also be assessed for forward obligation periods for which Argus has determined that sufficient market liquidity exists to produce a robust assessment.

The obligation period ends on 31 December, and obligations are surrendered on 15 September the following year. Argus ceases the assessment of the obligation year on 15 June of the following year and begins assessing the next obligation period no later than 15 June of the obligation year.

Payment and transfer: for trade done up to 18 March of the year after the obligation period, payment and transfer must be made in the first quarter. For trade done on or after 18 March of the year after the obligation period, payment and transfer must be within two weeks of trade

Assessment time: 4:30 London time

Netherlands emission reduction units (ERE)

The price of an Emission Reduction Unit (ERE), a certificate acceptable for use in meeting the legally prescribed greenhouse gas saving obligation for finished transport fuel under the Netherlands' Energy for Transport Registry.

Timing: Prices are assessed for the most recent compliance year that has yet to be surrendered and may also be assessed for forward compliance years for which Argus has determined that sufficient market liquidity exists to produce a robust assessment. The compliance year ends on 31 December, and Argus begins assessing a compliance year no later than 31 March of that year. For example, Argus will begin publishing a 2027 obligation period assessment no later than 31 March 2027 but may begin publication earlier than that date should Argus deem market liquidity sufficient to produce a robust assessment.

Argus will continue to publish prices for each compliance year until the date on which obligations must be surrendered under the relevant law. Obligations are surrendered on 1 April the following year. Argus ceases the assessment of an obligation year on 1 April of the following year.

Currency/unit: euro cents/kg CO₂e

Assessment time: 4:30pm London time

EREs can be generated by fuel suppliers operating in transport sectors subject to the obligation including land/road transport (Landemissiereductie eenheid – LREs), maritime (Zeeemissiereductie eenheid – ZREs), and inland shipping (Binnenvaartreductie eenheid – BREs).

Argus assesses the following emission reduction units, corresponding to the relevant transport sector and fuel type defined in Annex IV of Netherlands renewable energy for transport laws and regulations:

ERE assessments		
	Transport sector	Fuel type
LRE-Advanced (LRE-G)	Land	Biofuel from Annex IX, Part A feedstock
LRE-Annex IX B (LRE-B)	Land	Biofuel from Annex IX, Part B feedstock
LRE-Conventional (LRE-C)	Land	Biofuel from conventional (crop) feedstock
LRE-Other (LRE-O)	Land	Biofuel from 'other' waste/crop feedstock
LRE-Electricity (LRE-E)	Land	Electricity
ZRE-Advanced (ZRE-G)	Maritime shipping	Biofuel from Annex IX, Part A feedstock
ZRE-Other (ZRE-O)	Maritime shipping	Biofuel from 'other' waste/crop feedstock
ZRE-Electricity (ZRE-E)	Maritime shipping	Electricity

Reference prices

Glycerine fob SE Asia

Currency/unit: US dollars/tonne

Glycerine reference price refers to crude glycerine with at least 80pc glycerol content, fob southeast Asia, based on notional bid/offer levels.

Malaysia, Palm oil futures

Currency/unit: US dollars/tonne, converted from ringgit

Prices for the first three forward month contracts as published by the Bursa Malaysia palm futures exchange. The last day of assessment of the first forward month is the last full day of exchange trading of that month before expiry.

Soybean oil futures

Currency/unit: US dollars/tonne

Cbot futures prices are converted to metric tonnes. The timestamp is 4:30pm London time based on the latest available Cbot prices for the first three forward months.

Arbitrage

Argus Biofuels publishes indications of the profitability of the below trade routes for full and partial cargoes aboard the specified vessels. A green tick is published when the arbitrage is open (the price in the importing market is above the price in the exporting market plus the cost of freight), and a red cross when it is closed.

- China-ARA HVO 50,000dwt IMO3 coated MR (40kt cargoes)
- China-ARA HVO 50,000dwt IMO2 coated MR (5kt cargoes)
- China-ARA SAF 22,000dwt stainless steel tanker (18.5kt/5kt cargoes)
- China-ARA SAF 50,000dwt IMO3 coated MR (40kt cargoes)
- China-ARA SAF 50,000dwt IMO2 coated MR (5kt cargoes)
- China-ARA UCO 22,000dwt stainless steel tanker (18.5kt/5kt cargoes)
- China-ARA UCO 50,000dwt IMO2 coated MR (40kt/5kt cargoes)
- China-ARA UCOME 50,000dwt IMO2 coated MR (40kt/5kt cargoes)
- China-USGC UCO 22,000dwt stainless steel tanker (18.5kt/5kt cargoes)
- China-USGC UCO 50,000dwt IMO2 coated MR (40kt/5kt cargoes)
- Singapore/Malaysia-ARA Pome 22,000dwt stainless steel tanker (18.5kt/5kt cargoes)
- Singapore/Malaysia-ARA UCO 22,000dwt stainless steel tanker (18.5kt/5kt cargoes)
- Singapore/Malaysia-ARA UCO 50,000dwt IMO2 coated MR (40kt/5kt cargoes)
- Singapore/Malaysia-ARA UCOME 50,000dwt IMO2 coated MR (40kt/5kt cargoes)
- Singapore/Malaysia-ARA HVO 50,000dwt IMO3 coated MR (40kt/5kt cargoes)
- Singapore/Malaysia-ARA SAF 50,000dwt IMO3 coated MR (40kt/5kt cargoes)

A wider range of arbitrage indications and full calculations is available in Workspaces available in Argus Direct. See the [Argus Specialised Freight methodology](#).

Forward price assessments and swaps

All RED swaps and forward assessments assume product that is accompanied with RED-compliant certification issued by the European Commission-approved auditing body. All RED swaps and forward prices are assessed for three months and three quarters forward. The last day of assessment of the first forward month will be the last full UK day of trading of that month prior to the Ice low-sulphur gasoil last trade date. The last day of assessment of the first forward quarter will be the last full UK day of trading prior to the Ice low-sulphur gasoil last trade date of the month preceding the start of the quarter.

Swap and forward price assessments are published for:

- RED RME swap
- RED Fame 0°C CFPP swap
- RED UCOME fob ARA range swap
- RED SME forward physical
- RED Fame -10°C CFPP forward physical
- RED HVO (Class II) fob ARA range swap
- RED (T2) Ethanol fob ARA range forward physical
- RED SAF (HEFA-SPK) fob ARA range swap

See spot price assessments above for specifications.

Timestamp: 4:30pm London time

Ice gasoil settle

The official settlement figures published by Ice in London.

7-28 day Ice gasoil

Calculated on the day of assessment as the average of settlement prices for the first or first and second forward month Ice gasoil contract, weighted by the number of Argus publishing days in the 7-28 day loading period.

7-28 day HVO-escalated Ice gasoil

The 7-28 day Ice gasoil price adjusted to an HVO-equivalent density of 0.78kg/l, assuming a gasoil density of 0.845kg/l in a vacuum at 15°C.

7-28 day SAF-escalated Ice gasoil

The 7-28 day Ice gasoil price adjusted to an SAF-equivalent density of 0.76kg/l, assuming a gasoil density of 0.845kg/l in a vacuum at 15°C.

Palm oil-gasoil spread (Pogo)

The spread between the third forward month Bursa Malaysia palm oil futures settlement price and the corresponding Ice low sulphur gasoil futures settlement price.

Currency/unit: US dollars/tonne

Conversion and rounding: palm oil futures prices are converted to US dollars and rounded to the nearest \$0.25/t

Assessment time: the timestamp for the spread is 4:30pm London time, based on the latest available Bursa Malaysia and Ice prices. The assessment follows the Argus rolling schedule for Bursa Malaysia futures prices. The palm oil-gasoil spread is published on Argus Biofuels publication dates for which the relevant Bursa Malaysia and Ice futures prices are available.

Beanoil-gasoil spread (Bogo)

The spread between the second forward month Cbot soybean oil futures price and the corresponding Ice low sulphur gasoil futures settlement price.

Currency/unit: US dollars/tonne

Conversion and rounding: soybean oil futures prices are converted to metric tonnes and rounded to the nearest \$0.25/t

Assessment time: the timestamp for the spread is 4:30pm London time, based on the latest available Cbot and Ice prices. The assessment follows the Cbot rolling schedule. The Beanoil-gasoil spread is published only on Argus Biofuels publication dates for which the relevant Cbot and Ice futures prices are available.