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## ***ARGUS EUROPEAN PRODUCTS***

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***LAST UPDATED: JANUARY 2018***

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

## Methodology overview

### Methodology rationale

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

In the European products markets, 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. Argus assesses some clean product markets as a basis differential to the Ice gasoil and Brent settlement prices to arrive at fixed prices because the futures settlement price is a representative futures price reference.

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 include 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. In some transactional average methodologies, reporters also examine the full array of transactions to match counterparties and arrive at a list of unique transactions. In transactional average methodologies, full details of the transactions verified are published on electronic bulletin boards that are accessible by subscribers. The deals are also published in the daily report.

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

When insufficient, inadequate, or no transaction information exists, or when Argus concludes that a transaction based methodology will not produce representative prices, Argus reporters will make an assessment of market value by applying intelligent judgment based on a broad array of factual market information. Reporters must use a high degree of care in gathering and validating all market data used in determining price assessments, a degree of care equal to that applying to gathering and validating transactions. The information

used to form an assessment could include deals done, bids, offers, tenders, spread trades, exchange trades, fundamental supply and demand information and other inputs.

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

### Relative value transactions

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

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

### Bids and offers

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

### Comparative metrics

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

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

### Volume minimums and transaction data thresholds

Because of the varying transportation infrastructure found in all commodity markets, Argus typically does not establish thresholds strictly on the basis of a count of transactions, as this could lead to

unreliable and non-representative assessments. Instead, minimum volumes are typically established which may apply to each transaction accepted, to the aggregate of transactions, to transactions which set a low or high assessment or to other volumetrically relevant parameters.

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

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

### Minimum transaction thresholds

Commodity	Modality	Location	Minimum Transaction Thresholds	
			Low/high minimum volume	VWA aggregate minimum volume
Eurobob oxy gasoline	Barge	ARA	na	3,000t

### Transparency

Argus values transparency in energy markets. As a result, we publish lists of deals in our reports that include price, basis, counterparty and volume information. The deal tables allow subscribers to cross check and verify the deals against the prices. Argus feels transparency and openness is vital to developing confidence in the price assessment process.

### Basis differentials and absolute prices

In heating oil, jet fuel and diesel markets, differentials to futures are the negotiated bids, offers, and transaction values. Argus fixed prices are derived by adding the differentials to the Ice gasoil futures settlement prices in these cases. On vacuum gasoil and straight-run fuel oil assessments, the differentials are linked to the Ice Brent futures contract.

### 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 products prices for Europe are published in the Argus European Products report. Subsets of these prices appear in other Argus market reports and newsletters in various forms, such as Argus Jet Fuel and Argus Global Markets. 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](http://www.argusmedia.com). Included in this policy are restrictions against staff trading in any energy commodity or energy related stocks, and guidelines for accepting gifts. Argus also has strict policies regarding central archiving of email and instant messenger communication, maintenance and archiving of notes, and archiving of spreadsheets and deal lists used in the price assessment process. Argus publishes prices that report and reflect prevailing levels for open-market arms length transactions (please see the [Argus Global Compliance Policy](#) for a detailed definition of arms length).

### Consistency in the assessment process

Argus 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.

## Naphtha and gasoline

### Northwest Europe

#### Cargoes

##### 95R gasoline 10ppm fob

Motor gasoline 95 Ron (octane) 10ppm sulphur. Prices are assessed as a differential to the Eurobob oxy barge price assessment, taking into account a cargo-to-barge discount and a storage and blending premium, both of which are regularly reviewed.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 10,000-15,000t

**Basis:** fob northwest Europe

**Specifications:** 95 Ron, unleaded, 10ppm sulphur, standard Eurograde

**Assessment time:** 9.00am to 5.30pm London time

##### 91R gasoline fob

Motor gasoline 91 Ron (octane) Prices are assessed as 91R gasoline cif northwest Europe cargoes minus the UK Continental freight cost unless modified by Argus according to market conditions.

The UK Continental freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes.

These routes are Brofjorden to Rotterdam, Coryton to Le Havre and Le Havre to Hamburg for 22,000t vessels.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 10,000-15,000t

**Basis:** fob northwest Europe

**Specifications:** 91 Ron, unleaded

**Assessment time:** 9.00am to 5.30pm London time

##### 95R gasoline 10ppm cif

Motor gasoline 95 Ron (octane) 10ppm sulphur Prices are assessed as a net-forward from the 95R gasoline 10ppm fob cargo price assessment, using current spot freight rates (WS100 rates) as they apply to an average of specific routes. These routes are Amsterdam, Rotterdam and Antwerp to Hamburg for 22,000t vessels.

**Unit:** US dollars/tonne

**Period:** delivery 5-15 days forward

**Size:** standardised to 10,000-15,000t

**Basis:** cif Hamburg

**Specifications:** 95 Ron, unleaded, 10ppm sulphur, standard Eurograde

**Assessment time:** 9.00am to 5.30pm London time

##### 91R gasoline cif

Motor gasoline 91 Ron (octane) Prices are usually assessed by market participants at a differential to the 95 Ron gasoline 10ppm Eurograde barge assessment.

**Unit:** US dollars/tonne

**Period:** delivery 5-15 days forward

**Size:** standardised to 10,000-15,000t

**Basis:** cif Hamburg

**Specifications:** 91 Ron, unleaded

**Assessment time:** 9.00am to 5.30pm London time

#### Naphtha 65 para cif

##### Quality

The assessment will reflect specifications qualities outlined in the Freespec 2015 contract with a minimum of 65 paraffins. Pipeline specification or grades with a paraffinic content of more than 70 paraffins may command a premium or discount to typical open spec grades and this differential, determined by Argus, may be factored into price assessments when they trade.

Specifications		
Specific gravity	At 15°C	Max 0.735
Vapour pressure	PSI	Max 12.5
Colour	Saybolt	Min plus 20
Lead	PPB	Max 50
Sulphur	ppm	Max 500
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 50

##### Period

Argus will include all relevant spot trading activity in the assessment process within a 10-30 day delivery period from the day of assessment. Assessments will be normalised to reflect delivery 15 days from the day of assessment using other spot trade and forward markets to determine market structure. Sellers should guarantee a five-day delivery range, which must then be narrowed to a three-day range at least five days before the delivery period.

##### Assessment timing

Argus will consider all relevant market activity between 3.30pm-4.30pm London time.

##### Volumes

Cargoes for 27,000t meeting Argus specifications conducted or reported within the AOM platform will be directly reflected in the price assessment. In the absence of trade for 27,000t cargoes, other volumes will be considered with price assessments normalised to a 27,000t cargo size. Volume tolerance of 10pc on agreed cargo size will be considered acceptable at the seller's discretion.

##### Unit

All prices are in \$/tonne



### Location

Delivery will be cfr one safe port one safe berth basis Rotterdam. The buyer has the option to discharge at one safe port/one safe berth within the range set out below provided the buyer pays all the additional costs actually incurred in exercising this option and upon payment of the following premiums in addition to the freight as per the charter party but not to exceed the amounts detailed in the Freespec 2015 contract.

### Data considered in the Argus assessment

Argus will form its price assessments on the basis of data provided using the following information hierarchy:

1. Confirmed trade for 27,000t cargoes that meet Argus specifications, timing and location criteria
2. Bids and offers for 27,000t cargoes that meet Argus specifications, timing and location criteria
3. Confirmed trade for other volumes that meet Argus specifications, timing and location criteria
4. Bids and offers for other volumes that meet Argus specifications, timing and location criteria
5. Other data including bids, offers and trades for other volumes, locations or timings. Forward markets and arbitrage economics

For all deals initiated in AOM, Argus will calculate a crack spread using the outright price in \$/t at which the deal was initiated minus the front month Ice Brent price at that time (using a conversion factor of 8.9 to convert the outright naphtha price from tonnes to barrels). A volume-weighted average of crack spreads traded will then be applied to the 4:30pm minute marker for the front-month Brent contract as published by Ice, this price will then be converted back to a \$/t figure.

Certain market situations may emerge in which confirmed trade and bids and offers would not produce representative prices. In these circumstances Argus will publish representative prices by moving down the information hierarchy as it considers appropriate.

### Nominations

Nomination procedures will be as per the Freespec 2015 contract.

### Barges

#### 98R gasoline

As trade on 98R grades is infrequent, Argus applies a differential to the more liquid Eurobob oxy grade to inform its assessments.

**Unit:** US dollars/tonne

**Period:** loading 2-8 days forward

**Size:** standardised to 1,000-2,000t

**Basis:** fob Rotterdam/Amsterdam/Antwerp

**Specifications:** 98 Ron, 88 Mon, unleaded, 0.755 specific gravity, "superplus" with benzene limits at 1% maximum, maximum 10ppm sulphur

**Assessment time:** 9.00am to 5.30pm London time

#### 95R gasoline 10ppm

Prices are assessed taking into account trade, bids, offers and other relevant market information, including market structure, to inform a differential to the Eurobob oxy barges price assessment.

**Unit:** US dollars/tonne

**Period:** loading 2-8 days forward

**Size:** standardised to 1,000-2,000t

**Basis:** fob Rotterdam/Amsterdam/Antwerp

**Specifications:** 95 Ron, 85 Mon, unleaded, 0.755 specific gravity, 10ppm sulphur, standard Eurograde meeting EN228 specifications

**Assessment time:** 9.00am to 5.30pm London time

#### Eurobob oxy

Prices typically reflect a volume-weighted average of deals done within Argus criteria and published on the Argus Gasoline Bulletin board.

**Unit:** US dollars/tonne

**Period:** loading 2-8 days forward

**Size:** standardised to 1,000-2,000t

**Basis:** fob Rotterdam/Amsterdam/Antwerp

**Specifications:** reflect grades of gasoline that meet EN228 specifications with a maximum of 10ppm sulphur after they have been blended with 4.8% ethanol of minimum 98.7% purity. Oxy-gen content is limited to 0.9%

Specific gravity is 0.755 g/ml

Metal content must not exceed 1 mg/l

**Assessment time:** 9am to 5.30pm London time.

Standard nomination procedures must be followed. The buyer should give two working days' notice of barge ETA. Nominations received after 2pm London time or on Fridays after 1pm London time will be deemed to be received on the following working day. Otherwise, the original day of nomination will count as day one of the two days' notice. Barges can arrive to be loaded at any time from midnight after the two-day notice period. For instance, for a barge deal done on Monday morning, the barge can arrive to be loaded at any time on Wednesday after Tuesday midnight.

In the event that the volume of the transactions for Eurobob oxygenated gasoline is less than 3,000t in a day, Argus will default to an assessment to form part of the Eurobob oxygenated quotation. This assessment will be Argus' interpretation of the bid-offer range for Eurobob oxygenated gasoline at 4:30pm London time. The assessment of this bid-offer range will take into account the viability and repeatability of such bids and offers based upon market information acquired throughout the day. In the event of there being no bids or offers then Argus will assess the market using its knowledge and experience, combined with a market consensus, to establish a perceived buy-sell range based on prevailing prices from other oil markets. This 4:30pm assessment will form an equal part of an average in conjunction with any other trade through the day, but will only count towards the day's assessment if there is less than 3,000t traded in total by 5:30pm London time. If there is no trade at all, the 4:30pm assessment will be used as the main assessment.

**Clarification:** On Argus Eurobob oxy barges, only bids and offers that meet Argus Eurobob oxy specifications will be considered in Argus assessments. Offers stipulating superior qualities will not be

considered and all deals must be concluded on an oxy basis to be included in the Argus Eurobob oxy assessment.

Argus will publish a subscriber note in the European Products report at least one month ahead of any seasonal changes in winter/summer specifications, detailing the loading dates for deals it will consider in its assessments during the transition from one grade to another.

### Eurobob non-oxy

**Unit:** US dollars/tonne

**Period:** loading 2-8 days forward

**Size:** standardised to 1,000-2,000t

**Basis:** fob Rotterdam/Amsterdam/Antwerp

**Specifications:** will reflect grades of gasoline that meet EN228 specifications with a maximum of 10 ppm sulphur after they have been blended with 9.7% ethanol of 98.7% purity.

**Assessment time:** 9.00am to 5.30pm London time.

### 91R gasoline

**Unit:** US dollars/tonne

**Period:** loading 2-8 days forward

**Size:** standardised to 1,000-2,000t

**Basis:** fob Rotterdam/Amsterdam/Antwerp

**Specifications:** 91 Ron, 82.5 Mon, unleaded, 0.745 specific gravity, benzene limits at 1% maximum, 10ppm sulphur, standard Eurograde

**Assessment time:** 9.00am to 5.30pm London time.

### MTBE

Argus publishes a daily MTBE factor and a high-low price range for MTBE.

The MTBE factor reflects the industry practice of pricing MTBE as a ratio or factor of the Eurobob oxy barge gasoline price as published in Argus European Products.

Fixed-price MTBE trade will be converted to a ratio by dividing the MTBE price by the Eurobob oxy barge price assessment on the day of trade.

The daily high-low range for MTBE is calculated by multiplying the MTBE factor for the day by the high and low prices for Eurobob oxy barge as published in Argus European Products.

**Unit:** US dollars/tonne

**Period:** loading 2-15 days forward

**Size:** standardised to 1,000t

**Basis:** fob Rotterdam.

**Specifications:** European grade, 98% purity.

### ETBE

Argus publishes a daily ETBE price, assessed as a differential to MTBE.

**Unit:** US dollars/tonne

**Period:** loading 2-15 days forward

**Size:** standardised to 1,000t

**Basis:** fob Rotterdam.

**Specifications:** European grade, 95% purity.

### Naphtha 65 para (cif)

#### Unit

All prices are in \$/tonne

#### Quality

The assessment will typically reflect Freespec 2015 qualities with a minimum of 65 paraffins. Pipeline specification or grades with a paraffinic content of more than 70 paraffins may command a premium or discount to typical open spec grades and this differential, determined by Argus, may be factored into price assessments when they trade.

#### Assessment timing

Argus will consider all relevant market activity between 4:00pm-4.30pm London time.

#### Location

Location will be cif basis ARA

Specifications		
Specific gravity	At 15°C	Max 0.735
Vapour pressure	PSI	Max 12.5
Colour	Saybolt	Min plus 20
Lead	PPB	Max 50
Sulphur	PPM	Max 500
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
<i>level of normal paraffins and isoparaffins to be reported</i>		

#### Period

The pricing period is for barges delivering 3-30 days ahead of the day of assessment

#### Volumes

Barges of 1,000-5,000t will be considered.

#### Location

Location will be cif basis ARA

#### Data considered in the Argus assessment

Prices reflect a volume-weighted average of deals done within Argus criteria and reported on the AOM platform.

In the event that the volume of the transactions is less than 3,000t in a day, Argus will default to an assessment. This assessment will



be Argus' interpretation of the bid-offer range for naphtha barges at 4:30pm London time. The assessment of this bid-offer range will take into account the viability and repeatability of such bids and offers based upon market information acquired throughout the day. In the event of there being no bids or offers then Argus will assess the market using its knowledge and experience, combined with a market consensus, to establish a perceived buy-sell range based on prevailing prices from other oil markets. This 4:30pm assessment will form an equal part of an average in conjunction with any other trade through the day. If there is no trade at all, the 4:30pm assessment will be used as the main assessment.

### Nominations

Standard nomination procedures must be followed. The seller should give two working days' notice of barge ETA. Nominations received after 2pm London time or on Fridays after 1pm London time will be deemed to be received on the following working day. Otherwise, the original day of nomination will count as day one of the two days' notice. Barges can arrive to be discharged at any time from midnight after the two-day notice period. For instance, for a barge deal done on Monday morning, the barge can arrive to be discharged at any time on Wednesday after Tuesday midnight.

### West Mediterranean

#### 95R gasoline 10ppm fob

Prices are assessed taking into account Mediterranean cargo trade, bids, offers and other relevant market information, to inform a differential to the Eurobob oxy barges price assessment.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 20,000-30,000t

The basis is fob western Mediterranean

**Specifications:** 95 Ron, unleaded, 10ppm sulphur, standard Euro-grade (Spanish, Italian and French grades), 0.755 specific gravity, maximum 1% benzene

**Assessment time:** 9.00am to 5.30pm London time

#### Naphtha 65 Para fob

Prices are constructed by netting back from the Argus naphtha 65 para cif northwest Europe assessment using an Argus Mediterranean to northwest Europe freight assessment modified by Argus according to regional market conditions.

The Mediterranean to UK Continent freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes. These routes are Alexandria to Rotterdam, Skikda to Hamburg and Ras Lanuf to Antwerp for 30,000t naphtha vessels.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 10,000-25,000t

**Specifications:** 65-70% paraffins.

**Assessment time:** 8.30am to 5.30pm London time.

#### 95R gasoline 10ppm cif

Prices are assessed as a net-forward from the 95R gasoline 10ppm fob Med cargo price assessment, using an Argus cross-Mediterranean freight assessment.

**Unit:** US dollars/tonne

**Period:** delivery 5-15 days forward.

**Size:** standardised to 20,000-30,000t.

**Basis:** cif Lavera/Genoa calculated by adding to the fob western Mediterranean an assessment of spot freight. The spot freight is the cross-Mediterranean WS100 rate applied to an average of Skikda to Genoa, Zawia to Lavera and Alexandria to Genoa for 30,000t vessels.

**Specifications:** 95 Ron, unleaded, 10ppm sulphur, standard Euro-grade (Spanish, Italian and French grades), 0.755 specific gravity, maximum 1% benzene

**Assessment time:** 9.00am to 5.30pm London time.

#### Naphtha 65 Para cif

**Unit:** US dollars/tonne

**Period:** delivery 5-15 days forward.

**Size:** standardised to 10,000-25,000t.

**Basis:** cif Lavera/Genoa constructed by adding an Argus assessment for cross-Mediterranean freight to the naphtha 65 paraffinic fob west Mediterranean assessment modified by Argus according to regional market conditions. The cross-Mediterranean freight cost will be based on current spot freight rates (WS 100 rates) as they apply to an average of specific routes. These routes are Skikda to Genoa, Zawia to Lavera and Alexandria to Genoa for 30,000t naphtha vessels.

**Specifications:** 65-70% paraffins.

**Assessment time:** 8.30am to 5.30pm London time.

## Middle distillates

### Northwest Europe

#### Cargoes

##### Jet fob

Prices are assessed by netting back from the Argus jet cif northwest Europe price using a UK Continental freight cost modified by Argus according to market conditions.

The UK Continental freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes. These routes are Brofjorden to Rotterdam, Coryton to Le Havre and Le Havre to Hamburg for 30,000t vessels.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward.

**Size:** standardised to 30,000t.

**Basis:** fob northwest Europe.

**Specifications:** Defstan 91-091 latest issue, 0.800 specific gravity, EU qualified.

**Assessment time:** is 8.30am to 5.30pm London time.

##### Diesel French 10ppm fob

Diesel 10ppm sulphur.

Prices are netted back from the Argus diesel 10ppm cif price using UK Continental freight as assessed by Argus modified by any relevant market considerations.

The UK Continental freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes.

These routes are Brofjorden to Rotterdam, Coryton to Le Havre and Le Havre to Hamburg for 30,000t vessels.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** fob northwest Europe.

**Specifications:** 10ppm sulphur, minimum 51 cetane number, maximum 0.001% sulphur, up to 0.845 specific gravity, (in summer) plus 2°C cloud point, minus 4°C cold filter plugging point, (in winter) minus 5°C cloud point, minus 15°C cold filter plugging point. Price based on 0.845 maximum specific gravity at 15°C.

**Assessment time:** 8.30am to 5.30pm London time.

### Diesel German 10ppm fob

German diesel 10ppm sulphur.

Prices are netted back from the Argus German diesel 10ppm cif price using UK Continental freight as assessed by *Argus* modified by any relevant market considerations.

The UK Continental freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes. These routes are Brofjorden to Rotterdam, Coryton to Le Havre and Le Havre to Hamburg for 30,000t vessels.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** is standardised to 25,000-30,000t

**Basis:** fob northwest Europe

**Specifications:** 10ppm sulphur, minimum 51 cetane number, prices exclude WASA (wax anti-settling additive), up to 0.845 specific gravity, (in summer) plus 5°C cloud point, minus 2°C cold filter plugging point, (in winter) minus 7°C cloud point, minus 22°C cold filter plugging point, (intermediate quality) minus 3°C cloud point, minus 13°C cold filter plugging point.

Price based on 0.845 maximum specific gravity at 15°C.

**Assessment time:** 8.30am to 5.30pm London time.

### Heating oil 0.1%S fob

Prices are netted back from the Argus Heating Oil cif price using UK Continental freight as as-sessed by *Argus* modified by any relevant market considerations.

The UK Continental freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes.

These routes are Brofjorden to Rotterdam, Coryton to Le Havre and Le Havre to Hamburg for 30,000t vessels.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** fob northwest Europe

**Specifications:** French heating grade, minimum 40 cetane number, plus 2°C cloud point, minus 4°C cold filter plugging point and minus 9°C pour point, maximum 0.1% sulphur.

Price based on 0.845 specific gravity.

**Assessment time:** 8.30am to 5.30pm London time

### Heating oil German 50ppm fob

German heating oil

Prices are netted back from the Argus German heating oil cif price

using UK Continental freight as assessed by *Argus* modified by any relevant market considerations.

The UK Continental freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes.

These routes are Brofjorden to Rotterdam, Coryton to Le Havre and Le Havre to Hamburg for 30,000t vessels.

**Unit:** US dollars/tonne

**Pricing period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** fob northwest Europe

**Specifications:** German heating grade with 0.005% sulphur

**Assessment time:** 8.30am to 5.30pm London time

### Jet cif

Prices are assessed as a differential to Ice front-month gasoil. Prices are published as a differential and as an outright price based on the assessed differential and the Ice front-month gasoil settlement.

**Unit:** US dollars/tonne

**Period:** delivery 5-15 days forward

**Size:** standardised to 30,000t

**Basis:** cif northwest Europe standardised to Rotterdam.

**Specifications:** Defstan 91-091 latest issue, 0.800 specific gravity, EU qualified.

**Assessment time:** 8.30am to 5.30pm London time.

### UK ULSD cif

UK ultra-low sulphur diesel 10ppm sulphur.

Prices are calculated using an Ice settlement price as published by the Intercontinental Exchange as a base price.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** cif UK Thames Estuary

**Specifications:** 10ppm sulphur, 0.845 maximum specific gravity at 15°C

**Assessment time:** 8.30am to 5.30pm London time.

### Diesel French 10ppm cif

Diesel 10ppm sulphur.

Prices are calculated using an Ice settlement price as published by the Intercontinental Exchange as a base price.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t.

**Basis:** cif Le Havre.

**Specifications:** 10ppm sulphur, minimum 51 cetane number, maximum 0.001% sulphur, up to 0.845 specific gravity, (in summer) plus 2°C cloud point, minus 4°C cold filter plugging point, (in winter) minus 5°C cloud point, minus 15°C cold filter plugging point.

Price based on 0.845 maximum specific gravity at 15°C

**Assessment time:** 8.30am to 5.30pm London time.

### Diesel German 10ppm cif

German diesel 10ppm sulphur.

Prices are calculated using an Ice settlement price as published by the Intercontinental Exchange as a base price.

**Unit:** US dollars/tonne

**Period:** delivery 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** cif Hamburg

**Specifications:** 10ppm sulphur, minimum 51 cetane number, prices exclude WASA (wax anti-settling additive), up to 0.845 specific gravity, (in summer) plus 5°C cloud point, minus 2°C cold filter plugging point, (in winter) minus 7°C cloud point, minus 22°C cold filter plugging point, (intermediate quality) minus 3°C cloud point, minus 13°C cold filter plugging point

Price based on 0.845 maximum specific gravity at 15°C

**Assessment time:** 8.30am to 5.30pm London time

### Heating oil 0.1%S cif

Prices are calculated using an Ice settlement price as published by the Intercontinental Exchange as a base price.

**Unit:** US dollars/tonne

**Period:** delivery 5-15 days forward.

**Size:** standardised to 25,000-30,000t.

**Basis:** cif Le Havre.

The specifications are French heating grade, minimum 40 cetane number, plus 2°C cloud point, minus 4°C cold filter plugging point and minus 9°C pour point, maximum 0.1% sulphur.

Price based on 0.845 specific gravity.

**Assessment time:** 8.30am to 5.30pm London time.

### Heating oil German 50ppm cif

German heating oil

Prices are calculated using an Ice settlement price as published by the Intercontinental Exchange as a base price.

**Unit:** US dollars/tonne

**Period:** delivery 5-15 days forward.

**Size:** standardised to 25,000-30,000t.

**Basis:** cif Hamburg.

**Specifications:** German heating grade with 0.005% sulphur.

**Assessment time:** 8.30am to 5.30pm London time.

## Barges

### Jet

Prices are assessed as a differential to Ice front-month gasoil. Prices are published as a differential and as an outright price based on the assessed differential and the Ice front-month gasoil settlement. Typically the assessment will reflect a volume-weighted average of deals concluded on an exchange-for-physical basis.

When no confirmed exchange-for-physical deals are concluded, Argus will use exchange-for-physical bids and offers to inform its assessment. 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.

When there is an insufficient number of bids and offers, comparative metrics may also inform the assessment. The relative values between compared commodities are readily discussed in the market and can be discovered through dialogue with market participants, including:

- 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 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).

**Unit:** US dollars/tonne

**Period:** loading 2-8 days forward, not including weekends

**Size:** standardised to 2,000-5,000t. Trades for unusual quantities may be adjusted to reflect values for 2,000-5,000t

**Basis:** fob Rotterdam/Amsterdam/Antwerp/Flushing/Ghent

**Specifications:** Defstan 91-091 latest issue, 0.800 specific gravity, EU qualified

**Assessment time:** 8.30am to 5.30pm London time

### Diesel German 10ppm

German diesel 10ppm sulphur.

Prices are calculated using an Ice settlement price as published by the Intercontinental Exchange as a base price.

Typically the assessment will reflect a volume-weighted average of deals concluded on an exchange-for-physical basis.

**Unit:** US dollars/tonne

**Period:** loading 2-8 days forward.

**Size:** standardised to 1,000-2,000t. Trades for unusual quantities may be adjusted to reflect values for 1,000-2,000t

**Basis:** is fob Rotterdam.

**Specifications:** 10ppm sulphur, minimum 51 cetane number, prices exclude WASA (wax anti-settling additive), up to 0.845 specific gravity, (in summer) plus 5°C cloud point, minus 2°C cold filter plugging point, (in winter) minus 7°C cloud point, minus 22°C cold filter plugging point, (intermediate quality) minus 3°C cloud point, minus 13°C cold filter plugging point

Prices based on 0.845 specific gravity

**Assessment time:** is 8.30am to 5.30pm London time

### Heating oil 0.1%S

Prices are calculated using an Ice settlement price as published by the Intercontinental Exchange as a base price.

Typically the assessment will reflect a volume-weighted average of deals concluded on an exchange-for-physical basis.

**Unit:** US dollars/tonne

**Pricing period:** loading 2-8 days forward

**Size:** standardised to 1,000-2,000t. Trades for unusual quantities may be adjusted to reflect values for 1,000-2,000t

**Basis:** fob Rotterdam

**Specifications:** German grade, 0.845 specific gravity, 0.1% sulphur, (in summer) typically plus 3°C cloud point, minus 7°C cold filter plugging point and (in winter) 1°C cloud point, minus 11°C cold filter plugging point

**Assessment time:** 8.30am to 5.30pm London time

### Heating oil German 50ppm

Prices are calculated using an Ice settlement price as published by the Intercontinental Exchange as a base price.

Typically the assessment will reflect a volume-weighted average of deals concluded on an exchange-for-physical basis.

**Unit:** US dollars/tonne  
**Period:** loading 2-8 days forward  
**Size:** standardised to 1,000-2,000t. Trades for unusual quantities may be adjusted to reflect values for 1,000-2,000t  
**Basis:** fob Rotterdam  
**Specifications:** German grade, 0.845 specific gravity, 0.005% sulphur, (in summer) typically plus 3°C cloud point, minus 7°C cold filter plugging point, (in winter) plus 1°C cloud point, minus 11°C cold filter plugging point  
**Assessment time:** 8.30am to 5.30pm London time.

## West Mediterranean

### Jet fob

Jet Mediterranean fob assessments are a netback from northwest Europe calculated using an Argus assessment of the west Mediterranean to northwest Europe freight costs modified by Argus according to regional market conditions.

The Mediterranean to UK Continent freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes. These routes are Santa Panagia Bay to Rotterdam, Milazzo to Le Havre and Ras Lanuf to Antwerp for 30,000t vessels.

**Unit:** US dollars/tonne  
**Period:** loading 5-15 days forward  
**Size:** standardised to 30,000t  
**Specifications:** Defstan 91-091 latest issue, 0.800 specific gravity, EU qualified  
**Assessment time:** 8.30am to 5.30pm London time

The differential between fob Mediterranean jet and cif Mediterranean jet assessments is published separately.

### Diesel French 10ppm fob

Diesel 10ppm sulphur  
 Prices are calculated subtracting an Argus assessment of cross-Mediterranean freight from the Argus Diesel 10ppm cif assessment modified by Argus according to regional market conditions.  
 The cross-Mediterranean freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes. These routes are Skikda to Genoa, Zawia to Lavera and Alexandria to Genoa for 30,000t vessels.

**Unit:** US dollars/tonne  
**Period:** loading 5-15 days forward  
**Size:** standardised to 25,000-30,000t  
**Basis:** fob Italian Isles  
**Specifications:** maximum 0.005% sulphur, minimum 51 cetane number, up to 0.845 specific gravity, (in summer) plus 2°C cloud point, minus 4°C cold filter plugging point, (in winter) minus 5°C cloud point, minus 15°C cold filter plugging point  
 Price based on 0.845 maximum specific gravity at 15°C  
**Assessment time:** 8.30am to 5.30pm London time

### Heating oil 0.1%S fob

Prices are calculated subtracting an Argus assessment of cross-Mediterranean freight from the Argus Heating Oil cif assessment modified by Argus according to regional market conditions.  
 The cross-Mediterranean freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific

routes. These routes are Skikda to Genoa, Zawia to Lavera and Alexandria to Genoa for 30,000t vessels.

**Unit:** US dollars/tonne  
**Period:** loading 5-15 days forward  
**Size:** standardised to 25,000-30,000t  
**Basis:** fob Italian Isles  
**Specifications:** French heating grade, minimum 40 cetane number, plus 2°C cloud point, minus 4°C cold filter plugging point and minus 9°C pour point, maximum 0.1% sulphur  
 Price based on 0.845 specific gravity  
**Assessment time:** 8.30am to 5.30pm London time

### Jet cif

Firstly Argus will consider bids, offers and trades done for jet on a cif Mediterranean basis at a differential to cif northwest Europe jet cargoes. Second, they will consider premiums paid to jet fob Mediterranean assessments for cif deliveries of 30,000t into Genoa or Lavera. Prices of jet fuel delivered to the eastern Mediterranean will also be considered, once freight cost adjustments have been made. Part cargoes will also be considered.

**Unit:** US dollars/tonne  
**Period:** loading 5-15 days forward  
**Size:** standardised to 25,000-30,000t  
**Specifications:** Defstan 91-091 latest issue, 0.800 specific gravity, EU qualified  
 The differential between fob Mediterranean jet and cif Mediterranean jet assessments is published separately.

### Diesel French 10ppm cif

Diesel 10ppm sulphur  
 Prices are calculated using an Ice settlement price as published by the Intercontinental Exchange as a base price.

**Period:** delivery 5-15 days forward  
**Size:** standardised to 25,000-30,000t  
**Basis:** is cif Lavera/Genoa  
**Specifications:** maximum 0.001% sulphur, minimum 51 cetane number, up to 0.845 specific gravity, (in summer) plus 2°C cloud point, minus 4°C cold filter plugging point, (in winter) minus 5°C cloud point, minus 15°C cold filter plugging point  
 Price based on maximum 0.845 specific gravity at 15°C  
**Assessment time:** 8.30am to 5.30pm London time

### Diesel 10ppm cif diff to spot

Argus will publish a daily assessment that reflects traded premiums to spot assessments in the west Mediterranean for 25,000-30,000t cargoes.

### Heating oil 0.1%S cif

Prices are calculated using an Ice settlement price as published by the Intercontinental Exchange as a base price.  
**Unit:** US dollars/tonne  
**Period:** delivery 5-15 days forward  
**Size:** standardised to 25,000-30,000t  
**Basis:** cif Lavera/Genoa

## Fuel oil and VGO

### Northwest Europe

#### Cargoes

##### Fuel oil 1%S fob

Fuel oil 1% sulphur

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** fob northwest Europe standardised to Rotterdam

**Specifications:** maximum 1% sulphur, cracked, 380cst, 0.991 specific gravity, minimum 65°C flash

**Assessment time:** is 8.30am to 5.30pm London time

##### Fuel oil 3.5%S fob

Fuel oil 3.5% sulphur

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** fob northwest Europe calculated by subtracting spot freight from the 3.5% cif northwest Europe assessment. The spot freight is the current WS100 rate applied to an average of the Tallinn to Rotterdam, Ventspils to Antwerp and Tallinn to Hamburg routes for 30,000t vessels

**Specifications:** maximum 3.5% sulphur, 380cst, 0.991 specific gravity, 300ppm maximum vanadium, H<sub>2</sub>S 2ppm

**Assessment time:** 8.30am to 5.30pm London time

##### Fuel oil straight-run 0.5%S fob

Straight run 0.5% fuel oil

The price is calculated as a differential to the Ice Brent 1 minute marker at 4.30pm London time and converted to US dollars/tonne at a rate of 6.85 bl/t. See [Argus Crude methodology](#) for details of the Ice Brent 1 minute marker price. Argus reserves the right to determine which Ice Brent contract month is used as the basis for the calculation, in line with market conditions.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** fob northwest Europe standardised to UK east coast

**Specifications:** maximum 0.5% sulphur

**Assessment time:** 8.30am to 5.30pm London time

##### Fuel oil straight-run 0.5%S fob differential

Straight run 0.5% fuel oil

The price differential for straight run 0.5% fuel oil is assessed at a differential to Intercontinental Exchange's Ice Brent crude futures price.

**Unit:** US dollars/barrel

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** fob northwest Europe standardised to UK east coast

**Specifications:** maximum 0.5% sulphur

**Assessment time:** 8.30am to 5.30pm London time

##### VGO 0.5%S fob

Vacuum gasoil 0.5% sulphur

In the absence of confirmed trade within Europe, Argus will look at theoretical netback values to the US Gulf coast to help inform its price assessments in Europe.

Prices will also be published as a \$/bl differential to the Ice Brent 1 minute marker at 4.30pm London time and converted to US dollars/tonne at a rate of 6.88853 bl/t. See the [Argus Crude methodology](#) for details of the Ice Brent 1 minute marker price. Argus reserves the right to determine which Ice Brent contract month is used as the basis for the calculation, in line with market conditions.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** fob Rotterdam

**Specifications:** maximum 0.5% sulphur, less than 1ppm sodium, nickel, vanadium, less than 2ppm iron, typical 80-85°C aniline, typical 0.915 density, maximum 0.5% CCR, maximum 1,500ppm nitrogen

**Assessment time:** 8.30am to 5.30pm London time.

##### VGO 2%S fob

Vacuum gasoil 2% sulphur

In the absence of confirmed trade within Europe, Argus will look at theoretical netback values to the US Gulf coast to help inform its price assessments in Europe.

Prices will also be published as a \$/bl differential to Ice Brent the Ice Brent 1 minute marker at 4.30pm London time and converted to US dollars/tonne at a rate of 6.81405 bl/t. See [Argus Crude methodology](#) for details of the Ice Brent 1 minute marker price. Argus reserves the right to determine which Ice Brent contract month is used as the basis for the calculation, in line with market conditions.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** fob Rotterdam area

**Specifications:** are maximum 2% sulphur, less than 1ppm sodium, nickel, less than 2ppm vanadium, iron, typical 75-80°C aniline, typical 0.925 density, maximum 0.5% CCR, maximum 1,700ppm nitrogen, maximum 700ppm asphaltenes

**Assessment time:** 8.30am to 5.30pm London time.

##### Fuel oil 1%S cif

Fuel oil 1% sulphur

The price is calculated by adding a cross UK-Continent freight cost assessment to the fuel oil 1pc fob northwest Europe price assessment.

The UK-Continent freight cost is based on current spot freight (WS100 rates) as they apply to an average of specific routes - Brofjorden to Rotterdam, Coryton to Le Havre, and Le Havre to Hamburg for 30,000t vessels.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** cif northwest Europe standardised to Rotterdam

**Specifications:** maximum 1% sulphur, cracked, 380cst, 0.991 specific gravity, minimum 65°C flash

**Assessment time:** 8.30am to 5.30pm London time.



### Fuel oil 3.5%S cif

Fuel oil 3.5% sulphur

In the absence of trade, talked differentials to the published volume-weighted average of 3.5pc barge values are used to assess values.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** cif northwest Europe standardised to Rotterdam/UK Thames Estuary

**Specifications:** maximum 3.5% sulphur, 380cst, 0.991 specific gravity, 300ppm maximum vanadium, H<sub>2</sub>S 2ppm

**Assessment time:** 8.30am to 5.30pm London time

### Fuel oil straight-run M-100 fuel oil cif

Russian straight run M-100 fuel oil

The price differential for Russian straight run M-100 fuel oil is assessed at a differential to the vol-ume-weighted average of Rotterdam barges.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** cif northwest Europe standardised to Rotterdam

**Specifications:** Russian high-sulphur straight-run fuel oil, typically maximum 3% sulphur, maximum viscosity 12°Engler at 80°C, xylene 26/30 maximum, toluene 30 maximum, pvalue 1.9/2.0 minimum, bromine 6 maximum

**Assessment time:** 8.30am to 5.30pm London time.

### VGO 0.5%S cif

Vacuum gasoil 0.5% sulphur

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** cif northwest Europe standardised to southern UK

**Specifications:** maximum 0.5% sulphur, less than 1ppm sodium, nickel, vanadium, less than 2ppm iron, typical 80-85°C aniline, typical 0.915 density, maximum 0.5% CCR, maximum 1,500ppm nitrogen

**Assessment time:** is 8.30am to 5.30pm London time

### VGO 2%S cif

Vacuum gasoil 2% sulphur

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 25,000-30,000t

**Basis:** cif northwest Europe standardised to southern UK

**Specifications:** maximum 2.0% sulphur, less than 1ppm sodium, nickel, less than 2ppm vanadium, iron, typical 75-80°C aniline, typical 0.925 density, maximum 0.5% CCR, maximum 1,700ppm nitrogen, maximum 700ppm asphaltenes

**Assessment time:** 8.30am to 5.30pm London time.

## Barges

### Fuel oil 1%S

Fuel oil 1% sulphur

In the absence of trade, talked differentials to the published volume-

weighted average of 3.5pc barge values are used to assess values.

**Unit:** US dollars/tonne

**Period:** loading 3-15 days forward (Monday-Tuesday) and 5-15 days forward (Wednesday-Friday)

**Basis:** fob Rotterdam/Antwerp

**Size:** standardised to 1,000-2,000t

**Specifications:** maximum 1% sulphur, 380cst at 50°C, 0.991 specific gravity, minimum 65°C flash

**Assessment time:** 8.30am to 5.30pm London time

### Fuel oil 3.5%S RMG

Fuel oil 3.5% sulphur

**Unit:** US dollars/tonne

**Period:** loading 3-15 days forward (Monday-Tuesday) and 5-15 days forward (Wednesday-Friday)

**Basis:** fob Rotterdam

**Size:** standardised to 1,000-2,000t

**Specifications:** maximum 3.5% sulphur, 380cst at 50°C, 0.991 specific gravity, 50ppm silicon, 30ppm aluminium, 300ppm maximum vanadium, H<sub>2</sub>S 2ppm

**Assessment time:** is 8.30am to 5.30pm London time

### Fuel oil VWA

The Argus Rotterdam high-sulphur fuel oil barge fob trade volume-weighted average (Argus HSFO VWA) is calculated from transactions reported to Argus for publication on the Argus Fuel Oil Bulletin Board.

The Argus HSFO VWA will be constructed from transactions concluded between 11.00am and 11.30am London time and 3.45pm and 4.45pm London time and reported to Argus by 11.30am and 4.45pm, respectively, for publication on the Argus Fuel Oil Bulletin Board. It is an arithmetic average of transactions that meet the specifications and requirements listed under Fuel oil 3.5% (see above).

Argus reserves the right not to include transactions reported to Argus within the Argus HSFO VWA at its discretion. Argus has an 11.30am and a 4.45pm London time cut-off point for the receipt of information. Argus reserves the right to discard any transaction for inclusion in the Argus HSFO VWA received after the cut-off points. Information received after the cut-off point for each time period will not be included in the Argus HSFO VWA unless Argus decides there are circumstances that warrant the information's inclusion.

Responsibility for submitting information submitted to Argus for inclusion in the Argus HSFO VWA is held by the submitting party. The Argus HSFO VWA will be constructed on the basis of the combined transactional information from both time periods.

The location of Rotterdam includes Europoort.

It is assumed that transactions have a nomination process that gives the buyer the right to nominate the laycan and that the buyer must give the seller 48 working hours notice of the dates required. Material is bunker quality for supply into the shipping market. In the event of there being no reported transactions the Argus HSFO VWA will be the mid-point of the Argus range for 3.5% high sulphur fuel oil barges.



### Fuel oil 3.5%S RMK

Fuel oil 3.5% sulphur RMK

The RMK 500cst differential barge price will be assessed as a differential to the mean of the RMG 3.5% sulphur 380cst barge quote, as assessed at 4.30pm London time. This differential will typically reflect the volume-weighted average of deals conducted during the trading period.

The RMK outright barge price will be calculated using the volume-weighted average of the RMK differential to the RMG 3.5% sulphur 380cst barge quote, as assessed at 4.30pm London time.

In the event of there being no reported RMK transactions, the RMK differential barge price assessment will be based on bids and offers in the market during the assessment time.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 2,000-5,000t. Trades for other qualities and quantities may be adjusted to reflect values for 2,000-5,000t

**Basis:** fob Rotterdam/Antwerp/Amsterdam, standardised to Rotterdam

**Specifications:** ISO 8217:2010 RMK, maximum 3.5% sulphur, 500cst at 50°C, 1.010 specific gravity, 60ppm aluminium plus silicon, 450ppm vanadium, H<sub>2</sub>S 2ppm

**Assessment time:** is 8.30am to 4.30pm London time

### VGO 0.5%S

Vacuum gasoil 0.5% sulphur.

**Unit:** US dollars/tonne

**Period:** loading 2-8 days forward

**Size:** standardised to 1,000-2,000t

**Basis:** fob Rotterdam

**Specifications:** maximum 0.5% sulphur, less than 1ppm sodium, nickel, vanadium, less than 2ppm iron, typical 80-85°C aniline, typical 0.915 density, maximum 0.5% CCR, maximum 1,500ppm nitrogen

**Assessment time:** 8.30am to 5.30pm London time

### VGO 2%S

Vacuum gasoil 2% sulphur

**Unit:** US dollars/tonne

**Period:** loading 2-8 days forward

**Size:** standardised to 1,000-2,000t

**Basis:** fob Rotterdam area

**Specifications:** maximum 2% sulphur, less than 1ppm sodium, nickel, less than 2ppm vanadium, iron, typical 75-80°C aniline, typical 0.925 density, maximum 0.5% CCR, maximum 1,700ppm nitrogen, maximum 700ppm asphaltene

**Assessment time:** is 8.30am to 5.30pm London time

### West Mediterranean

#### Fuel oil 1%S fob

Fuel oil 1% sulphur

The price will usually be netted back from the Argus 1% cif Mediterranean price assessment using an Argus assessment of cross-Mediterranean freight modified by regional market conditions.

The cross-Mediterranean freight cost will be based on current spot

freight rates (WS100 rates) as they apply to an average of specific routes. These routes are Santa Panagia Bay to Lavera, Zawia to Gibraltar and Marsa el-Brega to Genoa for 30,000t vessels.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 30,000-35,000t

**Basis:** fob Italian Isles

**Specifications:** maximum 1% sulphur, cracked, 380cst, 0.991 specific gravity, minimum 65°C flash

**Assessment time:** 8.30am to 5.30pm London time

#### Fuel oil 3.5%S fob

Fuel oil 3.5% sulphur

The price will be calculated by taking the 3.5% cif west Mediterranean price assessment and subtracting from it cross-Mediterranean spot freight. The cross-Mediterranean spot freight will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes. These are Santa Panagia Bay to Lavera, Zawia to Gibraltar and Marsa el-Brega to Genoa for 30,000t vessels.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 30,000-35,000t

**Basis:** fob Italian Isles

**Specifications:** maximum 3.5% sulphur, maximum viscosity 380cst, 0.991 specific gravity, maximum 0.15% ash, maximum 0.5% water, maximum CCR 18%, flash point 60°C minimum, combined aluminium and silicon 80ppm

**Assessment time:** 8.30am to 5.30pm London time

#### Fuel oil 1%S cif

Fuel oil 1% sulphur

The price is a net-forward from the mean of fob 1% cargoes assessment, adding on the Argus assessment of Baltic-Mediterranean freight, modified by regional market conditions.

The Baltic to Mediterranean freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes. These routes are Tallinn to Genoa, Ventspils to Lavera and Tallinn to Malta for 30,000t vessels.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 30,000-35,000t

**Basis:** The price is representative of basis cif Milazzo

**Specifications:** maximum 1% sulphur, cracked, 380cst, 0.991 specific gravity, minimum 65°C flash

**Assessment time:** 8.30am to 5.30pm London time

#### Fuel oil 3.5%S cif

Fuel oil 3.5% sulphur

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 30,000-35,000t

**Basis:** cif Lavera/Genoa

**Specifications:** maximum 3.5% sulphur, maximum viscosity 380cst, 0.991 specific gravity, maximum 0.15% ash, maximum 0.5% water, maximum CCR 18%, flash point 60°C minimum, combined aluminium and silicon 80ppm

**Assessment time:** 8.30am to 5.30pm London time

### VGO 0.5%S cif

Vacuum gasoil 0.5% sulphur

Prices will also be published as a \$/bl differential to the Ice Brent 1 minute marker at 4.30pm London time and converted to US dollars/tonne at a rate of 6.88853 bl/t. See the [Argus Crude methodology](#) for details of the Ice Brent 1 minute marker price. Argus reserves the right to determine which Ice Brent contract month is used as the basis for the calculation, in line with market conditions.

**Unit:** US dollars/tonne

**Period:** delivering 5-15 days forward

**Size:** standardized to 25,000-30,000t

**Basis:** cif western Mediterranean

**Specifications:** maximum 0.5% sulphur, less than 1ppm sodium, nickel, vanadium, less than 2ppm iron, typical 80-85°C aniline, typical 0.915 density, maximum 0.5% CCR, maximum 1,500ppm nitrogen

**Assessment time:** 8.30am to 5.30pm London time

### VGO 2%S cif

Vacuum gasoil 2% sulphur

Prices will also be published as a \$/bl differential to the Ice Brent 1 minute marker at 4.30pm London time and converted to US dollars/tonne at a rate of 6.81405 bl/t. See the [Argus Crude methodology](#) for details of the Ice Brent 1 minute marker price. Argus reserves the right to determine which Ice Brent contract month is used as the basis for the calculation, in line with market conditions.

**Unit:** US dollars/tonne

**Period:** delivering 5-15 days forward

**Size:** standardized to 25,000-30,000t

**Basis:** cif western Mediterranean

**Specifications:** maximum 2% sulphur, less than 1ppm sodium, nickel, less than 2ppm vanadium, iron, typical 75-80°C aniline, typical 0.925 density, maximum 0.5% CCR, maximum 1,700ppm nitrogen, maximum 700ppm asphaltenes.

**Assessment time:** is 8.30am to 5.30pm London time

### Black Sea

#### VGO 0.5%S fob

Vacuum gasoil 0.5% sulphur

The price is a netback from the mean of the cif Mediterranean cargoes assessment, based on the Argus assessment of Black Sea-Mediterranean freight, modified by regional market conditions. The Black Sea-Mediterranean freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes - Novorossiysk to Genoa, Tuapse to Malta and Novorossiysk to Lavera for 30,000t vessels.

Prices will also be published as a \$/bl differential to the Ice Brent 1 minute marker at 4.30pm London time and converted to US dollars/tonne at a rate of 6.88853 bl/t. See the [Argus Crude methodology](#) for details of the Ice Brent 1 minute marker price. Argus reserves the right to determine which Ice Brent contract month is used as the basis for the calculation, in line with market conditions.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 30,000-35,000t

**Basis:** fob Black Sea

**Specifications:** maximum 0.5% sulphur, less than 1ppm sodium, nickel, vanadium, less than 2ppm iron, typical 80-85°C aniline, typical 0.915 density, maximum 0.5% CCR, maximum 1,500ppm nitrogen

**Assessment time:** 8.30am to 5.30pm London time

#### VGO 2%S fob (Black Sea)

Vacuum gasoil 2% sulphur

The price is a net-back from the mean of the cif Mediterranean cargoes assessment, based on the Argus assessment of Black Sea-Mediterranean freight, modified by regional market conditions. The Black Sea-Mediterranean freight cost will be based on current spot freight rates (WS100 rates) as they apply to an average of specific routes - Novorossiysk to Genoa, Tuapse to Malta and Novorossiysk to Lavera for 30,000t vessels.

Prices will also be published as a \$/bl differential to the Ice Brent 1 minute marker at 4.30pm London time and converted to US dollars/tonne at a rate of 6.81405 bl/t. See the [Argus Crude methodology](#) for details of the Ice Brent 1 minute marker price. Argus reserves the right to determine which Ice Brent contract month is used as the basis for the calculation, in line with market conditions.

**Unit:** US dollars/tonne

**Period:** loading 5-15 days forward

**Size:** standardised to 30,000-35,000t

**Basis:** fob Black Sea

**Specifications:** maximum 2% sulphur, less than 1ppm sodium, nickel, less than 2ppm vanadium, iron, typical 75-80°C aniline, typical 0.925 density, maximum 0.5% CCR, maximum 1,700ppm nitrogen, maximum 700ppm asphaltenes.

**Assessment time:** is 8.30am to 5.30pm London time

## Bunkers — Rotterdam

### 180cst 3.5%S

See the [Argus Marine Fuels methodology](#).

### 380cst 3.5%S

See the [Argus Marine Fuels methodology](#).

### MGO

See the [Argus Marine Fuels methodology](#).

## Bunkers — Antwerp

### 180cst 3.5%S

See the [Argus Marine Fuels methodology](#).

### 380cst 3.5%S

See the [Argus Marine Fuels methodology](#).

### MGO

See the [Argus Marine Fuels methodology](#).

## Forward prices

### Gasoline swaps

Gasoline forward assessments are provided for the fob barge swaps market up to three months and two quarters forward.

The swaps are against the Argus 95 Ron 10ppm fob ARA barge quotation until the end of 2009 and the Argus Eurobob oxy fob ARA barge quotation from 2010.

The last day of quotation of the first month of the forward swaps table will be the 15th of that month.

### Naphtha swaps

Naphtha forward assessments are provided for the naphtha fob barge swaps market up to three months and two quarters forward.

The last day of quotation of the first month of the forward swaps table will be the 15th of that month.

### Jet cif NWE swaps

Jet assessments are provided for the jet swaps market up to three months and two quarters forward.

The last day of quotation of the first month of the forward swaps table will be the 15th of that month.

### Heating oil swaps

Heating oil assessments are provided for the swaps market up to three months and two quarters forward.

The last day of quotation of the first month of the forward swaps table will be the 15th of that month.

Prices reflect barges fob Amsterdam/Rotterdam/Antwerp.

### Diesel swaps

Diesel assessments are provided for the swaps market up to three months and two quarters forward.

The last day of quotation of the first month of the forward swaps table will be the 15th of that month.

Prices reflect 10ppm French cargoes cif northwest Europe.

### High-sulphur fuel oil barge swaps

High-sulphur fuel oil assessments are provided for the swaps markets in barges up to three months and two quarters forward.

The last day of quotation of the first month of the forward swaps table will be the 15th of that month.

### Low-sulphur fuel oil cargo swaps

Low sulphur fuel oil assessments are provided for the swaps market up to three months and two quarters forward.

The last day of quotation of the first month of the forward swaps table will be the 15th of that month.