METHODOLOGY AND SPECIFICATIONS GUIDE

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ARGUS RUSSIAN NETBACKS

Contents:

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The most up-to-date Argus Russian Netbacks methodology is available on www.argusmedia.com

Methodology overview

Methodology rationale

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

In the Russian crude oil and refined products markets, Argus publishes physical market prices in the open 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 market 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, and in other cases where deemed appropriate, 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 and directly from the back offices of market participants. Argus will accept market data by telephone, instant messenger, email or other means.

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

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. These 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 some transactional average methodologies, full details of the transactions verified are published electronically and are accessible by subscribers.

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 in most cases 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.
- Comparison to the same commodity traded for a different delivery timing.
- 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

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 and because of the varying transportation infrastructure found in all commodity markets. 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.

Transparency

Argus values transparency in energy markets. As a result, where available, 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.

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 Russian crude, refined products and netback prices are published in the Argus Russian Netbacks report. Subsets of these prices appear in other Argus market reports and newsletters in various forms. 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.

A publication schedule is available at www.argusmedia.com

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 and representative indicators of commodity market values and are free from distortion. 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 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.

Introduction

Netback indexation

Russia is the largest producer and exporter of energy in the world. Its refineries were built in Soviet times to produce mainly gasoline to satisfy internal fuel demand. Most other oil products produced at refineries are exported. Over 80pc of Russian fuel oil and more than half of its gasoil production end up abroad.

For this reason pricing of crude and oil products in Russia often follows the "export parity" model, under which domestic prices are calculated as the product's value on the international market netted back to a delivery basis in Russia. This methodology is often applied for trading and state regulation of the products market in Russia and other former Soviet Union countries.

The volumes of refining in Belarus are much higher than needed to supply the domestic market with fuel and most of the oil products produced are exported. The modernisation of Belarusian refineries allowed them to produce quality fuels highly competitive not only in the markets of neighbouring Russia and Ukraine, but also in EU countries.

Netback calculation

Netbacks for Russian and Belarusian oil products are calculated daily according to the formulas:

$$N = P - F - D - S + T \text{ for Russia}$$

or

$$N = P - F - D - S \text{ for Belarus}$$

where

N – netback index;
P – price assessment for crude or product at comparative international market (northwest Europe, west Mediterranean or Asia-Pacific);
F – cost of seaborne transportation, including tanker freight, insurance, and additional navigation costs excluded from freight rate, such as Rotterdam harbour duty, ice and towage due in Primorsk or demurrage payments for delays in the Turkish straits;
D – Export duty;
S – cost of loading, storage and transportation, including transit costs and costs of railcar rent.
T – Russian taxes (value-added tax (VAT) and excise).

Netback indexes are published daily in Argus Russian Netbacks excluding and including taxes, where applicable.

Price assessments

All components of the formula reflect values active on the date of price assessment. Argus assesses open market arms length prices for various grades of crude, oil products and LPG traded in Russia and abroad, including former Soviet Union countries, northwest Europe, the Mediterranean, Middle East, Americas, Asia-Pacific and CIS countries. Coverage of the Russian market includes spot market prices, netback values and differetials between the two.

Export destinations

When calculating netback indexes Argus uses market assessments of freight costs and officially published tariffs for destinations actively used by each refinery or crude production unit over last few months.

Supplies to illiquid and regional markets, or using routes where tariffs are not set on the open market, are not included in netback calculations.

Export duties

Export duty is set monthly based on international market price monitoring. Netback formulas for crude, products and LPG use the current month's export duty values. Export duty is not collected for supplies from Russia to Kazakhstan and from Belarus to Russia.

Transportation costs

Railways

Russian railway tariffs are based on the tariff policy of former Soviet Union countries' railways effective on the date of publication for own (leased) tonnage for Russian supplies and for inventory tonnage for Belarusian supplies. Netback formulas for export supplies through the ports of Kaliningrad in Russia in certain cases take into account the cost of ferry transportation between Ust-Luga and Batiysk.

Argus uses specialised software for railway tariff calculations, such as Rail-Tariff.

The following assumptions are used for tariff calculations:

- Number of tank car axles – four, oil products tank car capacity – 66t, average tank car load for oil products, benzene and methanol – 60t, for propane-butane mix – 32t, for propane – 34t. Gondola car capacity – 69t, the average gondola car load for petroleum coke – 65t
- All the tariffs are used excluding VAT, with the exception of internal transportation in Russia and Kazakhstan and empty tank car return in Russia.
- Export railway tariffs used in netback calculations are for full train (fixed-route dispatch), with the exception of tariffs for gasoline supplies to Kazakhstan, benzene and methanol that are set on a per car basis.
- Tariffs for empty tank car return are set on a per car basis.
- Extra charges:
  - security guarding costs (diesel, gasoline, etc.) are charged by the state railway security guard enterprise of the Russian Federation;
  - cargo security costs, used for calculation of the export alternative prices, are set for a loaded train (fixed-route dispatch);
  - in all other cases, the cargo security costs are set on a per car basis.
- Market rates for rail tank car rent are assessed and published on a monthly basis in Argus Neftetransport. The information on tonnage prices is collected by personal contacts, telephone, electronic mail and messengers. A cross-section of car fleet owners, operators and shippers (producers and traders) is consulted and the market information cross-referenced with active market participants. The rent costs are assessed in Russia (in roubles, ex-VAT), Ukraine and Kazakhstan (in US dollars, ex-VAT). The rates are published in Argus Neftetransport. The lease rate for gondola cars for petroleum coke transportation is assumed equal to the lease rate of gondola cars for coal transportation as published in the Argus Russian Generation Fuels and Power report.

The following base parameters are used for cost assessments:

- oil product, benzene and methanol tank car load – 60t, propane-butane car load – 32t, propane car load – 34t;
- gondola car load for petroleum coke transportation – 65t;
- speed of loaded tank car 550 km/d for oil products, 330 km/d for LPG and benzene and 200 km/d for methanol;
- speed of loaded gondola car for petroleum coke – 400 km/day;
- speed of empty railway tank car return – 330 km/d for oil products, benzene and LPG, 200 km/d - for methanol;
- speed of empty gondola car return for petroleum coke – 400 km/day;
- delays during tank car loading and discharge – four days for oil products, benzene, methanol and petroleum coke gondolas, five days for LPG;
- delay on each border station – one day.

Crude pipelines

Argus monitors crude pipeline tariffs in Russia set by the Federal Tariff Service. The tariffs are published in Argus Neftetransport.

Product pipelines

Products pipeline tariffs are set by the system operator Transneft and published in Argus Neftetransport.

Internal waterways

Argus publishes assessments of river freight costs, including intermediate loadings, every year in the May issue of Argus Neftetransport. The rates are monitored throughout the navigation season from May to December. The high values of freight rates and floating storage loading costs are used in netback calculations.

Seaborne transportation

The cost of seaborne transportation of oil products for all ports except Kaliningrad, Arkhangelsk, Murmansk, Nakhodka and Vanino is determined using the formula FR*WS/100, where

FR is the Worldscale base rate
WS is the Argus daily assessment of the freight market on liquid international shipping routes (voyage charter) published daily in the Argus Freight report

The cost of seaborne transportation for benzene, methanol and MTBE, and for oil products for the ports of Arkhangelsk, Murmansk, Kaliningrad, Vanino and Nakhodka is calculated on the basis of assessed costs published in Argus Neftetransport. See the Argus Neftetransport methodology.

The freight cost of bulk sea carriers is published in the Argus Russian Coal report. See the Argus Russian Coal methodology.

Loading and storage at port terminals

Argus monitors the published port terminal rates for loading operations from overland transportation to sea-going tankers. Crude and product port loading operations and storage rates are set by the Federal Tariff Service and terminal operators in Russia, and by terminal operators in other former Soviet Union states. The costs of loading operations are assessed in the January and July editions of Argus Neftetransport. The information is collected by personal contacts, telephone, electronic mail and messengers. A cross-section of terminal operators and shippers (producers and traders) is consulted and the information cross-referenced with active market participants. In certain cases loading costs may include transit pipeline or railway tariff (ports of Latvia and Estonia, Kotka).

Foreign exchange rates

For netback calculations Argus uses the Russian rouble rate of the Central Bank of Russia and the Kazakh tenge rate of the National Bank of Kazakhstan published on official websites for the date of assessment. For euro and US dollar rates, Argus uses the market rate provided by Interactive Data for 6pm London time. For netback calculations for supplies to Ukraine, Argus uses Ukrainian hryvna to euro rate of the National Bank of Ukraine published on the official website for the date of assessment, and the prevailing selling rate in the Ukrainian interbank market to convert Ukrainian hryvnia into US dollars.

Crude

Netbacks for Russian crude are calculated as daily prices for Urals basis cif Rotterdam and cif Augusta less freight, insurance, navigation expenses (Rotterdam and Primorsk port duties, Black Sea straits delays), loading costs, current export duty and Transneft pipeline tariff from Nizhnevartovsk. Argus price assessment methodologies are available online at www.argusmedia.com.

Price reporting methodologies:

International crude prices – Argus Crude
Urals quality – Argus Russian Domestic Crude Market
Transportation costs – Argus Nefte Transport

Fuel oil

Netbacks for Russian fuel oil are calculated as daily prices for 3.5pc, 1pc and m-100 fuel oil basis cif northwest Europe, cif west Mediterranean or c+f east China less freight, insurance, navigation expenses (Rotterdam port duties, Black Sea straits delays), current export duty and railway tariffs between individual refineries and loading ports. Argus price assessment methodologies are available online at www.argusmedia.com.

Price reporting methodologies:

European fuel oil prices – Argus European Products
Asian fuel oil prices – Argus Asia-Pacific Products
Russian fuel oil prices – Argus Russian Fuel Oil
Transportation costs – Argus Nefte Transport

Gasoil and diesel

Netbacks for Russian gasoil and diesel are calculated as daily prices for heating oil 0.1% cif NWE and cif Med, French diesel 10ppm cif NWE and cif Med, gasoil 0.5% fob Asia-Pacific less freight, insurance, navigation expenses (Rotterdam and Primorsk port duties), loading costs, current export duty and railway tariffs between individual refineries and loading ports.

Netbacks for Belarusian diesel are calculated as daily prices for French diesel 10ppm cif NWE, Belarusian diesel fca Korosten (Ukraine) or price index for diesel cpt Moscow (Russia) less freight, insurance, navigation expenses (Rotterdam port duties), loding costs, current export duty and railway tariffs between individual refineries and loading ports and railcar rent.

Price index for the Moscow region of Russia

Argus calculates the Russian diesel price index as an average between the diesel assessment fca Moscow, diesel price fca Yaroslavl, plus the railway transportation cost between Yaroslavl and Moscow, and the diesel price fca Ryazan, plus the railway transportation cost between Ryazan and Moscow.

The Russian diesel price index less VAT, excise duty and rail transportation costs is used to produce the Belarusian diesel netback for refineries supplying fuel to Russia.

For October-April, inclusive, Argus calculates the netback for Belarusian diesel based on the Russian diesel price using prices for the interseasonal-grade diesel produced by Moscow, Yaroslavl and Ryazan refineries. If one or a number of refineries have not started selling interseasonal-grade diesel, the calculation will remain based on summer-grade prices until interseasonal-grade loading begins.

Argus price assessment methodologies are available online at www.argusmedia.com.

Price reporting methodologies:

European gasoil and diesel prices – Argus European Products
Asian gasoil and diesel prices – Argus Asia-Pacific Products
Russian diesel prices – Argus Russian Motor Fuels
Ukrainian diesel prices – Argus Ukrainian Oil Products
Central Asian diesel prices – Argus Caspian Markets
Transportation costs – Argus Nefte Transport

Jet

Netbacks for Russian jet fuel are calculated as daily prices for jet cif NWE and Med or the Kazakh jet index basis Almaty less freight, insurance, loading costs, current export duty and railway tariffs between individual refineries and loading ports or border crossing points and railcar rent. Argus price assessment methodologies are available online at www.argusmedia.com.

Jet price index in Kazakhstan

Argus calculates the Kazakh jet price index by adding railway transportation costs from the Pavlodar and Chimkent refineries to Almaty to jet fuel assessments basis fca Pavlodar and fca Chimkent less VAT. The Kazakh jet price index less rail transportation costs is used to produce the Russian jet netback for refineries supplying fuel to Kazakhstan.

Price reporting methodologies:

European jet prices – Argus European Products
Asian jet prices – Argus Asia-Pacific Products
Central Asian jet prices – Argus Caspian Markets
Transportation costs – Argus Nefte Transport

Naphtha

Netbacks for Russian naphtha are calculated as daily prices for naphtha 65 para cif (NWE and Med), or naphtha 65 para c+f Japan (Asia-Pacific) less freight, insurance, navigation expenses (Rotterdam port duties), loading costs, current export duty and railway tariffs between individual refineries and loading ports and rail car rent. Argus price assessment methodologies are available online at www.argusmedia.com.

Price reporting methodologies:

European naphtha prices – Argus European Products
Asian naphtha prices – Argus Asia-Pacific Products
Transportation costs – Argus Nefte Transport

Motor gasoline

Netbacks for Russian gasoline are calculated as daily prices for motor gasoline cif NEW, cif Med, fob Asia-Pacific or the Kazakh gasoline index basis Astana less freight, insurance, current export duty, loading costs and railway tariffs between individual refineries and loading ports or border crossing points and railcar rent.

Netbacks for Russian gasoline AI-92 are calculated as daily prices for motor gasoline 95r cif Mediterranean less the differential between gasoline 95r cif northwest Europe and gasoline 91r cif northwest Europe less freight, insurance, current export duty, loading costs and railway tariffs between individual refineries and loading ports or border crossing points and railcar rent.

Netbacks for Belarusian gasoline are calculated as daily prices for French diesel 10ppm cif NWE, Belarusian diesel fca Korosten (Ukraine) or price index for gasoline cpt Moscow (Russia) less freight, insurance, navigation expenses (Rotterdam port duties), loading costs, current export duty and railway tariffs between individual refineries and loading ports and railcar rent.

Motor gasoline price index in Kazakhstan

Argus calculates the Kazakh motor gasoline price index for 92-93 Ron and 95-96 Ron product by adding railway transportation costs from the Atyrau, Pavlodar and Chimkent refineries to Astana to gasoline assessments basis fca Atyrau, fca Pavlodar and fca Chimkent less VAT. The Kazakh gasoline price index less rail transportation costs is used to produce the Russian gasoline netback for refineries supplying fuel to Kazakhstan.

Price index for the Moscow region of Russia

Argus calculates the Russian gasoline price index for 92 Ron and 95 Ron as an average between the gasoline assessment fca Moscow, the gasoline price fca Yaroslavl, plus the railway transportation cost between Yaroslavl and Moscow, and the gasoline price fca Ryazan, plus the railway transportation cost between Ryazan and Moscow. The Russian gasoline price index less VAT, excise duty and rail transportation costs is used to produce the Belarusian gasoline netback for refineries supplying fuel to Russia.

Argus price assessment methodologies are available online at www.argusmedia.com.

Price reporting methodologies:

European gasoline prices – Argus European Products
Asian gasoline prices – Argus Asia-Pacific Products
Central Asian gasoline prices – Argus Caspian Markets
Russian gasoline prices – Argus Russian Motor Fuels
Transportation costs – Argus Nefte Transport

Vacuum gasoil

Netbacks for vacuum gasoil (VGO) are calculated as daily prices for VGO 2% cif (NWE) less freight, insurance, navigation expenses (Rotterdam port duties), loading costs, current export duty and railway tariffs between individual refineries and loading ports. Netbacks for VGO are also calculated as daily prices for VGO 2% fob Black Sea less loading costs and railway costs, including railcar rent and export duty. Argus price assessment methodologies are available online at www.argusmedia.com.

Price reporting methodologies:

European VGO prices – Argus European Products
Asian VGO prices – Argus Asia-Pacific Products
Transportation costs – Argus Nefte Transport

LPG

Netbacks for Russian propane are calculated as daily prices for propane at the Russia-Poland border less railway costs, railcar rent and export duty.

Netbacks for Russian butane are calculated as daily prices for butane fob Black sea ports less railway costs, railcar rent and export duty.

Netbacks for Russian propane-butane mix are calculated as daily prices for propane-butane mix at the Russia-Poland border, Russia-Ukraine border, Uzbekistan-Tajikistan border or Black Sea ports less loading costs and railway costs, including railcar rent and export duty. Argus price assessment methodologies are available online at www.argusmedia.com.

Price reporting methodologies:

LPG prices – Argus International LPG
Transportation costs – Argus Nefte Transport

Base oils

Netbacks for Russian base oils are calculated as weekly prices for Base Oil SN150 and Base Oil SN500 fob Baltic, Black Sea or cpt Naushki less loading costs and railway costs, including rail car rent and export duty.

Argus price assessment methodologies are available online at www.argusmedia.com.

Price reporting methodologies:
Base oils prices – Argus Base Oils
Transportation costs – Argus Nefte Transport

See detailed table of netbacks components on pp9-11.

Benzene

Netbacks for Russian benzene are calculated as the daily Benzene Europe spot price assessment less freight, loading costs, railway tariffs between individual plants and loading ports, rail car rent and export duty.

Price reporting methodologies:
Benzene prices – Argus Benzene Daily

Methanol

Netbacks for Russian methanol are calculated as weekly spot prices for methanol fob Rotterdam less freight, loading costs, railway tariffs between individual plants and loading ports and rail car rent.

Price reporting methodologies:
Methanol prices – Argus Global Methanol

MTBE

Netbacks for Russian MTBE are calculated as daily spot prices for MTBE fob Rotterdam less freight, loading costs, railway tariffs between individual plants and loading ports and railcar rent.

Price reporting methodologies:
MTBE prices – Argus European Products

Petroleum Coke

Netbacks for Russian petroleum coke are calculated as weekly prices for petroleum coke with sulphur content 4.5pc delivered northwest Europe — ARA less freight, export duty, loading costs, railway tariffs between individual plants and loading ports and gondola car rent.

Price reporting methodologies:
Petroleum coke prices — Energy Argus Petroleum Coke

Highest products netbacks

Oil products netbacks for the most efficient export direction for each refinery are chosen and published daily in separate tables.

Russian netbacks calculation components

Product	Price assessment	Freight	Additional costs	Loading costs	Export duty	Excise duty	Tariff outside the country of origin	Tariff in the country of origin
CRUDE								
Northwest Europe	Urals cif NWE	Primorsk – Rotterdam (100,000t)	Insurance, Rotterdam port duty, ice and towage due in Primorsk	Primorsk	Current month	–	–	Pipeline
Mediterranean	Urals cif Med (80,000t)	Novorossiysk – Augusta (80,000t)	Insurance, demmurage costs in Bosporus and Dardanelles	Novorossiysk	Current month		–	Pipeline
Asia-Pacific	ESPO Blend fob Kozmino	–	–	Kozmino	Current month		–	Pipeline
FUEL OIL								
Northwest Europe	Fuel oil 3.5pc cif NWE	Baltic ports – Rotterdam (100,000t), St Petersburg – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Baltic ports	Current month	–	Belarus (Klaipeda)	Railway, river freight
Northwest Europe	Fuel oil straight run M-100 cif NWE	Baltic ports – Rotterdam (100,000t), St Petersburg – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Baltic ports	Current month		Belarus (Klaipeda)	Railway, river freight
Northwest Europe	Fuel oil straight run M-100 NWE cif, Fuel oil 3.5% cif NWE	Murmansk– Rotterdam (30,000t)	Insurance, Rotterdam port duty	Murmansk	Current month		–	Railway
Northwest Europe	Fuel oil 3.5% cif NWE	Kaliningrad – Rotterdam (15,000t)	Insurance, Rotterdam port duty	Kaliningrad	Current month		–	Railway
Northwest Europe	Fuel oil 1% cif NWE	Baltic ports – Rotterdam (100,000t)	Insurance, Rotterdam port duty	Baltic ports	Current month		–	Railway

Russian netbacks calculation components

Product	Price assessment	Freight	Additional costs	Loading costs	Export duty	Excise duty	Tariff outside the country of origin	Tariff in the country of origin
Mediterranean	Fuel oil 3.5pc cif W Med	Black Sea ports – Genoa/Lavera (100,000t)	Insurance	Black Sea ports	Current month	–	Ukraine (Odessa)	Railway, river freight
Mediterranean	Fuel oil 3.5% cif W Med	Kerch roads – Genoa/ Lavera (80,000t)	Insurance	Kerch roads	Current month		–	River freight
Mediterranean	Fuel oil 1pc W Med cif	Black Sea ports – Genoa/Lavera (30,000t)	Insurance	Black Sea ports	Current month		–	Railway
Asia-Pacific	Fuel oil M-100 East China	Vanino/Nakhodka – Qingdao (60,000t)	–	Nakhodka, Vanino	Current month		–	Railway
GASOIL OVER 50PPM								
Northwest Europe	Heating oil 0.1% cif NWE	Baltic ports – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Baltic ports	Current month	Effective value for diesel and middle distillates	Belarus, Lithuania	Railway
Northwest Europe	Heating oil 0.1% cif NWE	Arkhangelsk –Rotterdam (20,000t)	Insurance, Rotterdam port duty	Arkhangelsk	Current month		–	Railway
Northwest Europe	Heating oil 0.1% cif NWE	Saint-Petersburg–Rotterdam (30,000t)	Insurance, Rotterdam port duty	Saint-Petersburg	Current month		–	Railway
Mediterranean	Heating oil 0.1% cif Med	Black Sea ports – Genoa/Lavera (30,000t)	Insurance, Rotterdam port duty	Black Sea ports	Current month		–	Railway
Asia-Pacific	Gasoil 0.5pc fob Singapore	Vanino/Nakhodka – Singapore (40,000t)	–	Nakhodka, Vanino	Current month		–	Railway
DIESEL 10PPM								
Northwest Europe	Gasoil diesel French 10ppm cif NWE	Baltic ports – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Baltic ports	Current month	Effective value for diesel	–	Railway
Northwest Europe	Gasoil diesel French 10ppm cif NWE	Arkhangelsk– Rotterdam (20,000t)	Insurance, Rotterdam port duty	Arkhangelsk	Current month		–	Railway
Northwest Europe	Gasoil diesel French 10ppm cif NWE	Murmansk – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Murmansk	Current month		–	Railway
Northwest Europe	Gasoil diesel French 10ppm cif NWE	Baltic ports – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Primorsk, Ventspils	Current month		–	Pipeline
Northwest Europe (from Belarus)	Gasoil diesel French 10ppm cif NWE	Ventspils – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Ventspils	Current month		–	Railway
Mediterranean	Gasoil diesel French 10ppm cif Med	Novorossiysk – Genoa/ Lavera (30,000t)	Insurance	Novorossiysk	Current month		–	Railway
Ukraine (from Russia)	Gasoil diesel summer 10ppm ddu Novograd-Volynsky	–	–	–	–		Belarus, Ukraine	Pipeline
Ukraine (from Belarus)	Gasoil diesel summer/winter 10ppm fca Korosten	–	–	–	Current month		Ukraine	Railway
Russia (from Belarus)	Gasoil diesel summer/winter Moscow, Yaroslavl, Ryazan	–	–	–	–		Russia	Railway
JET								
Northwest Europe	Jet-kerosine cif NWE	Baltic ports – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Baltic ports	Current month	–	–	Railway
Northwest Europe	Jet-kerosine cif NWE	Arkhangelsk – Rotterdam (20,000t)	Insurance, Rotterdam port duty	Arkhangelsk	Current month		–	Railway
Northwest Europe	Jet-kerosine cif NWE	Murmansk – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Murmansk	Current month		–	Railway
Kazakhstan	Jet-kerosine fca Chimkent/Pavlodar	–	–	–	–		Kazakhstan	Railway
Mediterranean	Jet/Kerosene W Med	Novorossiysk, Tuapse–Genoa/ Lavera (30,000t)	Insurance	Novorossiysk, Tuapse	Current month		–	Railway

Russian netbacks calculation components

Product	Price assessment	Freight	Additional costs	Loading costs	Export duty	Excise duty	Tariff outside the country of origin	Tariff in the country of origin
Asia-Pacific	Jet/Kerosene fob Singapore	Nakhodka –Singapore (40,000t)	–	Nakhodka	Current month	–	–	Railway
NAPHTHA								
Northwest Europe	Naphtha 65 para cif NWE	Baltic ports – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Baltic ports	Current month	Effective value for naphtha	–	Railway
Northwest Europe	Naphtha 65 para cif NWE	Arkhangelsk (20,000t), Murmansk (30,000t) –Rotterdam	Insurance, Rotterdam port duty	Arkhangelsk, Murmansk	Current month		–	Railway
Northwest Europe	Naphtha 65 para cif NWE	Kaliningrad – Rotterdam (15,000t)	Insurance, Rotterdam port duty	Kaliningrad	Current month		–	Railway, Ust-Luga – Baltiysk ferry
Mediterranean	Naphtha 65 para cif W Med	Tuapse, Novorossiysk, Taman – Genoa/Lavera (30,000t)	Insurance	Tuapse, Novorossiysk, Taman	Current month		–	Railway
Asia-Pacific	Naphtha c+f Japan	Vanino/Nakhodka – Chiba (40,000t)	–	Nakhodka, Vanino	Current month		–	Railway
MOTOR GASOLINE AI-92								
Northwest Europe	Gasoline 91R cif NWE	Baltic ports – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Baltic ports	Current month	Effective value for gasoline	–	Railway
Northwest Europe	Gasoline 91R cif NWE	Kaliningrad – Rotterdam (15,000t)	Insurance, Rotterdam port duty	Kaliningrad	Current month		–	Railway, Ust-Luga – Baltiysk ferry
Northwest Europe (from Belarus)	Gasoline 91R cif NWE	Ventspils – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Ventspils	Current month	Effective value for gasoline	–	Railway
Asia-Pacific	Gasoline 92R fob Singapore	Vanino/Nakhodka – Singapore (40,000t)	–	Nakhodka, Vanino	Current month		–	Railway
Mediterranean	Gasoline 95r cif Med - diff(Gasoline 95r cif NWE - Gasoline 91r cif NWE)	Taman — Genoa/Lavera (30,000t)	Insurance	Taman	Current month		–	Railway
Kazakhstan	Gasoline AI-92/93 fca Chimkent/Pavlodar/ Atyrau	–	–	–	–		Kazakhstan	Railway
Ukraine (from Belarus)	Gasoline A-92 fca Korosten	–	–	–	Current month		Ukraine	Railway
Russia (from Belarus)	Gasoline AI-92 Moscow, Yaroslavl, Ryazan	–	–	–	–		Russia	Railway
MOTOR GASOLINE AI-95								
Northwest Europe	Gasoline 95R cif NWE	Baltic ports – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Baltic ports	Current month	Effective value for gasoline	–	Railway
Northwest Europe	Gasoline 95R cif NWE	Kaliningrad – Rotterdam (15,000t)	Insurance, Rotterdam port duty	Kaliningrad	Current month		–	Railway, Ust-Luga – Baltiysk ferry
Northwest Europe (from Belarus)	Gasoline 95R cif NWE	Ventspils – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Ventspils	Current month		-	Railway
Mediterranean	Gasoline 95r cif Med	Taman — Genoa/ Lavera (30,000)	Insurance	Taman	Current month		–	Railway
Asia-Pacific	Gasoline 95R fob Singapore	Vanino/Nakhodka – Singapore (40,000t)	–	Nakhodka, Vanino	Current month		–	Railway
Kazakhstan	Gasoline AI-95/96 fca Chimkent/Pavlodar/ Atyrau	–	–	–	–		Kazakhstan	Railway
Ukraine (from Belarus)	Gasoline A-95 fca Korosten	–	–	–	Current month		Ukraine	Railway
Russia (from Belarus)	Gasoline AI-92 Moscow, Yaroslavl, Ryazan	–	–	–	–		Russia	Railway

Russian netbacks calculation components

Product	Price assessment	Freight	Additional costs	Loading costs	Export duty	Excise duty	Tariff outside the country of origin	Tariff in the country of origin
VACUUM GASOIL								
Northwest Europe	VGO 2pc cif NWE	Baltic ports – Rotterdam (30,000t)	Insurance, Rotterdam port duty	Baltic ports	Current month	–	Belarus, Lithuania	Railway, river freight
Mediterranean	VGO 2pc fob Black Sea			Tuapse, Taman, Novorossiysk	Current month			Railway
Mediterranean	VGO 2pc cif W Med	Kerch roads – Genoa/ Lavera (30,000t)		Kerch roads	Current month		–	River fright
PROPANE-BUTANE MIX								
Poland	Propane-Butane Poland daf Brest	–	–	–	Current month	–	Belarus	Railway
Tajikistan	Propane-Butane daf Bekabad	–	–	–	Current month		Kazakhstan	Railway
Ukraine	Propane-Butane daf Ukraine	–	–	–	Current month		–	Railway
Black Sea	Propane-Butane fob Black Sea	–	–	Ilyichevsk	Current month		Ukraine	Railway
PROPANE								
Poland	Propane Poland daf Brest	–	–	–	Current month	–	Belarus	Railway
BUTANE								
Black Sea	Butane fob Black Sea	–	–	Taman	Current month	–	–	Railway
BASE OIL SN150								
Baltic	Base Oil SN150 fob Baltic Sea	–	–	Baltic ports	Current month	–	Belarus, Lithuania	Railway
Black Sea	Base Oil SN150 fob Black Sea	–	–	Temruk	Current month			Railway
China	Base Oil SN150 cpt Naushki	–	–	–	Current month		–	Railway
BASE OIL SN500								
Baltic	Base Oil SN150 fob Baltic Sea	–	–	Baltic ports	Current month	–	Belarus, Lithuania	Railway
China	Base Oil SN500 cpt Naushki	–	–	–	Current month		–	Railway
METHANOL								
Baltic	Methanol fob Rotterdam T2 spot	Kotka-Rotterdam (5,000t)	–	Kotka	-	–	-	Railway
BENZENE								
Baltic	Benzene Europe spot cif ARA	Liepaja — Rotterdam	–	Liepaja	Current month	–	Latvia	Railway
MTBE								
Baltic	MTBE fob Rotterdam	Kotka-Rotterdam (12,000t)	–	Kotka	-	–	-	Railway
PETROLEUM COKE								
Baltic	Petroleum Coke del ARA 4.5% sulphur	Ust-Luga — Rotterdam (30,000—40,000t)	–	Ust-Luga	Current month	–	–	Railway