METHODOLOGY AND SPECIFICATIONS GUIDE

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ARGUS NEFTE TRANSPORT

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The most up-to-date Argus Nefte Transport 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 market for oil transportation and logistics in the former Soviet Union, 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. 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 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 prices for oil transportation and logistics in the former Soviet Union are published in the Argus Nefte Transport 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

Argus Nefte Transport is a monthly publication covering wide range of crude and oil products supply logistics in Russia and other former Soviet Union states. The publication contains pipeline and rail tariffs, sea and river freight rates and port terminals' storage and loading costs.

Maritime freight

Argus publishes assessments of market rates for maritime transportation of crude and products.

Time charter rates

Argus publishes assessments for one year time charter rates in Argus Neftetransport monthly report. Argus publishes rates for vessels with deadweight of 10,000-15,000t, 15,000-25,000t, 25,000-37,000t, 37,000-47,000t, 47,000-55,000t, 55,000-80,000t, 80,000-100,000t and 100,000-147,000t.

Freight indexes

Argus calculates freight indexes for illiquid market routes by converting time-charter rate, port call costs and bunker fuel costs for duration of round voyage. The indexes are calculated daily according to the formula:

$$I = P + B + T + C$$

where

I – freight index
P – port call costs in loading and discharge ports
B – bunker fuel cost
T – vessel hire cost (time charter rate for a round voyage)
C – ship brokers' commissions (2.5pc of vessel hire cost)

Vessel hire costs are calculated basing on one-year time charter rates published in Argus Neftetransport monthly. Port call costs in loading and discharge ports are assessed in January. Rates may also change when icebreaking fees are introduced or withdrawn during the year. Daily bunker fuel price assessments are published in Argus Marine Fuels.

Cross Black Sea freight index

Argus calculates freight indexes for 80,000t and 140,000t crude cargoes shipped across Black Sea.

The indexes are published in $ per vessel and calculated using the following formula:

$$Lumpsum = V * BSM - S,$$

where

Lumpsum – the assessed freight index of a tanker on the route Novorossiysk-port of unloading in the Black Sea (Burgas, Konstanza or Midia), in US dollars
V – cargo volume (80,000t or 140,000t)
BSM – the freight rate in US dollars per tonne on the route Black Sea-Mediterranean (Argus Black Sea-Mediterranean dirty 80kt or Argus Black Sea-Mediterranean dirty 135kt price assessment published in Argus Tanker Freight. See the Argus Tanker Freight methodology)
S – the discount to the freight rate on the Black Sea-Mediterranean route, in US dollars, calculated using the following formula

$$S = D * T,$$

where

D – the cost of demurrage of Aframax or Suezmax vessels respectively per day in US dollars
T – the time required by an Aframax or Suezmax vessel to travel from the Turkish straits to Mediterranean ports and saved by a shipowner when unloading in a Black Sea port in comparison to shipping to the Mediterranean. Argus assesses this value in the range of two to three days.

Argus publishes demurrage costs per day per vessel on the Black Sea – Mediterranean route in in Argus Tanker Freight. See the Argus Tanker Freight methodology.

Vessel deadweight	
Port	**Deadweight, *'000 dwt***
Nakhodka	40
Nakhodka	60
Vanino	40
Vanino	60
Singapore	40
Qingdao	60
Chiba	40

Voyage details	
Speed, knots	13
Contigency, %	0.5
Laytime, days	3

Distance between ports		*nautical miles*
Disport/Loadport	**Nakhodka**	**Vanino**
Singapore	3,021	3,507
Qingdao	1,018	1,504
Chiba	932	1,079

Freight rates for Russian crude transport

Argus publishes monthly average freight rates for vessels carrying Russian crude on the routes listed below. Rates are published in US dollars per voyage and US dollars per tonne. For each route, two sets of rates are published, one assessed based on market information and one calculated using time-charter equivalent rates and costs. See the Argus Tanker Freight methodology for more information.

Black Sea

- Novorossiysk-west cost India 80,000t
- Novorossiysk-north China 80,000t
- Novorossiysk-west cost India 140,000t
- Novorossiysk-north China 140,000t

Baltic Sea

- Primorsk-west cost India 100,000t
- Primorsk-north China 100,000t

Barents Sea

- Murmansk-west cost India 140,000t
- Murmansk-north China 140,000t

The rates are available via Argus Direct on the first business day of the following month in Russia.

Caspian Sea freight rates

Argus assesses freight rates for crude and oil products in the Caspian Sea as well as between Caspian ports and Azov-Black Sea basin ports. See the Argus Caspian Transportation methodology.

Azov-Black Sea freight rates

Argus assesses freight rates for river-sea vessels for oil product shipments on the following routes:

- Novorossiysk/Tuapse-Bulgarian and Romanian ports
- Temryuk-Kavkaz OPL (outside port limits)
- Temryuk-Gebze
- Bulgarian and Romanian ports-Georgian ports
- Rostov-on-Don/Azov-Kavkaz OPL (outside port limits)
- Taganrog-Kavkaz OPL (outside port limits)
- port Kavkaz-Kavkaz OPL (outside port limits)

Freight rates are assessed on the first working day of every month through discussion with shipowners, ship brokers, cargo owners and other market participants.

Tanker freight rates are for 5,000-7,000 deadweight tonne (dwt) vessels. Freight rates are published in US dollars per tonne.

Additional war risk premium

A weekly assessment of the cost of additional war risk insurance premiums (AWRP) for vessels calling at Russian ports in the Black, Baltic and Barents seas.

AWRP for crude carrying vessels are published for

- Aframax - Black Sea and Baltic Sea
- Suezmax - Black Sea and Barents Sea

AWRP for clean-product carrying vessels are published for

- MR - Black Sea and Baltic Sea
- Handysize - Black Sea and Baltic Sea

Assessments are based on monthly information about the insurance value of five- and 10-year old Handysize, MR, Aframax and Suezmax vessels and a weekly assessment of the insurance premium charged by non-Russian insurers as a percentage of that value for vessels remaining in the area for up to 10 days. AWRP is published in US dollars.

Rates are assessed and published every Monday on the Argus Direct platform and in the Argus Neftetransport report each month. If Monday is a Russian holiday, rates will be assessed and published on the next business day.

River freight

Argus monitors costs of product exports along the Russian inland waterways. River vessel freight rates are assessed once a year at the start of river navigation, normally in March-April, and are published in Argus Neftetransport through the river navigation season from April to December. Freight rates are monitored by the enquiries of the most active participants of the river transportation market. Argus Neftetransport publishes bunker prices at Russian river ports during the navigation season. See the Argus Heavy Oil Products and Marine Fuels methodology.

Railway transportation costs

Russian railway tariffs are based on the tariff policy of Russian Railways for own (leased) tonnage effective on the date of publication. Argus uses specialized Rail-Tariff software for railway tariff calculation.

The following assumptions are used for tariff calculations:

- Number of tank car axles – 4;
- Tank car capacity – 66t;
- Average tank car load regardless of product type – 60t;
- Value added tax in Russia (VAT)
  - tariffs for export crude or product cargoes shipped from Russia do not include VAT;
  - tariffs for crude or products shipments within Russia for domestic consumption include VAT;
  - tariffs for empty tank car return in Russia include VAT, regardless of whether these cars return from Russian or non-Russian dispatch station.
- Loaded train dispatch type (number of railway cars):
  - export railway tariffs, used for the calculation of fuel oil and diesel export alternative prices, are set for full train (fixed-route dispatch);
  - in all other cases, the tariffs are set on a per car basis.
- The tariffs for empty railway tank car return in Russia are set on per car basis.
- Extra charges:
  - security guarding costs (diesel, gasoline, etc.) are charged by the State railway security guard enterprice of the Russian Federation;
  - the 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.

Argus Neftetransport publishes monthly tank car rent costs assessments. A cross-section of car fleet owners, operators and shippers (producers and traders) is consulted.

Rent costs in Russia are assessed in roubles, ex-VAT, for contracts of at least 12 months. The costs exclude tank car input-output and preparation. Current maintenance expenses are excluded and planned maintenances expenses are included. Planned maintenance is carried out by owners and current maintenance by renters.

Rent costs are also published for Kazakhstan, in US dollars, ex-VAT. See the Argus Caspian Transportation methodology.
Argus Neftetransport includes monthly gas tank car rent cost assessments in Russia (in roubles, ex-VAT).

A cross-section of car fleet owners and operators is consulted.

Argus assessed gas tank cars of 73 m^3 and 83 m^3 volume. The rates include planned maintenance expenses and excludes current maintenance expenses.

The rates are published on Argus Direct on the first working day each month and in the Argus Neftetransport report no later than the 20th of each month.

The following base parameters are used for cost assessments:

- tank car load – 60t;
- speed of loaded tank car – 330km/d within Russia, 550km/d – on export routes;
- speed of empty railway tank car return – 330km/d;
- delays during tank car loading and discharge – 4 days;
- Delay on each border station – 1 day.

Pipeline tariffs

Argus monitors crude and product pipeline transportation tariffs in Russia set by the Federal Antimonopoly Service (FAS). The tariffs are normally adjusted once or twice a year. FAS sets the maximum tariff rates for product pipeline transportation, while pipeline system operator Transneft is responsible for setting tariffs below the maximum level.

Port loading costs

Argus monitors and publishes 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 terminal operators in Russia and other former Soviet Union states. The costs of loading operations are assessed twice each year, and published in the January and July edition of Argus Nefte Transport. 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.

Ports where costs are priced in more than one currency are converted to roubles at the Russian Central Bank rate. Costs published electronically on Argus Direct are converted using the daily exchange rate. Costs published in the Argus Nefte Transport print report are converted using the exchange rate on the first working day of the month of publication. Ports where costs are priced in only one currency are published in that currency.