METHODOLOGY AND SPECIFICATIONS GUIDE

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ARGUS CASPIAN MARKETS

Contents:

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The most up-to-date *Argus Caspian Markets* 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 Caspian crude and 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. 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 Caspian crude and products prices are published in the Argus Caspian Markets 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 Caspian Markets is a weekly market report available in the Russian and English languages that covers the crude and products markets of the Caspian region and central Asian countries. Coverage includes the relevant areas of Russia, Kazakhstan, Azerbaijan, Turkmenistan, Uzbekistan, Kyrgyzstan, Tajikistan and Afghanistan.

The publication features price assessments for key regional grades of crude and products, market analysis, changes in transportation tariffs, freight rates and other export related expenses, trade and industry news. The Russian-language version is available every Wednesday at 18:00 (Moscow time) and the English-language version is available every Friday at 18:00 (London time).

Most price and netback assessments carry the same timestamp in both publications, with the exception of crude and product prices and tanker freight rates appearing on pages 1 and 2, respectively. In the English-language version, the crude and product prices carry a Thursday timestamp, as do the tanker freight rates (apart from cross-Caspian rates, which carry a Wednesday timestamp and are monitored every two months).

Crude assessments

Argus Caspian Markets contains price assessments for different grades of crude oil.

Argus Caspian Markets contains the following weekly snapshot crude price assessments:

- North Sea Dated
- Urals cif Med Aframax
- CPC Blend cif Med
- Alashankou Blend daf Alashankou
- BTC Blend cif Med
- Saharan Blend cif Med
- Zarzantin fob Sehira
- Es Sider fob Lybia
- Iran Light fob Sidi Kerir
- Iran Heavy fob Sidi Kerir
- Suez Blend for Ras Shukeir
- Basra Light fob Sidi Kerir
- Kirkuk fob Ceyhan

International prices are taken from Argus Crude. For a detailed explanation of the methodology behind the international crude assessments see the Argus Crude methodology.

Alashankou Blend

Argus Caspian Markets also includes an assessment for Alashankou Blend of Kazakh and Russian crudes at the Kazakh-China border based on long-term contract prices. The Blend price is calculated as a differential to North Sea Dated. The differential is set annually in January by CNPC, as a single buyer. Information the about differential is also collected from sellers in Kazakhstan and Russia.

Alashankou Blend specifications

Grade	Typical °API	Typical sulphur %	Basis/ Location	Timing	Cargo size
Alashankou Blend	42	0.40	daf Alashankou	Balance of current month	30,000t

Crude supplied to refineries

Argus publishes prices for crude cargoes supplied to specific refineries. Prices are assessed based on trades, bids and offers. Prices are assessed on a monthly basis with a cut off time at 5:30pm Moscow time on the last Tuesday on or before the 10th day of the month and are published in every Wednesday in Argus Caspian Markets.

Prices are assessed in Kazakh tenge per tonne and converted to dollars at the average rate of the Kazakhstan National Bank. Price assessments include VAT.

Crude supplied to the Atyrau refinery
Crude supplied to the Atyrau refinery on a dap Atyrau basis
Size: Minimum 1,000t
Timing: Delivery within 1-30 days

Crude supplied to the Pavlodar refinery
Crude supplied to the Pavlodar refinery on a dap Pavlodar basis
Size: Minimum 1,000t
Timing: Delivery 1-30 days ahead

Crude supplied to the Chimkent refinery
Crude supplied to the Chimkent refinery on a dap Chimkent basis
Size: Minimum 1,000t
Timing: Delivery 1-30 days ahead

Netback price assessments

Along with market assessments Argus also calculates comparable netback prices for various grades of crude and products. These are calculated by subtracting assessed transportation and associated costs from the market price. Netbacks do not include ballast, port demurrage, bank loan expenses or market structure. When assessing netbacks the following parameters are used:

Prices
Pricing data is based on daily assessments published in Argus Crude*,* Argus European Products*,* Argus US Products *or* Argus Asia-Pacific Products. The published methodologies for these reports are available at www.argusmedia.com.

There is no standard approach to calculating price differentials for crude exported from Kazakhstan. The discounts to relevant prices are agreed through negotiations between buyers and sellers based on an exporter's costs on a specific route.

According to common trading practices, Urals, Kumkol, CPC Blend, and BTC Blend crude prices are linked to North Sea Dated quotations through a differential reflecting differences in the quality and the market situation for various grades of crude.

When Kazakh crude is exported through the Russian pipeline system the grade delivered to Russian ports is Urals (Russian Export Blend).

Freight
Argus publishes daily prices on the international shipping spot market for crude and petroleum products in Argus Tanker Freight and cross-Caspian freight rates in Argus Caspian Markets. These price assessments reflect typical and repeatable freight rates discussed in the market.

Actual freight costs (the monetary value of payment for marine transportation per unit of cargo) for the same voyage may vary depending on the type of charter party, age and technical condition of the vessel, and other specifications.

For a detailed explanation of the methodology behind the international freight assessments see the Argus Tanker Freight methodology.

From 1 January 2008 charterers in the Baltic and North seas pay additional fees for operating in the sulphur emissions control area (SECA). The per-mile cost of the SECA charge is set every year and is published monthly in Argus Neftetransport.

Tanker freight rates are published for the following routes:

Dirty
- Novorossiysk-Mediterranean (140,000t)
- Black Sea- Mediterranean (135,000t)
- Black Sea- Mediterranean fuel oil (30,000t)
- Primorsk-UKC (30,000t)
- Cross Mediterranean (135,000t)
- Cross Mediterranean (80,000t)

Clean
- Black Sea- Mediterranean (30,000t)
- Baltic-UKC (30,000t)

Insurance
The insurance premium for a tanker cargo varies depending on age and technical features of the vessel, size and reputation of the exporter, and contract terms.

Demurrage
The rate of demurrage is agreed in negotiations between the charterer and the ship owner based on current market conditions and industry practices.

Demurrage costs in the Straits are assessed daily and multiplied by the number of days delay in both directions, north bound and south bound, above two days.

Independent inspection
The fees charged by independent laboratories for quality and quantity analysis for crude cargoes are assessed regularly according to the trading practices.

Losses
In accordance with international trading practices crude prices include losses in transit associated with shipping a cargo by sea.

Terminal costs
The cost of handling cargoes at sea and on-shore terminals is determined mostly by the commercial policies of owners or operators of transhipment facilities. Argus assesses the cost of transhipment based on data provided by terminal operators where it is available.

Transhipment rates at terminals of the CIS and the Baltic states are published monthly in Argus Neftetransport and Argus Caspian Transportation. Where official data are unavailable, transhipment cost assessments are made on the basis of recently obtained information received through a survey of market participants involved in transhipping operations such as shippers, port authorities, trading and freight-forwarding companies.

Inland transportation tariffs

Argus publishes inland transportation tariffs based on data received from pipeline operators, where available. Tariff rates and tariff policy analysis in countries of the former Soviet Union are published in Argus Neftetransport and Argus Caspian Transportation.

Where official data are unavailable transportation costs assessments are made on the basis of recently obtained information received through a survey of market participants involved in transhipping operations such as shippers, transportation and freight-forwarding companies.

The transit of Kazakh crude via the Russian pipeline system is regulated by an intergovernmental agreement signed in 2002. Pipeline tariffs are determined on the basis of the tariff policies of pipeline companies of the CIS states.

Inland transportation tariff rates are published for:

- Atyrau-Alashankou (total charges) tenge/t
- Tengiz-Novorossiysk (CPC) $/t
- Baku-Ceyhan (for shareholders) $/bl
- Baku-Ceyhan (for non-shareholders) $/bl
- Baku-Novorossiysk Rbs/t
- Baku-Supsa $/t
- Makhachkala-Novorossiysk Rbs/t

Trading margin

Usually in oil trading the value of the trader's commission is not disclosed. According to Argus estimates trading tanker cargoes is efficient if the associated margin makes from $0.20/bl to 1pc of the cargo value. This rate is implicitly integrated in contracts.

Operating margin

An exporter may incur additional costs in connection with the consolidation of a tanker cargo at a load port. If the exporter is not able to consolidate a cargo using his own resources he may sell the crude to an intermediary, which could act in the capacity of an operator for consolidation of volumes from various producers into the tanker cargo.

Products price assessments

Argus Caspian Markets publishes price assessments of various refined products markets in Kazakhstan, Azerbaijan, Armenia, Georgia, Turkmenistan, Uzbekistan, Kyrgyzstan and Afghanistan. Argus also calculates prices for products delivered from Russia to Kazakhstan by adding transportation costs to the respective prices at Russian refineries. These prices are published in the daily report *Argus Russian Motor Fuels*.

Argus publishes the following weekly snapshot prices in the international bulk spot market for petroleum products:

- Diesel French 10ppm cif NWE
- Diesel French 10ppm cif Med
- French heating oil 0.1pc cif Med
- French heating oil 0.1pc cif NWE
- Fuel oil 3.5pc cif Med
- Fuel oil 3.5pc cif NWE
- VGO cif Med 0.5pc
- VGO cif Med 2pc
- VGO fob Black Sea 0.5pc
- VGO fob Black Sea 2pc
- VGO 0.5pc cif NWE

For a detailed explanation of the methodology behind the international petroleum product assessments see the Argus European Products methodology.

Domestic products in Kazakhstan

Argus publishes weekly prices for gasoline, diesel, jet fuel, fuel oil and bitumen in the domestic market in Kazakhstan. Except for bitumen, prices are assessed, and published on Argus Direct and made available through Argus data feeds on Tuesday and are published each Wednesday in Argus Caspian Markets. Bitumen prices are published in Argus Caspian Markets each Wednesday.

The minimum cargo size is 60t, timing – 10-20 days ahead, basis fca at Pavlodar, Chimkent and Atyrau refineries with 100pc pre-payment. Prices are assessed and published in Kazakh tenge/t including VAT and excise and converted into $/t. Currency conversions are at the rate of the National Bank of Kazakhstan at the time of publication. When offer prices of product vary significantly between refiners and traders at the same location, Argus determines the most competitive price range. Some producers have limitations on fuel deliveries to certain regions.

Gasoline, diesel, jet and fuel oil

Prices are published for the following products from the named locations

Atyrau
- Gasoline Ai-92/93, Ai-95/96
- Jet/Kerosine
- Diesel summer, winter -15°C, -25°C, -38°C

Chymkent
- Gasoline Ai-92/93, Ai-95/96
- Jet/Kerosine
- Diesel summer, winter -15°C
- Fuel oil 3.5% M-100

Pavlodar
- Gasoline Ai-92/93, Ai-95/96
- Jet/Kerosine
- Diesel summer, winter
- Fuel oil 3.5% M-100

The quality of oil products generally meets Kazakh or producer standards (*see table below*). However, refineries may offer products of differing quality even within the same company. The market does not have a common price adjustment methodology based on product quality. If the quality of products supplied through a specific transaction (or when defining demand and supply levels), fails to match the quality listed in this methodology, the price differential is based on existing commercial practices.

Kazakhstan retail fuel market

Argus publishes prices for gasoline (Ai-92/93, Ai-95/96, Ai-98), diesel (summer and winter grades) and auto gas in the domestic retail market in Kazakhstan.

Published prices are a weekly average of prices posted by filling station operators. If for any reason one or more of the official sites of these companies is unavailable, Argus will confirm prices by phone, or visually at the filling station.

Prices are monitored between 9:00am and 10:00am Astana time each Tuesday. Average prices are calculated and published on Argus Direct on Tuesday and republished on Wednesday in the print edition of Argus Caspian Markets. If Tuesday is a holiday, Argus will be assessed on the next working day.

Argus also publishes retail and wholesale price caps for oil products which are set by government decree.

Prices are published in tenge/litre, tenge/t and $/litre, converted at the average weekly rate of the national Bank of Kazakhstan.

Filterability temperature for diesel fuel

- Summer: -4°C
- Winter: -35°C
- Autumn/spring: -15°C to -25°C

Bitumen

Argus publishes prices for paving grade bitumen delivered to the Kazakh domestic market. The minimum cargo size is 60t, timing – 10-20 days ahead, basis fca at Pavlodar, Chimkent and Aktau refineries and Almaty asphalt plant with 100pc prepayment. Information on deals, bids and offers is collected and prices are assessed on a monthly basis in March-November. Price assessments are published electronically on the last Tuesday on or before the 10th day of the month and are published every Wednesday in Argus Caspian Markets. Prices are published in Kazakh tenge/t and $/t. Currency conversions are at the rate of the National Bank of Kazakhstan at the time of publication.

Road construction and bitumen production are limited during the winter, and Argus does not assess bitumen prices in December-February.

Product quality standards in Kazakhstan

Refinery	Atyrau	Chymkent	Pavlodar
Mogas Ai-92/93	GOST 2084-77	TU 38.001165-2003	CT AO 39334881-001-2006
Mogas Ai-95/96	GOST 51105-97	TU 38.001165-2003	CT AO 39334881-001-2006
Diesel summer grade	GOST 305-82	GOST 305-82	GOST 305-82
Diesel winter grade	GOST 305-82	GOST 305-82	GOST 305-82
Jet fuel	GOST 10227-76	GOST 10227-76	GOST 10227-76*
Fuel Oil M100	GOST 10585-99	GOST 10585-99	GOST 10585-99

Sulphur content of Kazakh fuel oil

Refinery	Sulphur %
Atyrau	1.0
Chimkent	0.5
Pavlodar	2.0

Bunker fuel quality standards

Specifications	MGO		IFO-30	Winter-grade diesel
	Baku	Aktau	Baku	Aktau
Sulphur %	0.15	0.1	0.2	0.001
Viscosity cst	6	9	30	4

Bitumen quality standards in Kazakhstan

Product	Pavlodar	Almaty	Chimkent	Aktau
BND 70/100, BND 100/130	ST RK 1373-2013	GOST 22245-90	GOST 22245-90	ST RK 1373-2013

Bunker fuel in Caspian ports

Argus provides weekly price assessments for bunker fuels in Caspian ports of Baku (Azerbaijan) and Aktau (Kazakhstan), including low-sulphur fuel oil (IFO-30), low-viscosity marine gasoil (MGO) and winter-grade diesel. These prices are monitored every two weeks and published each Wednesday in Argus Caspian Markets.

The minimum cargo size is 50t, timing – 1-30 days ahead, basis fob Baku and fob Aktau with payment terms of maximum 30 days after. The values are presented in $/t.

Uzbekistan, Tajikistan, Kyrgyzstan products assessments

Uzbekistan

Argus publishes weekly prices for Ai-92 and Ai-95 gasoline, and summer diesel supplied to Uzbekistan excluding taxes and VAT.

Tajikistan

Argus publishes weekly prices for Ai-92 gasoline and summer diesel supplied to Tajikistan on a cpt Bekabad basis

Kyrgyzstan

Argus publishes weekly prices for and for Ai-92 and Ai-95 gasoline, and summer and winter diesel of at least Euro 4 quality supplied to Kyrgyzstan on a cpt Turksib basis.

Filterability temperature for diesel fuel

- Summer: -4°C
- Winter: -35°C
- Autumn/spring: -15°C

The minimum cargo size is 60t, timing – 1-30 days ahead. Information on deals, bids and offers is collected and prices are assessed on a weekly basis excluding taxes and fees. Prices are assessed, and published on Argus Direct and made available through Argus data feeds on Tuesday and are published in $/t every Wednesday in Argus Caspian Markets.

Afghanistan

Argus publishes weekly prices for Ai-92 gasoline and summer diesel supplied to the domestic market of Afghanistan from Afghan tank farms on an fca Hairatan and fca Akina basis. Prices include all domestic taxes and fees and are for trucks with a capacity of 12–35 tons. The minimum cargo size is 12t, for loading 5-10 days ahead.

Prices are published in US dollars per tonne. When offer prices vary significantly between refiners and traders at the same location, Argus determines the most competitive price range. Argus publishes prices for Ai-92 gasoline and diesel imported to Afghanistan and standardised to the Uzbek-Afghan and Turkmen-Afghan borders. The cpt Galaba and cpt Imamnazar indexes are calculated by deducting taxes and additional costs from the prices of Ai-92 gasoline and diesel fca Hairatan and fca Akin. Prices are published in US dollars per tonne.

Weekly prices in central Asia

Product	Grade	Basis	Country
Gasoline	Ai-95	cpt Lugovaya	Kyrgyzstan
Gasoline	Ai-95	cpt Turksib	Kyrgyzstan
Gasoline	Ai-92	fca Hairatan	Afghanistan
Gasoline	Ai-92	cpt Lugovaya	Kyrgyzstan
Gasoline	Ai-92	fca Akina	Afghanistan
Gasoline	Ai-92	cpt Bekabad	Tajikistan
Gasoline	Ai-92, Ai-95	cpt Turksib	Kyrgyzstan
Gasoline	Ai-92, Ai-95	cpt Sary-Agach	Uzbekistan
Gasoil	summer	cpt Lugovaya	Kyrgyzstan
Gasoil	summer	cpt Turksib	Kyrgyzstan
Gasoil	summer	fca Hairatan	Afghanistan
Gasoil	summer	cpt Bekabad	Tajikistan
Gasoil	summer	fca Akina	Afghanistan
Gasoil	summer	cpt Sary-Agach	Uzbekistan

Jet fuel into-plane prices (IPP)

Argus publishes prices for jet fuel at airports in Central Asia and the Caspian region for the previous month on an "into-plane" basis on a monthly basis.

Prices are calculated on the last Tuesday on or before 15th day of the month and are published on the following Wednesday.

To be considered for inclusion in the assessment, information must be received before 3pm Moscow time on the day of assessment. In the case of a public holiday on the day of assessment, prices are assessed and published on the following working day. Prices are published in $/t including all taxes.

Prices are published for the following airports or groups of airports:

Kazakhstan
- Astana
- Almaty
- Karaganda
- Aktobe

Uzbekistan
- Tashkent

Turkmenistan
- Ashgabat, Turkmenbashi

Kyrgyzstan
- Bishkek
- Tajikistan
- Dushanbe

Afghanistan
- Kabul, Herat, Kandahar, Mazar-I-Sharif

Azerbaijan
- Baku

Georgia
- Tbilisi, Kutaisi, Batumi

Armenia
- Yerevan

Gasoline, diesel and jet prices at the Russia-Kazakhstan border (dap)

Imported gasoline Ai-92, diesel and jet assessments at the Russia-Kazakhstan border are assessed and published weekly on Tuesdays on Argus Direct and published in the Argus Caspian Markets report on Wednesday. To be considered for inclusion in the assessment, information must be received before 5pm Moscow time on the day of assessment. In the case of a public holiday on the day of assessment, prices are assessed and published on the following working day.

Prices are published in $/t.

Specifications

Size: minimum 60t
Timing: delivery within 30 days
Delivery: by rail, tanker or truck for gasoline and jet and by rail, tanker, truck or pipeline for diesel
Basis: dap all Russia-Kazakhstan border crossings or Kazakh ports
Cold filter plugging point: summer – minus 4°C, winter – minus 35°C, autumn/spring minus 15°C to minus 25°C

Arctic diesel prices at the Russia-Kazakhstan border

Prices for imported PTF Arctic diesel on the Russian-Kazakhstan border are assessed and published on a monthly basis from October to February. Prices are assessed based on a survey of importers, wholesale consumers and other market participants by telephone and electronic means.

Prices are assessed as of the last Tuesday on or before the 10th day of the month and are published on Argus Direct on Tuesday and in Argus Caspian Markets the following day.

To be included in the assessment, information must be received by 5pm Moscow time on the day of assessment. If the assessment day falls on a holiday, prices will be assessed and published on the following working day. Prices are published in US dollars per tonne.

Specifications

Size: minimum 30t
Timing: delivery within 10-20 days
Delivery: by rail, tanker, truck or pipeline
Basis: dap all Russia-Kazakhstan border crossings or Kazakh ports
Cold filter plugging point: from -38°C

Kyrgyz and Tajik trucked fuel prices

Argus publishes weekly prices for truckloads (28-35t) of Ai-92 gasoline diesel fuel in Kyrgyzstan and Tajikistan. For each fuel, Argus publishes a range of average prices for loading at depots in Bishkek, Kant, Kara-Balta and Kaindy, Kyrgyzstan, as well as a range of average prices for loading at depots in Dushanbe, Khujand and Guliston, Tajikistan. Prices include taxes.

Posted prices

Argus publishes prices posetd by refiners for the Kara-Balta mini-refinery in Kyrgyzstan and the Omsk refinery in Russia (supplied to Central Asia). Prices are published in $/t. Prices for Kara-Balta include excise and other taxes payable in Kyrgyzstan.

Posted prices are published for:

Kara-Balta mini refinery for supply to Kyrgyzstan
- Ai-80 gasoline
- Ai-92 gasoline
- Summer diesel
- Type I heating fuel
- LPG

Omsk refinery fca Kombinatskya
- Ai-92 gasoline
- Ai-95 gasoline
- Diesel
- Winter diesel

Oil product export netbacks from Turkmenistan

Export parity indexes (netbacks) are calculated weekly using the following formula:

N = P - T - D

where
N = netback value
P = the price assessment for the oil product in a comparable target market (Mediterranean countries, Afghanistan, Ukraine)
T = transportation and associated costs (freight, railway tariffs, tankcar lease, transshipment and storage, independent inspection, losses, insurance, etc.)
D = charges (exchange and customs charges, certification fee)
Netbacks are published as a price range. All components of the calculation are published in US dollars per tonne and rounded to two decimal places. Formula components are as of the date of publication.

Argus assessments (P) used to calculate netbacks

Diesel
- for deliveries to the Mediterranean market (via Batumi, Novorossiysk): diesel French 10ppm fob west Mediterranean. See the Argus European Products methodology.
- for deliveries to the Ukrainian market (via Kherson/Nikolayev): diesel 10ppm cif Ukrainian ports. See the Argus Ukrainian and Baltic Oil Products methodology.
- for deliveries to Afghanistan: diesel fca Akina

Gasoline
- for deliveries to the Mediterranean market (via Batumi, Novorossiysk): 95R gasoline cif west Mediterranean. See the Argus European Products methodology.
- for deliveries to the market of Afghanistan: gasoline Ai-92 fca Akina

Fuel oil
- for deliveries to the Mediterranean market (through Kerch, Batumi, Novorossiysk): fuel oil 1pc S cif west Mediterranean. See the Argus European Products methodology.

Assessment of transportation costs (T)

Railway transportation

The calculation of railway tariffs for Russia and Turkmenistan is based on the tariff policies of these countries in effect on the date of publication.

- in Russia: for own or rented rolling stock
- in Turkmenistan: for the general tank car fleet

Argus uses the dedicated software “Rail-Tariff” to calculate railway tariffs

When calculating tariffs, the following assumptions are made:
- tank car axels: 4, load capacity of product tank car: 66t, average actual load of product tank car: 60t
- all tariffs are calculated excluding VAT except for tariffs for empty return of tank cars in Russia
- to calculate the cost of a laden voyage, export railway tariffs for the “shipper’s route” (fixed-route shipment) are used
- the tariff for empty return is calculated for one tank car (carload)
- tariffs include additional charges and the estimated cost of cargo protection
- when converting Russian tariffs from roubles to US dollars, Argus uses the rate of the Central Bank of the Russian Federation published on the date of calculation

Railway tariffs for transportation in Azerbaijan are calculated on the basis of information from the Coordinating Council of the Republic of Azerbaijan on Transit, as well as data on current discounts published in the Argus Caspian Transportation report.

To calculate transportation tariffs in Georgia, information from of the Georgian Railway as well as information on discounts and special tariffs received from cargo owners and Georgian sea terminals are used and published in the Argus Caspian Transportation report.

Tank car lease

Tank car lease rates are determined based on the load of the product tank car: 60t.

The calculation is based on the range of tank car lease rates and the estimated turnaround of the tank car on the route. The range of lease rates is determined monthly based on discussions with the largest owners/operators of rolling stock and their customers — oil and trading companies.

Tank car lease rates in Russia are published monthly in the Argus Neftetransport report. See the Argus Nefte Transport methodology.

Tank car lease rates in Azerbaijan are published twice a month in Argus Caspian Transportation.

Tank car lease rates in Turkmenistan are published twice a month in Argus Caspian Transportation.

To calculate the turnaround of the tank car on the route, the following basic values are used:

- speed of a laden product tank car: 200 km/day
- empty tank car return rate: 200 km/day
- total downtime for loading and discharging oil products, including downtime on the borders: 6 days

The range of fees for railcar delivery and forwarding at the departure station is determined by discussion with market participants.

Caspian Sea and inland waterways of Russia transport

Argus determines the range of market value of transportation through the Caspian Sea (including the subsequent transport of oil cargoes on Russian inland waterways connected to the Black Sea) in discussion with market participants. This range is published in the Argus Caspian Transportation report. See the Argus Caspian Transportation methodology.

Cargo dues and rate of call at Turkmenbashi

To determine the amount of cargo dues and rates of call at the port of Turkmenbashi, monitoring data published in Argus Caspian Transportation are used. See the Argus Caspian Transportation methodology.

The range of fees for freight forwarding and agency services at the port of Turkmenbashi is determined by discussion with market participants.

Port demurrage at Turkmenbashi

The range of demurrage costs at the port of Turkmenbashi is determined on the basis of daily demurrage rates for tankers of 3,000-5,000t and 7,000t dwt, as well as the number of days of tankers' idle time at the Turkmen port, as published in Argus Caspian Transportation. See the Argus Caspian Transportation methodology.

Transshipment at ports and oil terminals

To determine the cost of transshipment in ports and at the tank farm in Akina, Argus uses monitoring data published in the Argus Caspian Transportation and Argus Neftetransport reports. See the Argus Caspian Transportation and Argus Nefte Transport methodologies.

Road transportation via the Ymamnazar – Akina route

The calculation of netbacks uses data on the cost of road transportation published in Argus Caspian Transportation. See the Argus Caspian Transportation methodology.

Sea freight on the Black Sea-Mediterranean Sea ports route

Freight rates are based on those published in Argus Tanker Freight.

- Clean Black Sea-Mediterranean 30,000t

See the Argus Tanker Freight methodology.

Cargo insurance

The cost of cargo insurance is determined as a percentage of the price assessment for the oil product in the target market. The rate is determined by discussion with participants in the transportation process. On all routes, except for Turkmenbashi-Akina-Kabul, 0.02-0.05pc is used to calculate netbacks. On the route Turkmenbashi-Akina-Kabul, of 0.02pc is used.

Independent inspection

During transportation, it may be necessary to conduct one or more independent inspections of the quality and/or quantity of cargo. The rate is determined by discussion with participants in the transportation market and surveyors. Rates are published in US dollars per tonne and include inspection costs throughout the route.

Transportation losses

The range of transportation losses is determined by discussion with participants in the transportation process, as well as on the basis of surveyors' data. Losses are determined as a percentage of the price assessment for the product in the target market. When calculating netbacks, the following losses are taken into account:

Diesel and gasoline
- fob Turkmenbashi-Kherson/Nikolaev: 0.5-1.5pc
- fob Turkmenbashi-Baku-Batumi-Mediterranean countries: 2.5-3.5pc
- fob Turkmenbashi-Makhachkala-Novorossiysk-Mediterranean countries: 2.5-3.5pc
- fca Kenar-Aqina: 1-2pc

Fuel oil
- fob Turkmenbashi-Kerch-Mediterranean countries: 0.5-1.5pc
- fob Turkmenbashi-Makhachkala-Novorossiysk-Mediterranean countries: 0.5-2pc
- fob Turkmenbashi-Baku-Batumi-Mediterranean countries: 0.5-2pc

Forwarding and agent services

Argus reports fees related to forwarding and agent services in the port/railway car supply and forwarding services at the departure station.

Charges (D)

When calculating netbacks, the following charges are taken into account: exchange fee, customs duty and cargo certification fee. These fees are determined as a percentage of the exchange contract price.

Rates of charges used in the calculation:

- exchange fee: 0.4pc
- customs duty: 0.2pc
- cargo certification: 0.1pc