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ARGUS UKRAINIAN MOTOR FUELS

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The most up-to-date Argus Ukrainian Motor Fuels 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 Ukrainian motor fuels 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 judgement 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 judgement 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 judgement 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 judgement 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 judgement.

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 judgement 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

Ukrainian motor fuels prices are published in the Argus Ukrainian Motor Fuels 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 judgement 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 judgement
- 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 judgement for illiquid markets
- Editors are required to sign-off on all price assessments each day, thus ensuring the consistent application of judgement.

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.

Market overview

Ukraine produces and imports motor gasoline and diesel. Ukrainian refinery output is insufficient to satisfy domestic demand and the import share varies depending on market fundamentals. Gasoline consumption in Ukraine peaks in May–September, and diesel in April–September. During the cold season, November–March Ukrainian refineries produce winter-grade diesel. Winter and summer diesel grades overlap between seasons.

The refinery in Kremenchug and the Shebelinka gas processing plant are the main producers of motor fuels in Ukraine. Gasoline is imported from Belarus, Lithuania, Poland and countries in the Black Sea region, while diesel is bought from Belarus, Poland, Russia, Lithuania and countries in the Black Sea and Mediterranean regions.

Price reporting and analysis

Argus publishes price assessments for domestically produced and imported motor fuels in the Russian-language daily Argus Ukrainian Motor Fuels report. 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). The information on deals done, bids and offers is collected from traders, producers, wholesale consumers and other market participants by phone or electronic means of communication throughout the day. All data received are subject to detailed research and verification. Argus will contact and accept market data from all credible market sources including the front and back offices of market participants and brokers. Prices are assessed until 5:30pm Kiev time and the report is distributed after 6:00pm Kiev time.

Argus assesses spot and term contract prices separately.

Imported products prices on Ukrainian border

Argus publishes price assessments for motor gasoline and diesel.

General specifications

Delivery basis: cif or daf

100pc prepayment

Cif prices do not include port charges

Standard size: 500-2,500t for rail

4,000-10,000t for tanker cargoes

500-2,500t for pipeline

Unit: US dollars per tonne

Fuel quality

Gasoline A-95 and A-92

Gasoline A-95 and A-92 imported to the Ukrainian market complies with the Euro 5 standard for auto engines.

Diesel

Most diesel price assessments are for 10ppm diesel, which complies with the Euro 5 standard. Ukraine also imports gasoil diesel 50ppm from Novopolotsk refinery (Belarus).

Differential pricing

Imported products are usually priced using formulas linked to international benchmarks. Argus discovers pricing differentials over the course of the trading day, and applies them to latest available international benchmarks published in the previous day's Argus European Products report.

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

Assessments based on long-term contracts

Gasoline A-95 Lithuanian daf Belarus/Ukraine (term)

Producer: Mazeikiai refinery, Lithuania

Delivery: daf Belarus-Ukraine border

Imported products assessments				
Product origin	Basis	Gasoline A-95	Gasoline A-92	Diesel
Belarus	daf Belarus/Ukraine	X	X	X
Lithuania	daf Belarus/Ukraine	X	–	X
Poland	daf Poland/Ukraine	X	–	X
Black Sea and Mediterranean basin countries	cif Ukrainian ports	X	–	X
Russia	daf Russia/Ukraine	–	–	X
Russia	ddu Novograd-Volynsky	–	–	X

Assessment period: Three days before the shipment date

Prices are assessed by adding a differential to an average of the Argus gasoline 95r 10ppm NWE cif price assessment as published in Argus European Products over the last three working days. The differential is assessed based on trades, bids and offers.

Gasoline A-95 Polish daf Poland/Ukraine (term)

Producer: Plotsk refinery, Poland

Delivery: daf Poland-Ukraine border

Assessment period: Five days before the shipment date

Prices are assessed by adding a differential to an average of the Argus gasoline 95r 10ppm NWE cif price assessment as published in Argus European Products over the last five working days. The differential is assessed based on trades, bids and offers.

Gasoline A-95 Belarusian daf Belarus/Ukraine (term)

Producer: Mozyr refinery

Delivery: daf Belarus-Ukraine border

Assessment period: the month to date

Prices are assessed by adding a differential to an average of the Argus Eurobob oxy NWE barge price assessment as published in Argus European Products since the beginning of the calendar month. The differential is assessed based on trades, bids and offers.

Gasoline A-92 Belarusian daf Belarus/Ukraine (term)

Producer: Mozyr refinery

Delivery: daf Belarus-Ukraine border

Assessment period: the month to date

Prices are assessed by adding a differential to an average of the Argus Eurobob oxy northwest Europe barge gasoline price assessment as published in Argus European Products since the beginning of the calendar month. The differential is assessed based on trades, bids and offers.

Diesel 50ppm Belarusian daf Belarus/Ukraine (term)

Producer: Novopolotsk refinery

Delivery: daf Belarus-Ukraine border

Includes trade on the Electronic Trading System of Belarus' state-owned refining concern Belneftekhim, and trade done outside of the Electronic Trading System

Assessment period: the month to date

Prices are assessed by adding a differential to an average of the Argus diesel French 10ppm cif northwest Europe cargoes and diesel German 10ppm northwest Europe barges price assessments as published in Argus European Products since the beginning of the calendar month. The differential is assessed based on trades, bids and offers.

Diesel 10 ppm Belarusian daf Belarus/Ukraine (term)

Producer: Mozyr and Novopolotsk refineries

Delivery: daf Belarus-Ukraine border

Includes trade on the Electronic Trading System of Belarus' state-owned refining concern Belneftekhim, and trade done outside of the Electronic Trading System

Assessment period: the month to date

Prices are assessed by adding a differential to an average of the average of the Argus diesel French 10ppm cif northwest Europe cargoes and diesel German 10ppm northwest Europe barges price assessments as published in Argus European Products since the beginning of the calendar month. The differential is assessed based on trades, bids and offers.

Diesel 10ppm Lithuanian daf Belarus/Ukraine (term)

Producer: Mazeikiai refinery

Delivery: daf Belarus-Ukraine border

Assessment period: three days before the loading date

Prices are assessed by adding a differential to an average of the

Domestic market motor fuels prices						
Refinery/terminal	Location	Basis	Gasoline A-95	Gasoline A-92	Summer diesel	Winter diesel
Kremenchug refinery	Kagamlykская	fca	X	X	X	X
Novopolotsk refinery/Korosten station*	Korosten /Shchors/Sarny and other	fca	–	–	X	X
Shebelinka gas processing plant	Shebelinka	fca	–	X	X	X
Mozyr and Novopolotsk refineries/Korosten station	Korosten /Shchors/Sarny and other	fca	X	X	X	X
Black Sea and Mediterranean refineries/import terminals	Ilychevsk-Paromnaya/Odessa-Peresyp/Beregovaya/Kherson/Nikolayev-Gruzovoy/Berdyansk	fca	X	X	X	X
Russian refineries	Kupyanski/Osnova and other	fca	–	–	X	X
Russian refineries/Novograd-Volynsky terminal	Novograd-Volynsky	fca	–	–	X	–
Refineries in Lithuania, Poland, Romania (by rail), Hungary	Korosten, Sarny, Udritsk, Shchors, Mostiska exportnaya, Mostiska-2, Vadul-Siret, Mukachevo, Batevo, etc	fca	X	–	X	X

* up to 50ppm

diesel French 10ppm cif northwest Europe cargoes price assessment as published in Argus European Products over the last three working days. The differential is assessed based on trades, bids and offers.

Diesel 10ppm Polish daf Poland/Ukraine (term)

Producer: Plotsk refinery, Poland

Delivery: daf Poland-Ukraine border

Assessment period: five days before the shipment date

Prices are assessed by adding a differential to an average of the diesel French 10ppm cif northwest Europe cargoes price assessment as published in Argus European Products over the last five working days. The differential is assessed based on trades, bids and offers.

Spot assessments

Gasoline A-95 daf Belarus/Ukraine

Delivery: daf Belarus-Ukraine border

Includes trade on the Electronic Trading System of Belarus' state-owned refining concern Belneftekhim, and trade done outside of the Electronic Trading System.

Prices are assessed by adding a differential to an average of the Argus Eurobob oxy NWE barge price assessment as published in Argus European Products since the beginning of the calendar month. The differential is assessed based on trades, bids and offers.

Gasoline A-92 daf Belarus/Ukraine

Delivery: daf Belarus-Ukraine border

Includes trade on the Electronic Trading System of Belarus' state-owned refining concern Belneftekhim, and trade done outside of the Electronic Trading System.

Prices are assessed by adding a differential to an average of the Argus Eurobob oxy NWE barge price assessment as published in Argus European Products since the beginning of the calendar month. The differential is assessed based on trades, bids and offers.

Diesel 10ppm Belarusian daf Belarus/Ukraine

Producer: Mozyr and Novopolotsk refineries

Delivery: daf Belarus-Ukraine border

Includes trade on the Electronic Trading System of Belarus' state-owned refining concern Belneftekhim, and trade done outside of the Electronic Trading System.

Prices are assessed by adding a differential to an average of the diesel French 10ppm cif northwest Europe cargoes price assessment and diesel 10ppm German Rotterdam fob barge as published in Argus European Products since the beginning of the calendar month. The differential is assessed based on trades, bids and offers.

Diesel 10ppm Russian daf Russia/Ukraine

Russian diesel supplied by railway.

Prices are assessed by adding a differential to an average of the diesel French 10ppm fob west Mediterranean barges price assessment as published in Argus European Products since the beginning of the calendar month. The differential is assessed based on trades, bids and offers.

Diesel 10ppm ddu Novograd-Volynsky

Russian diesel ddu, supplied by pipeline.

Prices are assessed by adding a differential to an average of the diesel French 10ppm fob west Mediterranean barges price assessment as published in Argus European Products since the beginning of the calendar month. The differential is assessed based on trades, bids and offers.

Diesel 10ppm cif Ukrainian ports

Delivery: cif Ukrainian ports

Assessment period: three days before the shipment date

Specification: Diesel complies with the Euro 5 auto engine standard, with base density units 835-840

Prices are assessed by adding a differential to an average of the Argus diesel French 10ppm west Mediterranean fob price assessment as published in Argus European Products over the last three working days. The differential is assessed based on trades, bids and offers.

Differentials to European price assessments

In addition to outright price assessments, Argus publishes price differentials to European benchmarks.

As differentials to gasoline Eurobob oxy northwest Europe barges

- Gasoline A-95 Lithuanian daf Belarus/Ukraine (term)
- Gasoline A-95 Polish daf Poland/Ukraine (term)
- Gasoline A-95 Belarusian daf Belarus/Ukraine (spot and term)
- Gasoline A-92 Belarusian daf Belarus/Ukraine (spot and term)

As a differential to the mean of diesel French 10ppm cif northwest Europe cargoes and diesel German 10ppm northwest Europe barges

- Diesel 50ppm Belarusian daf Belarus/Ukraine (term)
- Diesel 10ppm Belarusian daf Belarus/Ukraine (spot and term)

As a differential to diesel French 10ppm cif northwest Europe cargoes

- Diesel 10ppm Polish daf Poland/Ukraine (term)
- Diesel 10ppm Lithuanian daf Belarus/Ukraine (term)

As a differential to diesel French 10ppm fob west Mediterranean barges

- Diesel 10ppm Russian daf Russia/Ukraine
- Diesel 10ppm Russian ddu Novograd-Volynsky
- Diesel 10ppm cif Ukrainian ports

Domestic market prices

General specifications

Delivery: within 1-15 days, basis fca railway station

100pc prepayment

Cargo size: 60-600t

Unit: hryvnas per tonne

If there is more than one offer from the same refinery, the assessment is of the lowest price available for the maximum number of buyers.

Assessments are published as high and low prices, within which trades could have occurred.

Prices will not be published when sufficient information is unavailable.

Fuel quality

Ukrainian gasoline quality usually complies with DSTU 4839:2007 standard (see p6) and DSTU 7687:2015, and diesel with DSTU 3868:99, DSTU4840:2007 standards (see pp7-8) and DSTU 7688:2015.

Trade in non-standard product will be taken into account in the assessment based on the market's valuation of the trade relative to the standard product.

Domestic price assessments

Gasoline and diesel fuel quality differs substantially depending on delivery basis. Argus publishes prices for the following product grades:

Gasoline fca Kagamlykskaya (Kremenchug refinery)

Gasoline A-95 and Gasoline A-92, which comply with the Euro 4 standard for auto engines.

Gasoline A-95 fca Korosten (Euro 5)

Producers: Belarusian refineries

Gasoline A-95 which complies with Euro 5 standard for auto engines.

Gasoline A-92 fca Korosten (Euro 5)

Producers: Belarusian refineries

Gasoline A-92, which complies with the Euro 5 standard for auto engines.

Gasoline A-92 fca Shebelinka (Shebelinka gas processing plant)

Gasoline A-92, which complies with the Euro 5 and Euro 4 standards for auto engines

Gasoline A-95 fca North-West Ukraine (Euro 5)

Producers: Polish, Lithuanian, Hungarian and Romanian (supplied by railway) refineries

Gasoline A-95, which complies with the Euro 5 standard for auto engines.

Diesel fca North-West Ukraine (up to 10ppm)

Producers: Polish, Lithuanian, Hungarian and Romanian (supplied by railway) refineries

Diesel fca Kagamlykskaya (Kremenchug refinery)

Diesel fca Shebelinka (Shebelinka gas processing plant)

Diesel fca Novograd-Volynsky (up to 10ppm)

Producers: Russian refineries

Diesel fca Korosten (up to 10ppm)

Producers: Mozyr and Novopolotsk refineries

Diesel fca Korosten (up to 50ppm)

Producer: Novopolotsk refinery

Diesel fca Kharkov (up to 10ppm)

Producers: Russian refineries

Diesel fca Ukrainian ports (up to 10ppm)

Producers: Mediterranean and Black Sea countries refineries

Netback prices

In addition to domestic and imported cargo prices, Argus calculates netback price indexes for diesel and gasoline exports from Russian and Belarusian refineries towards Ukraine and northwest Europe (through Ventspils).

The methodologies for European products and freight rates assessments are available at www.argusmedia.com

Netback calculation

Netbacks for the northwest Europe market are calculated daily according to the formula:

$$N = P - D - S$$

Where

N = netback index

P = price assessment for crude in northwest Europe

F = cost of seaborne transportation (including the cost of sea transportation for 30,000t clean product tankers on the Ventspils-Rotterdam route, cargo insurance and additional charges excluding transit).

Netbacks for the Ukraine market are calculated daily according to the formula:

$$N = P - T - D - S$$

Where

N – netback index

P – oil product quotation in Ukraine

T – Ukrainian taxes (VAT, excise tax and ecological tax) D – export duty

S – cost of loading, storage and transportation of oil product, including transit

All components of the formula are prices and rates effective on the date of the base assessment. When calculating the netback index for all oil products, the export duty for the current month is used.

Cost of transportation calculation

Railways

The railway tariff calculation is based on the tariff policy of the CIS and Baltic countries effective on the date of publication for net tonnage. Argus uses specialised software for tariff calculations, such as Polyus and Rail-Tarif.

The following assumptions are used for tariff calculations:

- oil product tank car load – 60t;
- speed of loaded tankcar – 550 km/d for oil products;

- speed of empty rail tankcar return – 330 km/d;
- delays during tankcar loading and discharge for oil
- products – four days;
- delay on each border station – one day.

Loading at port terminals

The information on loading prices is collected from terminal operators and cargo owners. The costs of loading operations are assessed in the January and July editions of Argus Neftetransport. Loading prices include the railway or pipeline transit tariff. Argus assesses the cost of diesel loading from terminal operators and cargo owners as well. The prices are renewed in January.

Foreign exchange

For netback calculations for supplies to Ukraine, Argus uses the Ukrainian hryvna to euro rate provided by the National Bank of Ukraine, and the Ukrainian hryvna to US dollar rate provided by Ukrdealing, as well as the Russian rouble rate provided by the Central Bank of Russia. For euro and US dollar rates, Argus uses the market rate provided by Interactive Data for 6:00pm London time.

International market prices

International prices for gasoline and diesel are published in the Argus European Products daily report. Please see the [Argus European Products methodology](#).

Netback calculation components							
Product	Price assesment	Freight	Additional costs	Trans-shipment	Export duty	Tariff outside the country of origin	Tariff in the country of origin
10ppm diesel							
Northwest Europe (from Belarus)	Diesel French 10ppm cif NWE	Ventspils-Rotterdam (30,000t)	Insurance, Rotterdam port charges	Ventspils	Current month	-	Railway
Northwest Europe (from Russia)	Diesel French 10ppm cif NWE	Ventspils-Rotterdam (30,000t)	Insurance, Rotterdam port charges	Ventspils	Current month	Belarus, Lithuania	Pipeline
Ukraine (from Belarus)	Diesel summer/winter 10ppm fca Korosten	-	-	-	Current month	Ukraine	Railway
Ukraine (from Russia)	Diesel 10ppm fca Novograd-Volynsky	-	-	-	Current month	Belarus, Ukraine	Pipeline
Gasoline 92 Ron							
Northwest Europe (from Belarus)	Gasoline 91R cif NWE	Ventspils-Rotterdam (30,000t)	Insurance, Rotterdam port charges	Ventspils	Current month	-	Railway
Ukraine (from Belarus)	Gasoline A-92 fca Korosten	-	-	-	Current month	Ukraine	Railway
Gasoline 95 Ron							
Northwest Europe (from Belarus)	Gasoline 95R cif NWE	Ventspils-Rotterdam (30,000t)	Insurance, Rotterdam port charges	Ventspils	Current month	-	Railway
Ukraine (from Belarus)	Gasoline A-95 fca Korosten	-	-	-	Current month	Ukraine	Railway

Physical, chemical and performance indicators of motor gasoline (Ukrainian national standardisation system 4839-2007)				
Indicator	Values for the following grades			Inspection method
	A-92-Euro	A-95-Euro	A-98-Euro	
1. Antiknock value:				
- research octane number, min.	92.0	95.0	98.0	according to GOST 8226 or EN ISO 5164 [1] or ASTM D 2699 [2]
- motor octane number, min.	82.5	85.0	88.0	according to GOST 511 or EN ISO 5163 [3] or ASTM D 2700 [4]
2. Lead concentration, mg/dm ³ , max	5	5	5	according to Ukrainian national standardization system EN 237, or GOST 28828, or EN 237
3. Density at 15 C, kg/m ³ , within	720-775	720-775	720-775	according to Ukrainian national standardization system GOST 31072 or ASTM D 1298 [6] or EN ISO 3675 [7] or EN ISO 12185 [8] or ASTM D 4052 [9]
4. Sulphur content, mg/kg, max				
type I	10	10	10	according to Ukrainian national standardization system ISO 20846 or EN ISO 20846 [10] or EN ISO 20884 [11]
type II	50	50	50	according to Ukrainian national standardization system ISO 20846 or EN ISO 20847 or EN ISO 20846 [10] or EN ISO 20847 [12] or EN ISO 20884 [11]
5. Oxidation stability (induction period), min., not less than	360	360	360	according to GOST 4039 or ASTM D 525 [13] or ASTM D 873 [14] or EN ISO 7536 [15]
6. Existent gum concentration, mg/100 cm ³ max	5	5	5	according to Ukrainian national standardization system GOST 1567 or ASTM D 381 [16] or EN ISO 6246 [17]
7. Copper plate test	OK	OK	OK	according to GOST 6321
or neutralisation value	1	1	1	
(3 hours ± 5 min) at				according to GOST 6321 or EN ISO 2160 [18] or ASTM D 130 [19]
50 C, clas.max				
8. Appearance	transparent and clear, without suspended solids and water	transparent and clear, without suspended solids and water	transparent and clear, without suspended solids and water	Visual inspection according to 9.3
9. Carbohydrate volume ratio				according to Ukrainian national standardization system EN 14517 or GOST 29040 or ASTM D 1319 [20] or ASTM D 5134 [21] or ASTM D 5580 [22] or ASTM D 6729 [23] or EN 14517 [24]
% max				
- olefine	18	18	18	
- aromatic	35	35	35	
10. Benzene volume ratio, %	1	1	1	according to Ukrainian national standardization system 4019 or Ukrainian national standardization system EN 238 or Ukrainian national standardization system EN 12177 or Ukrainian national standardization system EN 14517 or GOST 29040 or SOUMPE 23.2.004 [25] or ASTM D 5580 [22] or EN 238 [26] or EN 12177 [27] or EN 14517 [24]
max				
11. Oxygen weight content, %, max	2.7	2.7	2.7	according to Ukrainian national standardization system EN 13132 or Ukrainian national standardization system EN 1601 or EN 1601 [28] or EN 13132 [29] or ASTM D 5845 [30]
12. Volume ratio of organic oxygen-containing compounds				
% max				
- methanol	3	3	3	according to Ukrainian national standardization system EN 1601 or Ukrainian national standardization system EN 13132 or ASTM D 4815 [31] or ASTM D 5845 [30] or EN 1601 [28] or EN 13132 [29]
- ethyl alcohol	5.0	5.0	5.0	
- isopropyl alcohol	10	10	10	
- isobutyl alcohol	10	10	10	
- tert-butyl alcohol	7	7	7	
- simple ethers	15	15	15	
- other organic oxygen-containing compounds with max. end boiling point 210 C	10	10	10	
[1] Inspection techniques referred to in this standard must contain accuracy requirements, otherwise EN ISO 4259 [32] methodologies are used.				
[2] 0.2 correction factor must be used for final calculations prior to data registration according to the requirements of EU Directive 98/70/EC [33], including 2003/17/EC [34] amendment				
[3] Reference method (if disputable) with factor 3 - EN ISO 3675 [7]				
[4] Reference method (if disputable) with factor 9 - ASTM D 1319 [20]				
[5] Reference method (if disputable) with factor 10 - EN 12177 [27]				
[6] Reference method (if disputable) with factor 11, 12 - EN 1601 [28]				
[7] Stabilizing agent added				
[8] Stabilizing agent added if necessary				
Reference method if products are supplied to the domestic market.				

Physical, chemical and performance indicators of gasoil (DSTU 4840-2007 standard)		
Indicator	Value	Inspection method
1. Octane number, not less than	51	according to GOST 3122 or ASTM D 613 [1] or EN ISO 5165 [2]
2. Octane index, not less than	46	according to GOST 27768, Ukrainian national standardization system ISO 4264 or ASTM D 4737 [3] or EN ISO 4264 [4] and 9.7
3. Density at 15 C, kg/m ³ within	820-845	according to Ukrainian national standardization system GOST 31072, or ASTM D 1298 [5] or EN ISO 3675 [6] or EN ISO 12185 [7] or ASTM D 4052 [8]
4. Weight percent of polycyclic aromatic hydrocarbons, % max	11	according to Ukrainian national standardization system EN 12916 or EN 12916
5. Sulphur content, mg/kg, max		
type I	10	according to Ukrainian national standardization system ISO 20846, or EN ISO 20846 [10] or EN ISO 20884 [11]
type II	50	according to Ukrainian national standardization system ISO 20846, or Ukrainian national standardization system ISO 20847 or EN ISO 20846 [10] or EN ISO 20847 [12] or EN ISO 20884 [11]
6. Flammability point in closed cup, C, at least	55	according to Ukrainian national standardization system ISO 2719, or GOST 6356 or ASTM D 93 [13] or EN ISO 2719 [14]
7. Coking ability of 10% residue, %, (wt), max	0.30	according to GOST 19932, or GOST 8852 or ASTM D 189 [15] or ASTM D 524 [16] or EN ISO 10370 [17]
8. Ash, % (wt.), max	0,01	according to GOST 1461, or ASTM D 482 [18] or EN ISO 6245 [19]
9. Water content	нет	according to GOST 2477
or water content, mg/kg max	200	according to EN ISO 12937 [20]
10. Suspended solids	нет	according to GOST 6370
or residue, mg/kg, max	24	according to EN 12662 [21]
11. Copper plate test	OK	according to GOST 6321
or neutralisation value 3 hours +_ 5 min at 50C, class, max	1	according to GOST 6321, or EN ISO 2160 [22] or ASTM D 130 [23]
12. Oxidation stability, g/m ³ , max	25	according to ASTM D 2274 [24] or EN ISO 12205 [25]
13. Lubrication capacity: wear scar diameter at 60 C, micron, max	460	according to EN ISO 12156-1 [26] or Ukrainian national standardization system ISO 12156-1
14. Kinematic viscosity at 40 C, mm ² /s, within	2.00-4.50	according to Ukrainian national standardization system GOST 33, or ASTM D 445 [27] or EN ISO 3104 [28]
15. Fractional composition:		according to GOST 2177 (method A) or
at 250 C	65	Ukrainian national standardization system ISO 3924 or ASTM D 86 [29] or EN ISO 3405 [30]
vaporizes, % (vol.) max		
at 350 C	85	
vaporizes, % (vol.) not less than		
95% (vol.) vaporizes at, °C, not higher than	360	
16. Volume ratio of methyl ethers of fatty acids % max	5	according to EN 14078 [31]

Reference method if products are supplied to the domestic market.

Physical, chemical and performance indicators of gasoil (DSTU 3868-99 standard)			
indicator	UOM	Summer grade	Winter grade
Cetane number, min.		45	45
Distillation:			
- 50% yield, max.	°C	280	280
- 96% yield, max.	°C	370	370
Kinematic viscosity at 20°C	mm ² /s	3.0-6.0	1.8-6.0
Pour point, max.	°C	-10	-25
Closed cup flash point, min.			
- for diesel engines of locomotives, vessels and gas turbines	°C	62	40
- for general purpose diesel engines	°C	40	35
Sulphur content, max.			
- type I	%	0.05	0.05
- type II	%	0.1	0.1
- type III	%	0.2	0.2
- type VI	%	0.5	0.5
Mercaptan sulphur content, max.	%	0.01	0.01
Hydrogen sulphide content		none	
Copper strip test		OK	
Existent gum concentration, max.	mg/100 cm ³	40	30
Acidity, max.	mg KOH/100 cm ³	5	5
Iodine value, max.	g/100g	6	6
Ash, max.	%	0.01	0.01
Coking ability of 10% residue, max.	%	0.3	0.3
Filtration coefficient, max.		3	3
Suspended solids		none	
Water content		none	
Density at 20°C, max.	kg/m ³	860	840
Cold filter plugging point, max.	deg.C	-5	-15