METHODOLOGY AND SPECIFICATIONS GUIDE

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ARGUS DRY FREIGHT

Contents:

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The most up-to-date Argus Dry Freight 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 freight 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 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

Freight rates are published in the Argus Dry Freight 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 Dry Freight is a daily market report that publishes prices and market commentary on the international shipping spot market for coal, petroleum coke, iron ore and fertilizers.

Assessments are of typical and repeatable freight rates discussed in the market. The assessed prices are based on prices from the open spot market whenever possible. Argus Dry Freight assessments are of the prices at which vessels have been fixed and could be fixed. A fixture does not need to be concluded with subjects lifted in order for a rate to be taken into account when making an assessment. Offers of and bids for tonnage and discussed market levels will also be considered for inclusion in the assessment if deemed to be representative of an achievable market rate.

Argus assessments are of the prevailing market rate within the parameters defined in this document.

Rates are based on fixtures and market discussion for forward periods specified below. Argus takes into account liquidity outside this period and market structure.

Argus does not independently calculate or include an allowance for low-sulphur fuel costs within the Baltic and North Sea, North America and Caribbean Emissions Control Areas (ECAs). If the market in a given sector evolves to incorporate an allowance for increased fuel costs within the ECA as a convention, Argus will exercise its discretion in assessing the prevailing spot price.

Argus market specialists conduct comprehensive daily surveys of key industry participants to collect trade information and gauge prevailing market sentiment. Argus price assessments for Argus Dry Freight include market information gathered on fixtures and daily bid/ask spreads for each route under standardised specifications and under the general terms and conditions employed for the standard contracts in common use.

The market surveys are balanced in their approach and are conducted by well-trained specialists who are part of a dedicated team responsible for the Argus Dry Freight report.

The Argus methodology relies on a common sense approach and informed analysis of all market data. The market surveys involve more than 30 market participants contacted by telephone or electronically. Market participants each day include ship owners, charterers and ship brokers. The information is verified and analysed. The approach is methodical and standardised and the assessments are tested against the views of other market participants. Argus Dry Freight does not use the Baltic Exchange for its freight assessments.

Factors including but not limited to vessel age (often from 15 years and older for certain vessel classes and in certain markets), the last cargo carried, an absence of certifications, recent dry docking, non-standard cargoes and positioning considerations may affect the agreed rate. Argus will, where possible, remove discounts or premiums from rates considered for inclusion in an assessment, following discussion with the market.

Information from the survey is verified as best possible and archived in databases.

Assessments are of prevailing market levels at the end of the trading day or week as specified in the tables below.

Regional freight data will become available at the close of business in Asia, Europe-Africa, and the Americas.

Dry bulk

Argus Dry Freight includes freight rates for the main coal, iron ore, petroleum coke and grain trading routes.

Unless specified, Argus dry-bulk freight assessments are for fixtures contracted on the day of publication for timing over the next 60 days. Petroleum coke and grains rates are for 10-30 days from the day of publication See the complete list of assessed dry bulk freight rates and their specifications below. All dry bulk freight assessment are of contracts that include +/-10pc cargo size flexibility.

Freight rates are assessed as a result of communication with leading shipping brokers and international commodity traders. Rates may also be calculated according to reported differentials from fixtures on other routes. Rates are assessed and published in $/t. Information in other units and currencies, and day and voyage rates may also be considered for inclusion in assessments.

Time and tonnage

Market information is routinely received in $/d and is converted into $/t terms for use in the assessment process based on assumptions about vessel and voyage characteristics including fuel consumption, port fees, load and discharge rates, turn time and commission.

The same general calculation and assumptions are used in the publication of time charter-equivalent rates based on $/t assessments (see below).

In addition to those specified below, Argus also assumes standard sea margins, broker commissions, bunkering charges per bunkering port visit, time spent in port for loading, unloading and bunkering, and other costs.

Review of assumptions

All assumptions are under continual review and are updated at least once a year.

Calculation

All converted rates use the same generalised formula: ($/day) = (Voyage rate ($/t) x Cargo size (t) - Costs ($))/Voyage duration

Commission

5pc total commission is assumed. Market information involving a different commission structure is normalised to 5pc.

Fuel

Vessels are assumed to burn 0.5pc sulphur fuel oil. While in the US and European sulphur emissions control areas (SECAs) and in ports in those regions, vessels are assumed to consume 0.1pc MGO.

Fuel prices are the latest Argus assessments available at the time of publication. See the Argus Marine Fuels methodology for more information about Argus bunker fuel price assessments.

Cargo size

Calculations assume cargo size to be the maximum possible given draught restriction, cargo-specific and other factors as determined in regular communication with the market.

Routing

Unless noted, all routes assume avoidance of the Suez and Panama canals.

Panama

For transits through the Panama Canal, Argus accounts for associated tolls, draught restrictions, and an average of the waiting times for the most recent five publication days. See the Argus Tanker Freight methodology for more information on Panama Canal wait time assessments.

Lowest-cost routing

For some voyages, Argus calculates freight rates using the lowest-cost of several possible routes, in line with market practice.

Lowest of Panama Canal, Suez Canal and Cape of Good Hope

- US east coast-Japan 75kt coal
- Houston-Qingdao 65kt grains
- US Gulf coast-China 50kt petroleum coke

Lowest of Suez Canal and Cape of Good Hope
- US east coast-east coast India 75kt coal
- US Gulf coast-east coast India 50kt coke
- US Gulf coast-west coast India 50kt coke

Vessel assumptions						
Term	Capesize	Panamax	Panamax (Kamsarmax)	Supramax	Handysize (38k dwt)	Handysize (25k dwt)
Deadweight tonnage	180,000dwt	77,000dwt	82,500dwt	58,000dwt	38,000dwt	25,000dwt
Max draught	18.2m	13m	14.43m	12.8m	10.5m	9.8m
Constants (weight of crew, stores, etc)	3,500t	1,500t	1,500t	1,000t	1,000t	1,000t
Fuel consumption (Ballast)	43t/d	25t/d	23t/d	23t/d	17t/d	16t/d
Fuel consumption (Laden)	43t/d	26t/d	22t/d	24t/d	18t/d	16t/d
Fuel consumption (In port)	5t/d	3.5t/d	3.5t/d	3.5t/d	3.5t/d	3.5t/d
Ballast speed	13 knots	12.5 knots	12.5 knots	12.5 knots	12 knots	12 knots
Laden speed	12 knots	11.5 knots	11.5 knots	12 knots	12 knots	12 knots

Note: except where noted, Panamax rates assume Kamsarmax vessels

Port assumptions

Capesize

Loading port	Cost	Load rate (t/day)	Turn time (hours)
Hampton Roads	$89,000	25,000	12
Gladstone	$125,000	40,000	12
Hay Point	$110,000	45,000	12
Newcastle	$130,000	40,000	12
Tubarao	$75,000	60,000	6
Puerto Bolivar	$100,000	50,000	12
Richards Bay	$60,000	50,000	18
Saldanha Bay	$60,000	90,000	18
Port Hedland	$150,000	80,000	6

Receiving port	Cost	Unload rate (t/day)	Turn time (hours)
Qingdao	$120,000	30,000	24
Fangcheng	$120,000	30,000	24
Zhoushan	$120,000	30,000	24
Rotterdam	$150,000	30,000	12
Krishnapatnam	$365,000	20,000	24
Kandla (anchorage)	$65,000	18,000	24

Panamax

Loading port	Cost	Load rate (t/day)	Turn time (hours)
Hampton Roads	$89,000	25,000	12
Mobile	$70,000	20,000	12
Westshore	$70,000	35,000	12
Houston	$88,000	25,000	12
Long Beach	$70,000	18,000	24
Kalama	$330,000	10,000	12
Vancouver	$80,000	15,000	12
Taboneo	$10,000	10,000	12
Tanjung Bara	$55,000	40,000	12
Newcastle	$75,000	40,000	12
Gladstone	$100,000	35,000	12
Hay Point	$100,000	35,000	12
Santos	$60,000	8,000	12
Puerto Bolivar	$55,000	25,000	12

Receiving port	Cost	Unload rate (t/day)	Turn time (hours)
Kandla	$122,000	15,000	12
Kashima (coal)	$110,000	25,000	12
Kashima (pet coke)	$110,000	10,000	24
Qingdao	$60,000	8,000	12
Oita	$110,000	25,000	12
Fangcheng	$50,000	15,000	24
Guangzhou	$60,000	15,000	24
Pohang	$35,000	25,000	12
Yosu	$30,000	25,000	12
Gangavaram	$145,000	40,000	12
Paradip	$61,000	10,000	12
Krishnapatnam	$111,000	15,000	12
Rotterdam	$75,000	25,000	12

Supramax

Loading port	Cost	Load rate (t/day)	Turn time (hours)
Port Arthur	$88,000	18,000	24
Puerto Jose	$89,000	8,000	24
Long Beach	$70,000	18,000	24
Jubail	$60,000	20,000	24

Receiving port	Cost	Unload rate (t/day)	Turn time (hours)
Rotterdam	$60,000	20,000	24
Iskenderun	$34,000	12,000	24
Santos	$80,000	12,000	24
Krishnapatnam	$85,000	8,000	24
Fangcheng	$80,000	10,000	24
Rizhao	$50,000	10,000	24
Kandla	$68,500	8,000	24
Fangcheng	$80,000	10,000	24

Handysize

Loading port	Cost	Load rate (t/day)	Turn time (hours)
Dumai	$46,000	2,000	24
Imbituba	$85,000	4,286	24
La Plata	$140,000	5,000	24

Receiving port	Cost	Unload rate (t/day)	Turn time (hours)
Rizhao	$28,500	10,000	24

Time-charter equivalent

Time-charter equivalent (TCE) rates are calculated using Argus's $/t and the same assumptions described above to arrive at a $/d rate for each route.

Fuel, sulphur and scrubbers

For each route, two time-charter equivalent rates are published, one for scrubber-equipped vessels burning 3.5pc sulphur fuel oil and another for vessels burning 0.5pc sulphur fuel oil. While in the US and European sulphur emissions control areas (SECAs) and in ports in those regions, all vessels are assumed to consume 0.1pc MGO. Vessels are assumed to consume 0.5pc sulphur fuel oil in all other ports, with no scrubber use in port. Fuel prices are the latest Argus assessments at the named fuelling location (Singapore, Rotterdam or Zhoushan) available at the time of publication. See the Argus Marine Fuels methodology for more information about Argus bunker fuel price assessments.

TCE routes

Each TCE route is described with reference to three or more locations, the starting position of the vessel and the bunkering port (ballast origin in the table below), the port at which cargo is loaded (origin) and the port at which cargo is unloaded (destination). Voyages are not assumed to be round-trip unless specified. Voyages to/from east Australia avoid the Torres strait, which is impassable for Capesize vessels. The route from Richards Bay to Kandla sails west of Madagascar.

Broker commission on negative TCE rates

No TCE broker commission is added when the TCE is less than zero. TCE rates can fall below zero if shipowners' costs are larger than the lumpsum for the voyage.

Dry bulk TCE assessments

Route	Cargo size (t)	Bunkering port	Ballast leg	Laden leg
Port Hedland-Qingdao	176,500	Zhoushan	Qingdao-Zhoushan-Port Hedland	Port Hedland-Qingdao
Saldanha Bay-Qingdao	176,500	Singapore	Qingdao-Singapore-Saldanha Bay	Saldanha Bay-Qingdao
Tubarao-Qingdao	176,500	Singapore	Qingdao-Singapore-Tubarao	Tubarao-Qingdao
Tubarao-Rotterdam (backhaul)	176,500	Singapore	Qingdao-Singapore-Tubarao	Tubarao-Rotterdam
Puerto Bolivar-Rotterdam	160,000	Rotterdam	Rotterdam-Puerto Bolivar	Puerto Bolivar-Rotterdam
Gladstone-Zhoushan	170,000	Zhoushan	Qingdao-Zhoushan-Gladstone	Gladstone-Zhoushan
Gladstone-Fangcheng	170,000	Zhoushan	Qingdao-Zhoushan-Gladstone	Gladstone-Fangcheng
Hay Point-Zhoushan	170,000	Zhoushan	Qingdao-Zhoushan-Hay Point	Hay Point-Zhoushan
Hay Point-Fangcheng	170,000	Zhoushan	Qingdao-Zhoushan-Hay Point	Hay Point-Fangcheng
Hay Point-Rotterdam	170,000	Zhoushan	Qingdao-Zhoushan-Hay Point	Hay Point-Rotterdam
Newcastle-Zhoushan	140,000	Zhoushan	Qingdao-Zhoushan-Newcastle	Newcastle-Zhoushan
Newcastle-Fangcheng	140,000	Zhoushan	Qingdao-Zhoushan-Newcastle	Newcastle-Fangcheng
Richards Bay-Krishnapatnam (basis Qingdao)	160,000	Singapore	Qingdao-Singapore-Richards Bay	Richards Bay-Krishnapatnam
Richards Bay-Kandla (basis Qingdao)	160,000	Singapore	Qingdao-Singapore-Richards Bay	Richards Bay-Kandla
Richards Bay-Rotterdam (backhaul)	160,000	Singapore	Qingdao-Singapore-Richards Bay	Richards Bay-Rotterdam
Richards Bay-Fangcheng	160,000	Singapore	Qingdao-Singapore-Richards Bay	Richards Bay-Fangcheng

Four-week petroleum coke averages

Argus Dry Freight includes rolling four-week average petroleum coke freight rates, calculated as the average published rate for each route during the four calendar weeks up to and including the day of publication.

Russian coal

Argus Dry Freight includes weekly freight rates for Russian coal exports. Rates are assessed and published on Fridays, or the previous publication day if Friday is a UK holiday. Russian coal freight rates include additional war risk insurance premiums (AWRP) as standard for coal-carrying vessels calling at Russian ports.

See the complete list of assessed Russian coal freight rates and their specifications below.

Fertilizers

Sulphur
- Vancouver-China 50,000-60,000t
- Middle East-east coast India 30,000-35,000t
- Middle East-east coast India 40,000-45,000t
- Middle East-north/river China 30,000-35,000t
- Middle East-south China 30,000-35,000t
- Middle East-south China 50,000-55,000t
- Middle East-Indonesia 30,000-35,000t
- Middle East-Indonesia 50,000-55,000t
- Middle East-Brazil 30,000-35,000t
- Middle East-north Africa 30,000-35,000t

- Middle East-north Africa 50,000-55,000t
- Middle East-South Africa 30,000-35,000t
- Black Sea-north Africa 30,000-35,000t
- Black Sea-Brazil 30,000-35,000t
- Baltic-Brazil 30,000-35,000t
- Baltic-north Africa 30,000-35,000t
- Baltic-US Gulf 35,000-40,000t
- US Gulf-Brazil 35,000-40,000t

See the Argus Sulphur methodology

Finished phosphates
- Tampa-west coast India (55,000-60,000t)
- Morocco-Brazil (25,000-35,000t)
- Egypt-Brazil (30,000-35,000t)
- Tampa-Brazil (25,000-35,000t)
- Baltic-Brazil (25,000-35,000t)
- Baltic-India (25,000-35,000t)
- Kingdom of Saudi Arabia (KSA)-east coast India

Phosphate rock
- Morocco-south Brazil (30,000t)
- Red Sea-west coast/east coast India (25,000-35,000t)
- Red Sea-Indonesia (25,000-35,000t)
- Morocco-US (25,000-35,000t)

See the Argus Phosphates methodology

Potash
- Baltic Sea-China (60,000-65,000t)
- Baltic Sea-Nola (50,000-55,000t)
- Hamburg-Brazil (30,000-35,000t)
- Red Sea-west coast India (25,000-30,000t)

- Vancouver-China (60,000-65,000t)
- Vancouver-southeast Asia (25,000-30,000t)
- Vancouver-Brazil (30,000-35,000t)

See the Argus Potash methodology

Dry urea
- Mideast Gulf-US Gulf (45,000t)
- Mideast Gulf-Thailand (30,000t)
- Baltic-Brazil (30,000t)
- Nigeria-Brazil (30,000t)
- Egypt-French bay (6,000t)
- China-southeast Asia (6,000t)
- China-India (60,000t)
- Algeria-Brazil (30,000t)
- Algeria-US Gulf (30,000t)
- Algeria-French bay (12,000t)
- Baltic-east coast Mexico (30,000t)
- Baltic-west coast Mexico (25,000t)
- China-west coast Mexico (25,000t)

See the Argus Nitrogen methodology

Carbon costs

Argus Dry Freight publishes the cost of CO_2 emissions credits under the EU Emissions Trading System (EU ETS) for coal, iron ore, grain, and petroleum coke routes beginning and/or ending at EU ports. The cost is calculated for one-way and round-trip voyages using the following formula:

Carbon cost ($) = voyage CO_2 emissions (t) x CO_2 emissions allowance price ($/t)

CO_2 emissions costs are published as lumpsums and in $/t for all routes.

For routes beginning and ending at EU ports, all CO_2 emissions are assumed to require permits and are included in the calculation. For routes beginning or ending at EU ports, half of the CO_2 emissions are assumed to require permits and are included in the calculation.

EU ETS phase in
Shipping's inclusion in the EU ETS is being phased in over several years. Accordingly, Argus calculates costs for 40pc of voyage carbon emissions requiring permits to the end of 2024, 70pc in 2025 and 100pc thereafter.

CO_2 emissions price
The CO_2 price is the Argus assessment of the December-delivery EU ETS allowance price converted to US dollars/t. See the Argus European Emissions Markets methodology.

Assumptions
Voyage CO_2 emissions are based on the type and amount of fuel consumed on each voyage, which varies depending on ship operation and whether at sea, within Emissions Control Areas (ECAs) or at port.

Vessel speeds, loading and unloading times, preferences for or against canal transits, and other components of the calculations are the same as those assumed in other calculated freight rates described above.

Argus assumes the following CO_2 emissions per tonne of fuel burned:
- HSFO: 3.114t CO_2/t fuel
- LSFO: 3.151t CO_2/t fuel
- MGO: 3.206t CO_2/t fuel

All assumptions are under continual review and are updated at least once a year.

Routes covered

Coal
- Hay Point-Rotterdam (via Suez) 160kt Capesize
- Hampton Roads-Rotterdam 120kt Capesize
- Houston-Rotterdam 75kt Panamax

Iron ore
- Tubarao-Rotterdam 170kt Capesize

Grain
- Houston-Rotterdam 65kt Panamax

Petroleum coke
- Port Arthur-Rotterdam 50kt Supramax

Panama Canal wait times and auctions

Northbound and southbound wait times are assessed in number of days for:

- Neopanamax locks for vessels with a beam exceeding 107ft
- Panamax locks for vessels with a 91-107ft beam

Auction prices paid by shippers to reserve a transit slot when pre-booked slots are unavailable are published weekly on Monday for:

- Panamax locks
- Neopanamax locks

See the Argus Tanker Freight methodology.

Capesize

Route	Size ('000t)	Cargo	Origin	Destination (routing)	Time
Pacific					
WC Australia-N China	170	Iron Ore	Dampier and Port Hedland	Dalian, Qingdao, Qinhuangdao and Rizhao, China	SGP, 6pm
Newcastle-Fangcheng	130	Coal	Newcastle, Australia	Fangcheng, China (via Wewak, PNG)	SGP, 6pm
Newcastle-Zhoushan	130	Coal	Newcastle, Australia	Zhoushan, China (via Wewak, PNG)	SGP, 6pm
Hay Point-Fangcheng	160	Coal	Hay Point, Australia	Fangcheng, China (via Wewak, PNG)	SGP, 6pm
Hay Point-Zhoushan	160	Coal	Hay Point, Australia	Zhoushan, China (via Wewak, PNG)	SGP, 6pm
Gladstone-Fangcheng	160	Coal	Gladstone, Australia	Fangcheng, China (via Wewak, PNG)	SGP, 6pm
Gladstone-Zhoushan	160	Coal	Gladstone, Australia	Zhoushan, China (via Wewak, PNG)	SGP, 6pm
Hay Point-Rotterdam	160	Coal	Hay Point, Australia	Rotterdam, Netherlands	SGP, 6pm
Indian Ocean					
Richards Bay-S China	150	Coal	Richards Bay, South Africa	Fangcheg and Guangzhou, China	UK, 5pm
Richards Bay-Krishnapatnam	150	Coal	Richards Bay, South Africa	Krishnapatnam, India	UK, 5pm
Richards Bay-Kandla	150	Coal	Richards Bay, South Africa	Kandla, India (discharge at anchorage)	UK, 5pm
Saldanha Bay-Qingdao	170	Iron Ore	Saldanha Bay, South Africa	Qingdao, China	UK, 5pm
Atlantic					
Tubarao-Qingdao	170	Iron Ore	Tubarao, Brazil	Qingdao, China	UK, 5pm
Tubarao-Rotterdam	170	Iron Ore	Tubarao, Brazil	Rotterdam, Netherlands	UK, 5pm
Puerto Bolivar-Rotterdam	160	Coal	Puerto Bolivar, Colombia	Rotterdam, Netherlands	UK, 5pm
Richards Bay-Rotterdam	150	Coal	Richards Bay, South Africa	Rotterdam, Netherlands	UK, 5pm
US east coast-ARA	120	Coal	US east coast (north of Cape Hatteras)	ARA	NY, 5pm
US east coast-east coast India	120	Coal	US east coast (north of Cape Hatteras)	east coast India	NY, 5pm

Panamax

Route	Size ('000t)	Cargo	Origin	Destination (route)	Time
Pacific					
EC Australia-Japan	75	Coal	Abbot Point, Dalrymple Bay, Gladstone, Hay Point, Newcastle and Port Kembla	Chiba, Fukuyama, Kashima, Kure, Mizushima, Oita and Soma (via Wewak, PNG)	SGP, 6pm
EC Australia-S Korea	75	Coal	Abbot Point, Dalrymple Bay, Gladstone, Hay Point, Newcastle and Port Kembla	Gwangyang (Kwangyang), Pohang, Ulsan and Yosu (via Wewak, PNG)	SGP, 6pm
EC Australia-east coast India	75	Coal	Abbot Point, Dalrymple Bay, Gladstone, Hay Point, Newcastle and Port Kembla	Dhamra, Ennore, Gangavaram, Krishnapatnam, Paradip and Vizag	SGP, 6pm
EC Australia-S China	75	Coal	Abbot Point, Dalrymple Bay, Gladstone, Hay Point, Newcastle and Port Kembla	Fangcheng and Guangzhou (via Wewak, PNG)	SGP, 6pm
Indonesia-Japan	75	Coal	South Kalimantan Island ports, including Balikpapan, Bontang Coal Terminal, Lubuk Coal Terminal, north and south Pulau Laut Coal Terminals, Samarinda port, Taboneo port and Tanjung Bara Coal Terminal	Chiba, Fukuyama, Kashima, Kure, Mizushima, Oita and Soma	SGP, 6pm
Indonesia-S Korea	75	Coal	South Kalimantan Island ports, including Balikpapan, Bontang Coal Terminal, Lubuk Coal Terminal, north and south Pulau Laut Coal Terminals, Samarinda port, Taboneo port and Tanjung Bara Coal Terminal	Gwangyang (Kwangyang), Pohang, Ulsan and Yosu	SGP, 6pm
Indonesia-east coast India	75	Coal	South Kalimantan Island ports, including Balikpapan, Bontang Coal Terminal, Lubuk Coal Terminal, north and south Pulau Laut Coal Terminals, Samarinda port, Taboneo port and Tanjung Bara Coal Terminal	Krishnapatnam, Dhamra, Ennore, Gangavaram, Vizag and Paradip	SGP, 6pm
Indonesia-S China	75	Coal	South Kalimantan Island ports, including Balikpapan, Bontang Coal Terminal, Lubuk Coal Terminal, north and south Pulau Laut Coal Terminals, Samarinda port, Taboneo port and Tanjung Bara Coal Terminal	Fangcheng and Guangzhou	SGP, 6pm
West coast North America-Japan	75	Coal	West coast North America	Japan	NY, 5pm
West coast North America-ARA	75	Coal	West coast North America	ARA (via Panama)	NY, 5pm
Kalama-Qingdao	65	Grains	Kalama, US	Qingdao, China	NY, 5pm
			65,000t, loading 10,000t/d and discharge 8,000t/d excluding Sunday based on 82,000dwt Kamsarmax vessel, loading 10-30 days forward		
Vancouver-Qingdao	65	Grains	Vancouver, Canada	Qingdao, China	NY, 5pm
			65,000t, loading 15,000t/d and discharge 8,000t/d excluding Sunday based on 82,000dwt Kamsarmax vessel, loading 10-30 days forward		
US west coast-Japan	70	Pet coke	Long Beach, US	Kashima	NY, 5pm
Atlantic/Black Sea					
Murmansk-Rotterdam	75	Coal	Murmansk, Russia	Rotterdam, Netherlands	UK, 5pm
Richards Bay-Rotterdam	75	Coal	Richards Bay, South Africa	Rotterdam, Netherlands	UK, 5pm
Puerto Bolivar-Rotterdam	75	Coal	Puerto Bolivar, Colombia	Rotterdam, Netherlands	UK, 5pm
US east coast-ARA	75	Coal	US east coast (north of Cape Hatteras)	ARA	NY, 5pm
US east coast-Japan	75	Coal	US east coast (north of Cape Hatteras)	Japan (via Panama/Suez/Cape of Good Hope)	NY, 5pm
US east coast-east coast India	75	Coal	US east coast (north of Cape Hatteras)	east coast India (via Suez/Cape of Good Hope)	NY, 5pm
US Gulf coast-ARA	75	Coal	US Gulf	ARA	NY, 5pm

Route	Size ('000t)	Cargo	Origin	Destination	Time
Houston-Rotterdam	65	Grains	Houston, US	Rotterdam, Netherlands	NY, 5pm
65,000t, loading 25,000t/d and discharge 25,000t/d excluding Sunday based on 82,000dwt Kamsarmax vessel, loading 10-30 days forward					
Houston-Qingdao	65	Grains	Houston, US	Qingdao, China (via Panama/Suez/Cape of Good Hope)	NY, 5pm
65,000t, loading 25,000t/d and discharge 8,000t/d excluding Sunday based on 82,000dwt Kamsarmax vessel, loading 10-30 days forward					
Santos-Qingdao	60	Grains	Santos, Brazil	Qingdao, China	UK, 5pm
60,000t, loading 8,000t/d and discharge 8,000t/d excluding Saturday and Sunday based on 77,000dwt Panamax vessel, loading 20-45 days forward					
Odessa-Qingdao	65	Grains	Odessa, Ukraine	Qingdao, China (via Suez)	UK, 5pm
65,000t, loading 10,000t/d and discharge 8000t/d excluding Saturday and Sunday, based on 82,000dwt Kamsarmax vessel, loading 10-30 days forward					
Novorossiysk-Qingdao	65	Grains	Novorossiysk, Russia	Qingdao, China (via Suez)	UK, 5pm
65,000t, loading 10,000t/d and discharge 8000t/d excluding Saturday and Sunday, based on 82,000dwt Kamsarmax vessel, loading 10-30 days forward, includes additional war risk insurance premiums (AWRP)					
Odessa-Alexandria	65	Grains	Odessa, Ukraine	Alexandria, Egypt (El Dekheila port) (via Suez)	UK, 5pm
65,000t, loading 10,000t/d and discharge 6000t/d excluding Saturday and Sunday, based on 82,000dwt Kamsarmax vessel, loading 10-30 days forward					
Novorossiysk-Alexandria	65	Grains	Novorossiysk, Russia	Alexandria, Egypt (El Dekheila port) (via Suez)	UK, 5pm
65,000t, loading 10,000t/d and discharge 6000t/d excluding Saturday and Sunday, based on 82,000dwt Kamsarmax vessel, loading 10-30 days forward, includes additional war risk insurance premiums (AWRP)					

Supramax					
Route	**Size ('000t)**	**Cargo**	**Origin**	**Destination (route)**	**Time**
Pacific					
US west coast-China	50	Pet coke	Long Beach, US	Rizhao	NY, 5pm
East coast Saudi Arabia-west coast India	50	Pet coke	Jubail	Kandla	NY, 5pm
East coast Saudi Arabia-China	50	Pet coke	Jubail	Fangcheng	NY, 5pm
Atlantic					
US Gulf coast-ARA	50	Pet coke	Port Arthur	Rotterdam	NY, 5pm
Venezuela-ARA	50	Pet coke	Port Arthur	Rotterdam	NY, 5pm
US Gulf coast-Turkey	50	Pet coke	Port Arthur	Iskenderun	NY, 5pm
US Gulf coast-Brazil	50	Pet coke	Port Arthur	Santos	NY, 5pm
US Gulf coast-China	50	Pet coke	Port Arthur	Fangcheng (via Panama/Suez/Cape of Good Hope)	NY, 5pm
US Gulf coast-east coast India	50	Pet coke	Port Arthur	Krishnapatnam (via Suez/Cape of Good Hope)	NY, 5pm
US Gulf coast-west coast India	50	Pet coke	Port Arthur	Kandla (via Suez/Cape of Good Hope)	NY, 5pm

Handysize

Route	Size ('000t)	Cargo	Origin	Destination (route)	Time
Pacific					
Indonesia-north China*	20	Pet coke	Dumai	Rizhao	NY, 5pm
Atlantic					
Brazil-north China	30	Pet coke	Imbituba	Rizhao	NY, 5pm
Argentina-north China	24	Pet coke	La Plata	Rizhao	NY, 5pm
* assumes 25k dwt Handysize					

Russian coal

Route	Size ('000t)	Cargo	Origin	Destination	Time
Pacific					
Murmansk-China	75	Coal	Murmansk	China	UK, 5pm
Taman-China	160	Coal	Taman	China	UK, 5pm
Taman-Iskenderun	75	Coal	Taman	Iskenderun, Turkey	UK, 5pm
Taman-west coast India	75	Coal	Taman	Mumbai, Mundra, Kandla	UK, 5pm
Ust-Luga-China	75	Coal	Ust-Luga	China	UK, 5pm
Ust-Luga-Iskenderun	75	Coal	Ust-Luga	Iskenderun, Turkey	UK, 5pm
Ust-Luga-west coast India	75	Coal	Ust-Luga	Mumbai, Mundra, Kandla	UK, 5pm
Vostochny-north China	75	Coal	Vostochny	north of and including Changjiangkou	UK, 5pm
Vostochny-South Korea	75	Coal	Vostochny	Gwangyang (Kwangyang), Pohang, Ulsan and Yosu	UK, 5pm
Nakhodka-north China	30	Coal	Nakhodka	north of and including Changjiangkou	UK, 5pm