

Fastmarkets Benchmark Administration Oy (FBA) Cobalt Standard Grade, in-whs Rotterdam Benchmark Statement

Last updated: February 2025

1. General disclosures	
Benchmark name	Fastmarkets cobalt standard grade, in-warehouse (inwhs) Rotterdam, \$/lb
Date of initial publication	11 th March 2021
Date of last update	February 2025
ISIN (where available)	This benchmark did not have an ISIN code at the time of publication of this Statement.
Determination by contributions of input data	The benchmark is determined using contributions of input data from a range of market participants within the cobalt market, including producers, industrial consumers and traders.
Qualification of the benchmark	This benchmark is a commodity benchmark as per the definition set out in Article 3(1)(23) of Regulation (EU) 2016/1011 (the BMR). Pursuant to Article 19(1), the requirements of Annex II of the BMR, together with Article 10, apply to it because the underlying asset is a commodity, and because the benchmark in question is not a regulated-data benchmark and is not based on submissions by contributors, the majority of which are supervised entities. The benchmark does not qualify as a type of benchmark listed under Title III of the BMR.
EU Climate Transition Benchmarks/Parisaligned benchmarks/ESG objectives ((EU) 2019/2089)	Fastmarkets ¹ provides a wide range of commodity price assessments and indices. These do not include any EU Climate Transition Benchmark, EU Paris-aligned Benchmark or Benchmarks that pursue the EU ESG objectives. Accordingly, this benchmark does not pursue ESG objectives and is not an EU Climate Transition Benchmark or EU Paris-aligned benchmark.
Explanation of how the methodology aligns with the target of carbon emission reductions or attains the objectives of the Paris Agreement.	Not applicable
2. Key terms relating to the benchmark or family of benchmarks	
Definition of key terms relating to the benchmark	<p>In-warehouse Rotterdam refers to standard-grade cobalt stored in a warehouse in or around the Port of Rotterdam. Data that falls outside the Port of Rotterdam area will be normalized, if possible, to determine the equivalent price for Rotterdam and will be considered.</p> <p>Standard-grade cobalt refers to a selection of named brands in the specification that have been grouped based on them historically trading to similar dynamics, driven by chemical and melting applications. 99.8% purity cobalt refers to cobalt metal containing a minimum of 99.8% cobalt content.</p>

¹ See the “About Fastmarkets” section at the end of the statement for information on Fastmarkets.

<p>General description of the market or economic reality</p>	<p>The Fastmarkets cobalt standard grade, in-warehouse Rotterdam price is a daily assessment range for the tradable low-high levels of spot min 99.8% cobalt metal, on an in-warehouse Rotterdam delivery basis (min 1 tonne, max 100 tonnes). Data inputs from sellers and</p>
	<p>buyers of cobalt include actual deals, bids and offers, and contributors' own assessments of the market, with deals given the most weighting.</p> <p>The cobalt assessment is reported as a range that reflects where the bulk of the business has been or is likely to have been concluded over the quotation period.</p> <p>Physical market participants use this benchmark as a reference for spot transactions and as a component for their long-term supply agreements. Global exchanges, including the London Metal Exchange, the Chicago Mercantile Exchange and the Singapore Exchange, use the cobalt standard grade price assessment as a settlement price.</p>
<p>Geographical boundaries of the market or economic reality</p>	<p>Fastmarkets' cobalt standard grade, in-whs Rotterdam price is a global benchmark used as a reference for cobalt metal business as well as raw materials such as hydroxide and downstream products such as cobalt salts. Rotterdam is the main trading hub for cobalt metal.</p> <p>Data reported for other smaller trading hubs, most typically Baltimore in the US; India; Japan; and South Korea may be included if and when they can be normalised to reflect the tradable level in Rotterdam. This is done by collecting freight netbacks from market participants.</p> <p>Contributors include anyone who is actively trading cobalt on a spot basis. This includes producers and industrial users as well as traders and banks. The global cobalt market is estimated at around 250,000 tonnes, including 72,000 tonnes for metals and up to 13,000 tonnes specifically in Europe. Metal share as a proportion of the total global production is fluid and depends on what is in demand. About 15% changes hands on the spot market, while the remaining 85% trades on long-term contracts - these contracts are mostly index-based and reference the Fastmarkets price.</p>

<p>Other relevant information relating to the market or economic reality</p>	<p>Fastmarkets accepts assessments involving nine cobalt brands in standard grade. They are all minimum 99.8% cobalt metal brands and must be in their original packaging to be included in the price assessment. These brands are: Katanga cathodes, Chambishi broken cathodes, CTT broken cathodes, Minara briquettes, Ambatovy briquettes, Norilsk grade 1 and grade 2 cut cathodes (production since January 2019), Sherritt briquettes, Vale Long Harbour standard grade rounds (99.8% cobalt), Jiangsu (KLK) cut cathodes, Huayou cut cathodes, Hanrui cut cathodes, Tengyuan cut cathodes, Greatpower cut cathodes and Lygend cut cathodes. In the standard-grade cobalt market, prices are driven by chemical and melting applications; therefore, Fastmarkets seeks confirmation of predominant usage in these applications when adding a brand. This is confirmed through consultation with the market and historic pricing analysis. Cobalt brands and the grades under which they are designated are under constant review by Fastmarkets. A consultation to seek feedback on the addition of metal brands into the standard grade brand list was completed in Quarter 1 of 2025. A second consultation to seek feedback on adding a cobalt powder brand into the standard grade brand list is ongoing and closes in Summer 2025.</p> <p>Brands that trade according to dynamics in other markets are not included. This is most typically where predominant usage is in alloying markets such as aerospace. These are not included in the standard-</p>
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	<p>grade price assessment. Instead, they are listed in the cobalt alloy-grade specification.</p> <p>Fastmarkets began daily publication of its standard grade cobalt price assessments in February 2020 following a formal consultation in October and November 2019. Prices were published twice a week until that time.</p>
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<p>Rationale for adopting the methodology</p>	<p>Fastmarkets' rationale is to adopt and develop the price discovery process and to produce assessments that are a consistent and representative indicator of the market for the trading period they measure.</p>
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3. Potential limitations of the benchmark and the circumstances in which the measurement of the market or economic reality may become unreliable

<p>Circumstances in which Fastmarkets would lack enough input data to determine the benchmark according to the methodology</p>	<p>The frequency of publication of the cobalt standard grade, in-whs Rotterdam price - every weekday - was determined after considering the number of inputs that Fastmarkets can reasonably expect to collect on a consistent basis over the selected period to support the price assessment process, ensuring that the benchmark can be determined on each pricing day and is a reliable indicator for the physical market it relates to.</p> <p>To provide a representative price for the market, Fastmarkets' price reporters aim to collect as many representative data points as possible within the defined collection window.</p> <p>Because commodity markets differ in liquidity at different periods, Fastmarkets typically does not set a minimum number, or threshold, of price points to be gathered on which to base the assessment.</p> <p>A pricing session typically includes concluded transactions, bids and offers, contributors' market indications or deals heard. Several separate sources from a cross section of the market (producers, consumers, traders) will typically contribute to a price assessment.</p> <p>In the unlikely situation that more than half of the pricing inputs collected in a session is provided by a single source, the assessor may refer to data collected in the previous pricing session to avoid a dependency on a single entity providing an unacceptably significant (50% or more) proportion of data.</p> <p>Fastmarkets cannot guarantee a minimum threshold for actual transactions because markets naturally vary in liquidity, but every effort is made to collect as many transactions as possible.</p>
<p>Circumstances in which the degree of liquidity of the underlying market becomes insufficient to ensure the integrity and reliability of the benchmark determination</p>	<p>Fastmarkets aims to engage a broad and balanced range of physical market participants in the provision of data, including producers, consumers and traders who are selling or buying standard-grade cobalt metal.</p> <p>A pricing session typically includes concluded transactions, bids and offers, contributors' market indications or deals heard. Several separate sources from a cross section of the market (producers,</p>

	<p>consumers, traders) will typically contribute to a price assessment, and Fastmarkets ensures that there is no key submitter dependency.</p> <p>When no actual transactions can be collected, extra caution is applied during the price assessment process. Should bids, offers and estimates fall outside the existing price range, price reporters can exercise their expert judgment (subject to the controls described in Section 4 below) to move the price to reflect the levels where business would take place if transactions were to actually take place.</p> <p>Any market participant actively involved in trading in the physical cobalt spot market may become a data contributor following a review by Fastmarkets of the market participant's activities. After a maximum of three months of monitoring contributions, the data submitter is eligible for approval. This approval is subject to a background check and sign-off by the reporter. During the initial three-month period, new data submitters submit data to be considered in the pricing assessment as normal, but their data is treated with more caution and scrutiny.</p> <p>After this maximum three-month period, a well-trained senior member of the reporting team will do a final review of the information about the contributor before approving them and adding a rationale to justify the approval.</p> <p>The aim is to ensure that submitters are actively involved in the trading of cobalt and have sufficient visibility and understanding of the market in question to be able to provide reliable price data. Fastmarkets expects data submitters taking part in the pricing process to be authorized to report market data on behalf of their organizations. Fastmarkets encourages organizations to submit all their pricing data, especially all the concluded transactions.</p>
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4. The controls and rules that govern the exercise of judgment or discretion in the calculation of the benchmark or family of benchmarks

<p>Description of the exercise of judgement or discretion in the calculation of a benchmark</p>	<p>Fastmarkets price reporters are required to adhere to Fastmarkets' Code of Conduct and published</p>
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	<p>methodologies². They are well-trained in their markets and are instructed to record every step of each pricing session within Fastmarkets' in-house database and pricing system, which enforces strict pricing procedures, peer review checks, security of data, consistency and accountability.</p> <p>Fastmarkets price reporters are permitted to exercise discretion in the determination of the benchmark, subject to strict criteria as described below. The published assessment will typically be reflective of the highest confidence and highest-significance data collected in that pricing session. To produce the price assessment, a consideration hierarchy is established based on an</p>
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² See <https://www.fastmarkets.com/benchmark-admin> for more details.

	<p>evaluation of, first, the reporter’s confidence in the data’s reliability; and, second, the significance of the data.</p> <p>The confidence level, or trustworthiness, of a data point is generally based on the transparency of the activity, whether it was reported by a party directly involved or was “heard” activity, corroboration by other market participants and the level of detail provided by the data submitter, although there may be other contributory factors. For indications of tradable levels or other indication of willingness to sell or purchase, confidence may be determined based on the justification provided by the submitter, their visibility and activity level in the market, and their prior reliability.</p> <p>The significance of a data point is determined based on its effectiveness in identifying the tradable level of the market under assessment. Transactions are considered highest in the significance hierarchy “tight” bids/offers are of secondary importance, followed by data sources’ own indications of a tradable level when they have no business to report. Tight bids/offers are typically defined as those being within the range of transaction and/or indication data points, thereby helping narrow Fastmarkets’ assessment of the tradable range. More speculative bids/offers outside the range of other data would typically be of lowest significance. In some circumstances, firm bids higher than transactions or offers lower than transactions may be considered of high significance if deemed to demonstrate a clear directional change in market floor or ceiling levels.</p> <p>As a general rule, larger deals may typically be considered more significant, but Fastmarkets also tries to ascertain what sort of price differential different lot sizes might carry. Fastmarkets may use its expert judgment to exclude input data that is not fairly presented or is believed to be questionable, unreliable or an attempt to distort the price calculation.</p> <p>The exercise of expert judgement by the reporting team requires approval by a well-trained senior member of the reporting team and a detailed justification that is published in the daily pricing rationale, trade log and/or market commentary.</p> <p>The reporting team will investigate outliers, and suspected attempts to unfairly influence the index may result in the data submitter being warned or excluded from the pricing process.</p> <p>Fastmarkets will compare information received from a single source with information provided by the same source in the previous pricing cycle. This way, if a source consistently gives low or high numbers, Fastmarkets can still use the data without it unduly influencing its assessment.</p>
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	<p>Occasionally, Fastmarkets receives price data for material with different specifications - for instance,</p>
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	<p>different material quality, delivery terms or delivery location, or different cargo size or payment terms.</p> <p>The reporting team will exercise expert judgement when normalising data points and determine whether the different specifications and their normalisations are reflective of similar market dynamics for cobalt metal 99.8% standard grade in-whs Rotterdam.</p> <p>In such cases, when appropriate, Fastmarkets normalises data to its typical specifications.</p>
<p>Controls governing the exercise of judgment or discretion</p>	<p>The exercise of expert judgment by the reporting team requires approval by a well-trained senior member of the reporting team and a detailed justification that is published in the daily pricing rationale, trade log and/or market commentary.</p> <p>In exercising expert judgment, Fastmarkets price reporters must consider the following guidelines:</p> <ul style="list-style-type: none"> • Is the information received credible? If questionable, have they seen signed contracts (preferable), or has it been confirmed on both sides of the deal? If credible, were all the prices in a similar range? Were all the deals reported of a similar size? • Do the reported deals all have the same terms and specifications? • Did all the sources indicate the market was headed in the same direction? If not, why? • It is not unusual for different sources to report slightly different prices but it is important, as far as possible, to understand why they are different. • In the absence of trade, what are the prevailing bids/offers in the market? Did the source provide firm bids/offers or indicative prices? • What are the positions of the contributors? • Are they confident about the freight or free-on-charge costs? • Has an adequate sample been obtained that correctly represents the market?

<p>Ex-post evaluation process</p>	<p>All prices are subject to peer review and are signed off by a senior member of Fastmarkets' pricing team prior to publication. This peer-review process is in place to make sure that pricing procedures and methodologies are correctly and consistently applied and to ensure integrity and quality of the published prices. Full details of data inputs and calculations are stored in Fastmarkets' MInD database and may be accessed at any time for internal review and auditing purposes. The cobalt assessments are also supported by pricing rationales.</p> <p>To enhance market transparency and to provide evidence of data inputs that supports the price discovery process, Fastmarkets also publishes trade logs for its cobalt price assessment, while maintaining full counterparty confidentiality. Data is stored in this secure system for seven years.</p>
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	<p>Fastmarkets' compliance team performs ex-post ad-hoc reviews to ensure adherence to the methodologies and the Compliance Manual, and reports its findings to FBA and its oversight committee at least on a quarterly basis. Any suspicion of breach of the pricing procedures is investigated and a correction notice is promptly issued to market participants when necessary. Any formal complaint related to Fastmarkets' assessments and indices will be investigated pursuant to the published complaints procedure.</p> <p>Fastmarkets' benchmarks are also subject to an external and independent assurance review once a year for their compliance with the International Organisation of Securities Commissions (IOSCO) Principles for Price Reporting Agencies.</p>
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5. Review of the methodology and changes to, or cessation of, the benchmark or family of benchmarks

<p>Methodology review</p>	<p>Since markets evolve continually, it may become necessary to make changes to a benchmark’s methodology or specifications. Fastmarkets carries out a formal review of its methodologies at least on an annual basis to ensure that they reliably meet industry needs and reflect the physical market under assessment.</p> <p>The process starts with an open consultation published on Fastmarkets’ publicly accessible website, when editorial teams may propose changes to the methodology to reflect changed market conditions and invite market participants to share feedback or propose changes.</p> <p>A consultation must run for at least one month, or around 20 business days, per Fastmarkets’ methodology review and change consultation process published on its website.</p> <p>At the end of the consultation, the editorial teams review any feedback received, decide whether further consultation is needed or whether a change should be made.</p> <p>Any proposed change to the methodology requires approval by a senior member of Fastmarkets’ editorial team and by the Managing Director of FBA. Any material change to the methodology requires approval by the Board of Directors of FBA.</p> <p>The decision is announced via a pricing notice that clearly outlines the rationale for the change, the feedback received (unless stated as confidential) and the timeline for its implementation. Fastmarkets will provide ample notice to give stakeholders sufficient opportunity to analyse and comment on the impact of any proposed changes.</p>
<p>Changes to or cessation of a benchmark or family of benchmarks</p>	<p>It is possible that factors, including external factors beyond Fastmarkets’ control, could necessitate changes to, or in extremis, the cessation of, a Fastmarkets benchmark or family of benchmarks. It is also possible that changes to, or the cessation of, a Fastmarkets</p>

	<p>benchmark or family of benchmarks may have an impact upon the financial instruments that reference them.</p> <p>Fastmarkets makes all reasonable efforts to maintain the highest standards of accuracy in its published benchmarks. When errors are detected, they will be corrected as promptly as reasonably possible, with notification provided to users and subscribers at the earliest opportunity via a pricing notice.</p> <p>Corrections made within a month of publication need to be approved by a senior deputy, a senior editor or global editorial director.</p> <p>Corrections made more than one month beyond publication need to be signed off by a senior deputy and a senior editor or global editorial director.</p> <p>When proposing to discontinue a benchmark, Fastmarkets must have thoroughly reviewed the following considerations:</p> <ul style="list-style-type: none"> • <u>Assessment process and methodology</u>: Is the price still assessable or has the assessment become obsolete? Has it used the right specifications? How robust is the assessment/index? • <u>Market fundamentals</u>: Is there insufficient spot activity in the market? Does the product lack features of commoditisation (spot assessments may have been premature)? <p>FBA expects that, in practice, a requirement to fully discontinue a benchmark is unlikely and a need to update the methodology is more likely.</p> <p>However, if Fastmarkets decided to go ahead with a proposal to terminate a benchmark, it would follow the same procedure set out for a proposal for a material change to the methodology. It would seek the views of the benchmark users via a consultation process and a notice that outlines the rationale for a discontinuation and presents a proposed timetable that would give users sufficient warning should the change go ahead.</p>
<p>6. Commodity benchmarks</p>	
<p>Qualification as a commodity benchmark</p>	<p>Fastmarkets benchmarks are commodity benchmarks.</p>
<p>Title II or Annex II regime</p>	<p>Fastmarkets benchmarks meet the conditions specified in Article 19 of the BMR to be subject to the requirements of Annex II for commodity benchmarks.</p>
<p>Criteria that defines the relevant underlying physical commodity</p>	<p>The Fastmarkets cobalt standard grade, in-whs Rotterdam price assessment represents the spot value of physically traded, standard-grade cobalt metal in warehouses in Rotterdam.</p>

Publication of information relating to commodity benchmark	Fastmarkets benchmark information and related calculations and assessment processes are published on Fastmarkets' relevant websites and platforms in the form of pricing rationales, trade logs and market commentaries, and the related methodologies are publicly available on the FBA webpage. (This includes the information Fastmarkets is required to publish under Paragraph 7 of Annex II.)
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Updates

This Benchmark Statement is published in accordance with Article 27 of the BMR. FBA will review it at least every two years and update it at any point if and when the information contained in the statement ceases to be correct or sufficiently precise, and including in any event in the following cases:

- (a) whenever there is a change in the type of the benchmark;
- (b) whenever there is a material change in the methodology used for determining the benchmark.

About Fastmarkets

Fastmarkets is a leading commodity price reporting agency (PRA) covering the metals, mining, minerals, forest products and agriculture industries. It groups together a number of legacy brands including Fastmarkets MB, AMM, RISI, FOEX, Random Lengths, AgriCensus and The Jacobsen. For more than 100 years, it has provided assessments and indices of commodity prices as well as news, research and commentary on the underlying markets to enable trading in the markets in which it operates.

Its mission is to meet the market's data requirements honestly and independently, acting with integrity and care to ensure that the trust and confidence placed in the reliability of its pricing methodologies is maintained. It does not have a vested interest in the markets on which it reports.

Contact us

For more information, including methodology please visit <https://www.fastmarkets.com/benchmark-admin> or contact us at info@fastmarketsbenchmarkadmin.com.