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ASSESSING PRICES FOR FLAKE GRAPHITE & SPHERICAL GRAPHITE

INTRODUCTION

Benchmark strives to create methodologies that accurately reflect the market dynamics of the industries we cover and allow for independent data collection, free of distortion or misrepresentation.

In the graphite market, we have identified 14 grades that reflect the existing balance of trade and production in the market, a list of which are included in this document (see pg 5).

PROCESS

Benchmark price assessments are collected by polling a cross-section of active market participants. Our team of analysts verify and substantiate this information through a range of primary and secondary sources.

This information is reviewed in monthly meetings,

during which our analysts collate all data received and agree on an independent range (high and low) for prices reflective of prevailing market trends.

The information received is weighted according to volume, grade, and the credibility of the information source in order for our analysts to set a price range reflective of the majority of material traded each month.

Where a single price point is published, it will reflect the mid-point of the high and low range, unless otherwise stated.

Data published at the beginning of each calendar month relates to transactions from the previous month.

As the markets we cover are not exchange traded, all pricing data we receive is acquired privately from the market and logged internally.

Benchmark analysts continually seek to increase our pool of price points (contacts). Although the number of contacts for any one price point can vary, the insight and experience of our analysts ensure that all data published can be authenticated and supported by market intelligence.

If at any time the number of contacts for any one grade falls to a point where data cannot be sufficiently verified, the grade is reviewed by the supervising editor.

Due to the rigid nature of the markets we monitor, price ranges are set on a monthly basis in order to allow for a sufficient number of trades to be completed to reflect a consistent market trend.

COMPLIANCE & CONFIDENTIALITY

COMPLIANCE

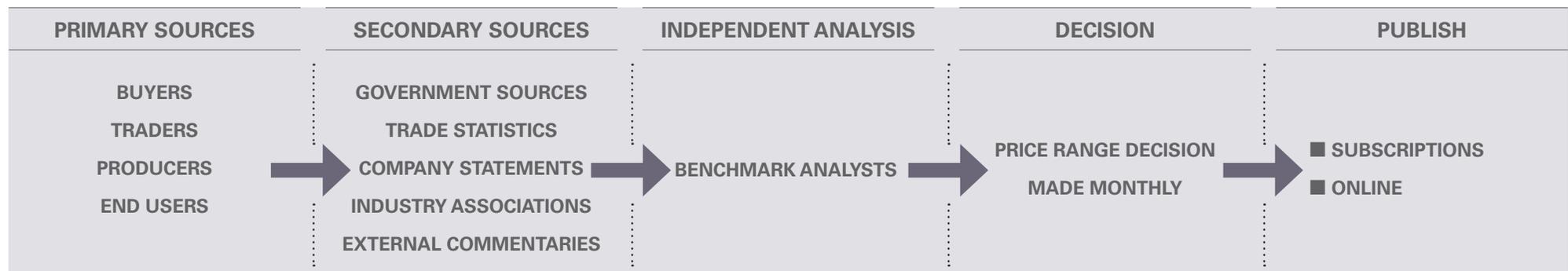
All Benchmark analysts are obligated to sign a code of conduct upon employment in relation to data collection and assessment, to ensure independence and credibility.

CONFIDENTIALITY

As with all non-exchange traded raw material markets, deals are conducted privately between buyers and sellers.

As such, we treat the confidentiality of all our contacts and data with the utmost seriousness and is subject to Chinese walls within the company in addition to complete confidentiality outside of the company.

PRICE COLLECTION FLOWCHART



TESTING OUR PRICE INTEGRITY

SOURCE TESTS

All information received during our data collection process is weighted upon the credibility of the information source.

Benchmark therefore judges the validity of the information received based upon:

- Proximity – the position of the source within the industry and in relation to the transaction being discussed
- Vested interest – the motivation of the source in discussing the information
- Track record – the previous reliability of information obtained from the source
- Date received – when the information was shared in relation to the date of publishing

COMPARATIVE METRICS

Often, the nature of surrounding markets can be used as a point of reference for contract negotiations between buyer and seller. Subsequently these data points are employed as comparative metrics in measuring the state of the market in question. Comparative metrics include:

- Comparison to the price of the same product in another area of the market
- Comparison to a slightly different specification product in the same area of the market
- Comparison to transactions completed for the same product in another relevant time period
- Comparison to the material's feedstock or primary derived product(s)
- Comparison to transactions for different volumes or trade routes

THE GRAPHITE GRADES WE COLLECT PRICES ON

GRAPHITE GRADES

Benchmark tracks 14 flake graphite and value-added grades which reflect the bulk of traded material in the market. We categorise the grades primarily by end use/where it is consumed. These grades are:

FLAKE CONCENTRATE

Flake, 90-93% C, -100 mesh, FOB China
 Flake, 90-93% C, +100 mesh, FOB China
 Flake, 90-93% C, +80 mesh, FOB China
 Flake, 94-95% C, -100 mesh, FOB China
 Flake, 94-95% C, +100 mesh, FOB China
 Flake, 94-95% C, +80 mesh, FOB China
 Flake, 94-95% C, +50 mesh, FOB China
 Flake, 96-97% C, -100 mesh, FOB China
 Flake, 96-97% C, +100 mesh, FOB China
 Flake, 96-97% C, +80 mesh, FOB China
 Flake, 96-97% C, +50 mesh, FOB China

VALUE-ADDED

Spherical uncoated, 99.95% C, 10 microns, FOB China
 Spherical uncoated, 99.95% C, 15 microns, FOB China
 Spherical uncoated, 99.95% C, 20 microns, FOB China

BMI GRAPHITE INDEX

GRAPHITE PRICE INDEX

The Benchmark Mineral Intelligence Graphite Index (BMI Graphite Index) is a pricing index which tracks the monthly performance of flake graphite against a base of January 2006.

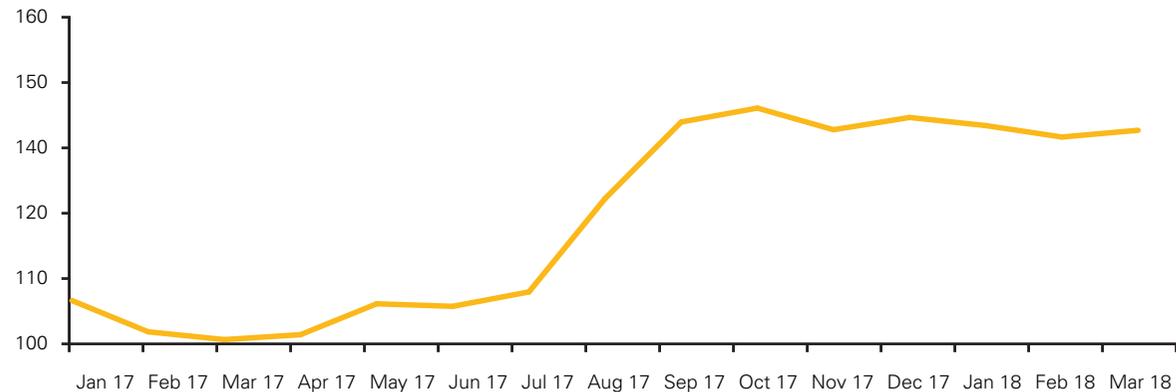
The index is calculated using a weighted average of a number of price we publish, intended to reflect the distribution of trade in the market.

Weightings have been assigned according to the distribution of production across flake graphite mesh sizes.

For mesh sizes we track that have multiple purity levels, weightings are distributed equally across the grades used in our sample.

BMI GRAPHITE INDEX

Published monthly in Benchmark's Graphite Price Assessment



HOW IS GRAPHITE TRADED?

GRAPHITE TRADING

In 2017, flake graphite production totalled around 650,000 tonnes. These contracts were, and continue to be, negotiated privately between buyer and seller.

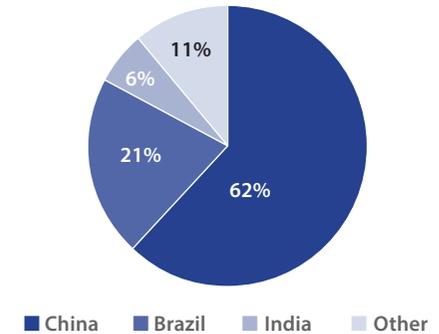
Traditionally, volumes are traded in long-term (≥ 6 month) contracts and as a result relatively small quantities are sold on short term transactions. There is no spot market for graphite, no futures market and nor is it exchange traded.

Subsequently, all market data Benchmark obtains is done so confidentially and we set minimum transaction categories to avoid misleading outliers being included in our price ranges.

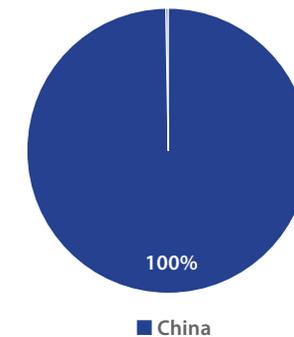
We also weight the information we receive to give more weight to transactions of over 1,000 tonnes.

These transactions within the trade routes identified for our published graphite grades (below) are estimated to account for over 75% of the market.

Flake graphite



Natural spherical graphite



WHERE DO WE PUBLISH OUR GRAPHITE PRICES ASSESSMENTS?

PUBLISHING

Benchmark's graphite price data is distributed primarily through the Benchmark Graphite Price Assessment subscription, however with prior approval some data and information included in this service may also be published in:

- Contracts
- Market consultancy and industry reports
- News articles
- Company financial statements

SUBSCRIPTION:

The Benchmark Graphite Price Assessment is a dedicated subscription service which includes:

- Independent market analysis
- Monthly market reviews
- Online price database
- Global production statistics

To subscribe, please contact
Andrew Miller – amiller@benchmarkminerals.com



		<h2>Graphite</h2> <p>Shandong producers highlight supply concerns</p>
<p>Contents:</p> <p>Market review.....2</p> <p>Prices.....3</p> <p>Supply.....4</p> <p>Demand.....5</p> <p>Company Data.....7</p>	<ul style="list-style-type: none"> ■ Shandong producers seek to increase prices off the back of prospective supply restrictions approaching the SCO summit in June; quotations up by \$200/tonne in some cases ■ Higher-purity prices gain momentum post Spring Festival with marginal price increases reported; domestic prices for finer mesh grades see marginal decreases ■ Spherical graphite exports to Japan, South Korea reach record highs as synthetic costs weigh heavy on anode producers' margins ■ Japan's EV battery sales reach record highs in January as market momentum grows; China's NEV production up >200% in January and February (yoy) ■ Ramp ups continue at new African mines and North American developers target small-scale concentrate production for H2 	<p>www.benchmarkminerals.com</p>
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OUR ETHICS & COMPLIANCE POLICY

ETHICS AND COMPLIANCE

Benchmark operates according to publishing best practices and has a strict ethics policy which applies to all editorial employees.

In order to provide the highest quality information available to our subscribers, editorial employees are not permitted to trade any of the materials we cover and strict policies are in place to document and archive information received which is relevant to our published data.

Furthermore, staff are not permitted to invest in related stocks and have guidelines for interacting with industry sources and accepting gifts

CORRECTIONS:

If any published data is later found to be inaccurate or incorrect, the market will be immediately notified by an email alert. A correction will be published in the following edition of the monthly market report which will be distributed via email and published on Benchmark's web site.

The correction will also be updated in our online databases.