

Shanghai Metals Market Price Assessment Methodology of Zinc concentrate (Zn 50%) treatment charge (TC) in Sichuan

1. General Principles of SMM Price Methodology

Shanghai Metals Market (“SMM”) is an independent service provider that does not participate in trades. SMM is a market observer that engages buyers and sellers in the commodities market. SMM continuously develops, reviews and revises its methodology by communicating with industry insiders, using the most common product specifications, terms of trade in the industry. SMM attaches equal importance to normal transactions that meet the specifications and standards. SMM reserves the right to exclude from its price assessment any price data information deemed to be less reliable or unrepresentative.

SMM publishes spot metals prices (or indices, etc., including markets in China or outside of China) on a daily basis, commonly referred to as SMM prices. SMM has formulated corresponding methodologies for the published SMM prices, which have been published on SMM's official website www.smm.cn for reference. The methods and procedures for the formation and release of SMM prices are specified in these methodologies, and SMM prices are formed and released in strict accordance with the regulations of these methodologies.

In order to conform to the actual situation of the spot market, SMM will make necessary revisions to the SMM price methodology, and will announce it on the SMM official website www.smm.cn 28 days prior to the official implementation, unless there are special circumstances, especially force majeure (natural disasters, wars, bankruptcy of exchanges, etc.) that lead to shorter notice periods. If you have any questions or suggestions about the SMM price and its methodology, please contact the SMM customer service staff (please check the contact information on the SMM official website www.smm.cn). **Please read this paragraph in conjunction with the SMM Methodology Review and Change Policy, and the SMM Complaint Policy.**

This document specifies the standards and management methods for the SMM Zinc concentrate (Zn 50%) treatment charge (TC) in Sichuan. The purpose of this standard is to establish a transparent and verifiable SMM price setting mechanism and provide market participants with an important pricing indicator.

SMM Benchmark Administration Committee will review the methodology as well as the assessment and publication process. The Committee maintains oversight of the SMM Benchmark methodology and its compilation process, ensuring that SMM prices and indexes reflect as closely as possible the objective conditions of physical markets

of relevant commodities. The Committee will immediately point out any problem it finds, and propose external consultations and modifications to the existing methodologies or processes, in order to improve the quality of prices or indices published by SMM. The Committee can only propose changes to the methodologies and processes used in future Benchmark assessments, rather than modifying the already published prices or indexes.

2. SMM Price Formation of Zinc concentrate (Zn 50%) treatment charge (TC) in Sichuan

2.1 Definition

The SMM Zinc concentrate (Zn 50%) TC in Sichuan is assessed and reported based on the methodology defined in this document. As a benchmark, it can be referred to by both parties of zinc concentrate spot transaction as their settlement price. The price reflects the indicative range of the actual transaction price when zinc concentrate TC in Sichuan is released every week. The price is mainly based on the supply and demand of zinc concentrate in China that week, and is on a delivery to factory basis.

2.2 Introduction of price assessment

SMM collects data information used to evaluate zinc concentrate TC by means of standard acquisition (that is, the collection of raw data information that complies with the SMM Data Standards), from including the bid and offer of the buyer and seller that were not traded on the same weekly, and the actually traded price of spot transaction provided by the price submitters. The amount of each transaction or quotations that can be deemed as the standard zinc concentrate TC should be no less than 100 mt in zinc content. Data collection, assessment (calculation) and daily management of SMM zinc concentrate TC are conducted by the SMM zinc business team, which consists of 2 price analysts (A and B) and a price manager.

The price published by SMM is intended to reflect the real transactable value of a commodity in a time point or period during the day. TCs vary for zinc concentrates of different grades. Even if the zinc concentrate actually traded by the submitters is not the standard zinc concentrate (Zn 50%), we will include it in the reference, and such TC will be assessed after being converted in a method that is commonly used in the market. During the assessment process, we may consider other information. However, actual transactions, bids and offers will always take precedence. Please read this paragraph with the SMM Benchmark Guidelines on Hierarchy of Data Inputs.

2.3 Source of raw price data

2.3.1 Collecting from price data submitters

Please note that the following standards and procedures need to be read together with **Submitter Exclusion or Inclusion policy**.

2.3.1.1 Criteria for price data submitters

SMM will select representative market participants from the industry chain as targeted price submitters for SMM zinc concentrate TC in Sichuan assessment (data providers, including mines, traders and smelters in Sichuan).

SMM will take all reasonable measures to determine and verify the authenticity and reliability of each price contributor. The procedure SMM adopts is designed to minimise the risk of using any abnormal price data and oppose any manipulation of the Benchmark.

The SMM policy includes, but is not limited to, steps to take as follows:

- Collect relevant public domain documents (such as business licenses) for each price submitter and verify the authenticity of the documents.
- Ensure that each price submitter engages in the transaction, procurement, sales or production of local zinc concentrate industry chain.

SMM will ensure that each employee who is designated as the contact of the contributor has the right to directly access the relevant data in the company, and has the necessary authority and capability to submit the data to the price analyst of SMM in a timely manner.

SMM will validate the reputation of each contributor by communicating with other reputable market participants.

2.3.1.1.1 Criteria for zinc concentrate producers

- a. • Zinc concentrate producers should have production capacity of above 500 mt in zinc content on an annualised basis; conduct standardised transactions smoothly across channels with stable sales performance; possess operational integrity, and enjoy good reputation in the market, in the view of SMM.
- b. • They should provide objective and honest feedback on their zinc concentrate production and sales, including output, operating rate, quality of the product, sales price, sales volume, buyers and inventory, and be able to engage with SMM price analysts.
- c. • They should have a sound understanding of and insight into the macro economy, current status of zinc industry chain and zinc concentrate market, and be able to engage with SMM price analysts.

2.3.1.1.2 Criteria for traders

- a. • Traders should have over two years of experience in zinc concentrate spot trading with an annual purchasing or sales volume of above 1,000 mt in zinc

content; conduct standardised transactions smoothly across channels with stable purchasing and sales performance; possess operation integrity, influence and good reputation in the market.

- b. • They should provide objective and honest feedback on their zinc concentrate procurement and sales, including quality of the product, sales price, sales volume, source of purchase, buyer and inventory, and be able to engage with SMM price analysts.
- c. • They should have a sound understanding of and insight into the macro economy, current status of zinc industry chain and zinc concentrate market, and be able to engage with SMM price analysts.

2.3.1.1.3 Criteria for zinc smelters

- a. • Smelters should have zinc concentrate purchasing capacity of above 1,000 mt in zinc content on an annualised basis; conduct standardised transactions smoothly across channels with stable sales performance; possess operational integrity, and enjoy good reputation in the market, in the view of SMM.
- b. • They should provide objective and honest feedback on their zinc concentrate procurement, including quality of the product, purchase price, purchase volume, source of purchase, and inventory, and be able to engage with SMM price analysts.
- c. • They should have a sound understanding of and insight into the macro economy, current status of zinc industry chain and zinc concentrate market, and be able to engage with SMM price analysts.

2.3.1.2 Formation and adjustment of the price submitter list

SMM selects price contributing companies based on the above criteria to produce a stable list. SMM signs a formal agreement with each price contributing company to ensure the accuracy and timeliness of the data provided as well as protect confidential information of the price submitter. At the same time, SMM will protect the corporate secrets of the contributors. SMM arranges a full-time price analyst to collect the information, and communicates regarding the market situation related to price information. SMM will continuously evaluate each contributor according to the above criteria, and adjust the list of contributors based on the evaluation results. For contributors whose evaluation results do not meet the above standards, SMM will notify them to rectify within a time limit and exclude them from the list for the time being. If the contributor refuses to rectify or does not meet the standard after rectification within 30 days after the rectification notice is issued, SMM will terminate its qualification as a contributor.

The updated list of submitters of SMM zinc concentrate TCs is as follows:

Company type	Company Name
Smelter	Sihuan Zinc Germanium Technology Co., Ltd
Smelting	Sichuan Hongda Co., Ltd.
Mine	Sichuan Huidong Daliang Mining Co., Ltd
Mine	Sichuan Xinyuan Mining Co., Ltd
Mine	Huidong County Chenhui Mining Development Co., Ltd
Mine	Sichuan Huili Zinc&Plumbum Co., Ltd

Notes: These companies are in no particular order. SMM will amend the list based on the selection criteria in this document.

Data providers will not receive incentives, rewards or benefits from SMM for providing data.

2.3.1.3 Process of price data collection

In accordance with the agreement with price submitters, SMM price analysts will collect zinc concentrate TCs from price submitters by means of phone, QQ, WeChat, fax, email and other forms of communication before 17:00 China Standard Time (“CST”) each Friday. (Price data that are submitted after 17:00 CST on each Friday will not be included in price assessment on the day). The data will include traded prices within the week, and the most likely traded prices, bids and offers. All communication content on instant messengers, WeChat messaging and emails as well as face-to-face communication will be recorded, while phone communication via phone calls will also be recorded in summary and input into the database. Price data must be a typical, repeatable transaction between unaffiliated market participants (completely financially and legally independent).

SMM’s Operational Teams shall abide by business ethics while reporting to their manager about any threat by market participants or any offer and bid that could undermine or influence the assessment during the price collection process.

Price data provided by the submitters to SMM should include at least the following kinds of information. SMM analysts should encourage the price submitter to report as much detailed information as possible, not just the minimum requirements specified:

Zinc concentrate specifications

Zn 50%

Volume

The minimum transaction size is set at 100 mt in zinc content.

2.3.2 Collecting price data from other submitters

SMM's policy on collecting market information and data is that SMM welcomes all information from various sources or organizations, as long as the data submitter provides them for good faith and authentic purposes. However, the data submitter is required to accept the SMM code of conduct on data submitters. SMM does not accept instant messaging requests from unidentified individuals. SMM price analysts are required to confirm the identity of market participants at least in accordance with the procedures specified in 2.3.1.1 before conducting instant messaging communication with the data submitter.

2.4 Detailed formation process and related regulations

2.4.1 Data collection

SMM price analysts will collect price data and information based on the standards mentioned above. And a preliminary raw dataset is finally generated after taking into account major factors, such as offer levels situations in the spot markets, macroeconomics, market transactions, supply and demand, inventory levels, and other major political, economic, and natural factors.

2.4.2 Data normalisation

SMM price analysts will normalise the preliminary data results in the event of different zinc concentrate grades.

A deduction of 20 yuan/mt with zinc content will be used in the excess or deficiency content based on a benchmark grade of 50%. TCs will be lowered by 20 yuan/mt with zinc content for every 1% increase in the grade, and TCs will be lowered by 20 yuan/mt with zinc content for every 1% decline in the grade.

The final TCs will be in the form of a range and quoted against standard Zn 50% zinc concentrate in Sichuan.

The price data will be recorded both electronically and in writing. All electronic and written records are archived by analysts and kept at least five years in a secure network environment and physical environment. For more details, please refer to the

SMM Recordkeeping Policy.

2.4.3 Information data analysis, verification and screening

SMM will always endeavor to confirm deals information with related parties. SMM will endeavour to verify all the market data obtained by the buyer/seller with the counterparty of the buyer/seller. SMM will perform multi-party verification on information provided by the buyers/sellers with their counterparties, and will cross-validate with other relevant participants if the buyers and sellers are unable or unwilling to provide the information.

SMM will exclude any questionable, irreproducible or apparently abnormal quote and transaction in the price evaluation process, and note the reason for removal in the original data set, which will also be kept at least five years. For instance, SMM ensures that only transactions and quotes made between financially and legally independent parties will be included in the price evaluation process. SMM price analysts will compare and analyse data submitted by SMM price submitters, verifying whether the prices show trends that run counter to the wider market. The cases include but are not limited to:

- Traded prices are significantly higher due to the inclusion of special circumstances or special services
- A company's quotes are intentionally higher due to a special sales plan or policy of the company
- A company's bids reflect its prospects for the market price and is intentionally made public in advance

If any unusual submissions are found, SMM Index analysts need to investigate them. The SMM index analysts will re-contact the price submitter to verify the accuracy, applicability and completeness of the submitted data. If it is confirmed that it is due to an error in the submission process, such as an input error, etc., SMM will correct the error and re-validate and screen. If there is no error in the submission process, it can be concluded that the data submitted by the price submitter is not a qualified data and needs to be removed from the original data set.

The finalised price assessment is in the form of a range of TCs.

Minimal subjective judgment from analysts is required in the SMM price evaluation process. The established standards and procedures will be applied to manage the actions taken by SMM price analysts in screening the collected data, and to evaluate the data included in the price assessment is valid or if the abnormal data has been excluded. **SMM price analysts, based on their experience in the zinc concentrate trading market, will ensure that only data that meets clear methodological**

requirements is included in the price evaluation process. In case of disagreement between two parties of the zinc concentrate transaction, after screening the original data set and removing disqualified data, SMM price analysts will make adjustments to the normalised data or the price assessment. The SMM Benchmark Management Committee regularly reviews the implementation of these procedures to ensure compliance with its published standards. To attain the highest possible standards, SMM price analysts are trained and regularly appraised in their respective markets in which they are responsible for assessing prices. This ensures that SMM price analysts follow the requirements of the methodology in a consistent manner.

2.4.4 Calculation of published index

On every Friday, SMM price analysts will fine-tune the adjustment direction and range based on their industry experience, supply and demand, and finally released the range of Zn 50% zinc concentrate TCs in Yunnan based on SMM research and adjustments as final results.

After years of tracking and gathering feedback, SMM applies a price-range strategy in assessing zinc concentrate TCs as other strategies have proven unreliable. For example, a tonnage weighted calculation will be easily affected by traded price and volumes. As trading volumes are unpredictable, the accuracy of price assessments can be affected by a few regions that account for the majority of market share when the trading volumes in those regions are overly large. The absence of trades resulting from contentious opinions between the parties can also lead to failures in price assessment.

2.4.5 Special circumstances

SMM reserves the right to exercise judgments when trading liquidity is thin. We will make the assessments based supply-demand relationships, bids and offers of market participants, if there is a lack of credible or verifiable market information, so as to make sure that the data samples used to evaluate the zinc concentrate TCs are sufficient and accurate. **For more details, please refer to the SMM Illiquid Market Management Policy and SMM Expert Judgment Policy.**

In addition, SMM will also make a price assessment when there is an absence or a lack of trades in the spot week. In these two cases, information of actual demand and supply, offers and bids will also be taken into consideration.

SMM will not set the minimum data in the zinc concentrate TCs assessment as sparse deals are sometimes heard in the market.

2.4.6 Price publication

The SMM Zn 50% zinc concentrate TCs assessment for Sichuan is published every Friday (except for public holidays, in which case, the price will be released ahead of the holiday) on Chinese website www.smm.cn.

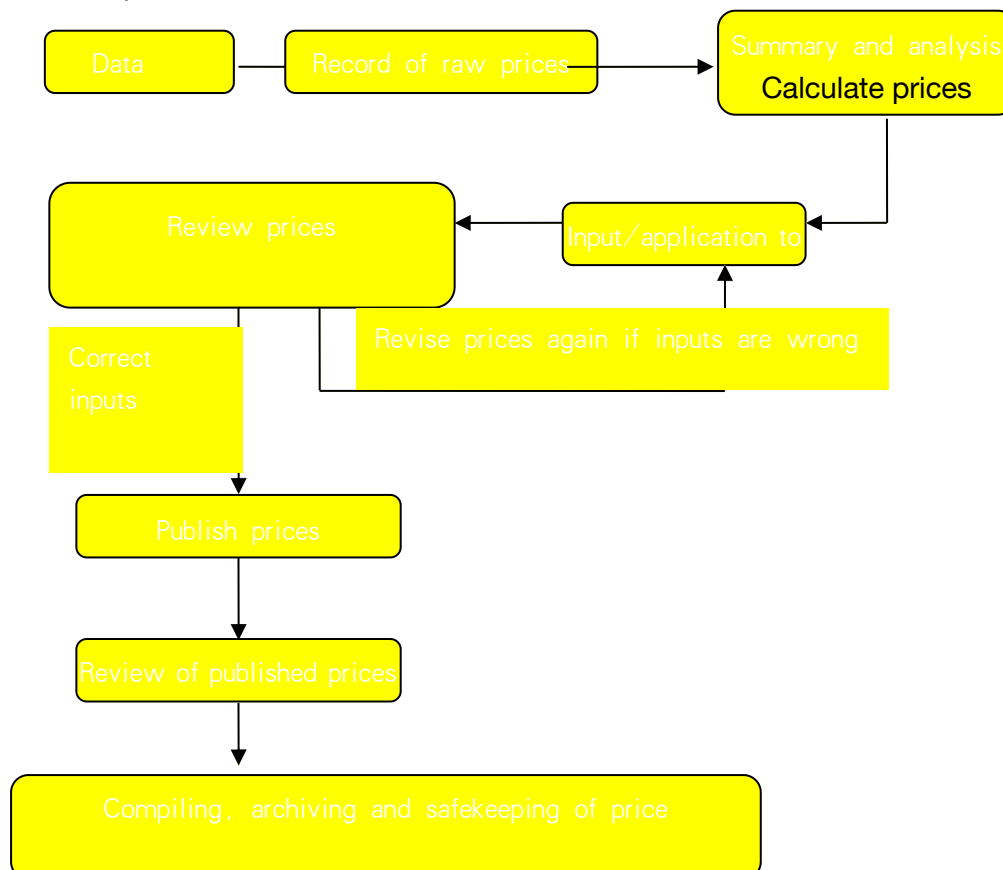
The deadline for price collection is before 17:00 CST every Friday, and the 30–60 minutes thereafter is used to verify and calculate the final zinc concentrate TCs. The time of the price publication may also be affected by emergencies and force majeure factors, such as power outages and natural disasters. In such cases, SMM will make every effort to inform the market of the delayed publication schedule as soon as possible. **For more details, please refer to the SMM Disaster Recovery Procedures.**

2.4.7 Modification of published prices

If there are any errors (mistake in calculation or errors caused by incorrect operations) after the price is published, SMM will immediately issue a correction statement to reflect the correct price. **For more details, please refer to the SMM Error Correction Policy.**

2.5 Price assessment process

SMM undertakes the Zinc concentrate TCs before 17:00 CST every Friday. The detailed process is as follows:



2.6 Adjustment to the price assessment methodology

SMM updates our methodologies on a regular basis to reflect a constantly

changing metals trading market. Amendments will be made based on feedback by market participants, and an internal check will be also made regularly. We will follow the external consultation workflow to amend discrepancies in the methodology that may be less time-sensitive. Major revisions and updates will be published 28 days ahead of the changes, to seek opinions from market participants, unless there are unavoidable and unpreventable circumstances such as natural disasters, war or bankruptcy of the exchange, which will shorten the period. SMM promises to carefully look into any feedback to the adjustment of the price methodologies, and will amend the methodologies under certain circumstances even if some market participants do not approve of the changes. In addition, SMM has a formal methodology consultation process. SMM promises to arrange an official consultation of Zinc concentrate treatment charge (TC) at least once a year. Dates of the most recent and the next session are at the start of this document. **For more details, please refer to the SMM Methodology Review and changes Policy.**

3. Historical data

This paragraph should be read in conjunction with the SMM Record Retention Policy.

SMM's zinc concentrate TCs in Sichuan have been recorded since April 10, 2015. Subscribers of SMM are able to access historical data from past three years.

For information on subscribing to historical price data, please visit www.smm.cn.

4. Compliance with SMM Policies

All SMM employees must comply with the methodologies published by SMM, as well as follow SMM's internal standards and policies. They include the SMM Conflict of Interest Policy, SMM Whistleblowing Policy, SMM Error Correction Policy, SMM Methodology Review, Consultation and Modification Policy, and SMM Complaint Policy.