

Shanghai Metals Market Price Assessment Methodology

SMM secondary refined lead price

1. Guidelines to SMM price assessment 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. By consulting with industry independent participants, SMM drafts the methodology, examines and revises it regularly based on the specifications and terms of trade that are generally used in the market, with equal weighting given to transactions that meet the standards. SMM reserves the right to exclude any unreliable or unrepresentative price data from its price assessment, in line with this methodology and other related Benchmark governance policies and procedures. SMM believes the processes and procedures documented in their Methodologies represent the most accurate way of representing the underlying economic reality of the markets each Benchmark seeks to measure.

SMM price assessments refer to metals spot prices or price indices of both the Chinese and overseas markets reported by SMM on a daily basis. All SMM prices are published according to a set of defined methodologies, indicating how the prices are accessed and reported. These methodologies are published on our website www.metal.com (English) or www.smm.cn (Chinese) or for all market participants to understand and refer to.

To reflect the actual trades in the spot market, SMM will update the methodology for SMM price assessments and publish all the revisions on our website www.metal.com (English) or www.smm.cn (Chinese) 28 days ahead of the changes. For queries or suggestions on the methodology, please contact SMM customer services (please find contact information on the SMM official websites). **Please read this paragraph in conjunction with the SMM methodology review and changes policy, and the SMM Complaint Policy available at www.metal.com (English) or www.smm.cn (Chinese).**

This document specifies the standards and management methods for the SMM secondary refined lead spot price assessment. These standards are formulated to establish a transparent and verifiable SMM price setting mechanism and provide market participants with an important pricing indicator.

2. Guidelines to SMM secondary refined lead spot prices

2.1. Definition

2.1 Definition

The SMM secondary refined lead spot price is assessed and reported based on the methodology defined in this document. As a benchmark, it can be referred to by both parties of secondary refined lead spot transaction as their settlement price. The prices are an indicative price range for actual spot transactions.

2.2 Introduction of price assessment

SMM quotes of secondary refined lead = $20\% \times \text{actual traded price of secondary refined lead on the prior day} + 30\% \times \text{SMM \#1 lead price on the spot day} + 50\% \times \text{expected quotes from price submitters on the spot day}$.

Based on the expected quotes of secondary refined lead provided by price submitters on the spot day, SMM finalises the SMM secondary refined lead price, referring to SMM #1 lead price for the same day and traded prices of secondary refined lead on the prior day. (The weight ratio is shown in the above formula) SMM collects data information used to evaluate the spot price of secondary refined lead by means of standard acquisition (that is, the collection of raw data information that complies with the SMM Data Standards Policy), from certain price submitters. Collected data include the bids and offers from the buyer and seller that were not traded on the same day, the actually traded price of spot transaction as well as expected quotes or price changes provided by the price submitters. Data collection, assessment (calculation) and daily management of SMM secondary refined lead spot prices are conducted by SMM lead ingot operational team (consists of 2 price analysts and a price manager).

2.3 Source of raw price data

2.3.1 Collecting from price data submitters

The SMM secondary refined lead price reflects the most tradable levels of spot lead ingot prices of the trading day. Price submitters are relatively fixed market participants, including smelters, traders, processors, etc. SMM will also take into account the spot market, futures market, macroeconomic dynamics, corporate information, industrial fundamentals, and other major factors (politics, economy, nature, etc.) when assessing the SMM price. Please read this paragraph **with the SMM Benchmark Guidelines on Hierarchy of Data Inputs available at www.metal.com (English) or www.smm.cn (Chinese).**

2.3.2 Data normalization

SMM price analysts will normalize the preliminary data results, and the finalized prices (at least five valid prices) will be in the form of a traded or the most likely traded price range.

The price data will be recorded both electronically and in writing. All electronic and written records are archived by analysts and kept in a secure network environment and physical environment. For more details, please refer to **the SMM Recordkeeping Policy available at www.metal.com (English) or www.smm.cn (Chinese).**

2.3.3 Information data analysis, verification and screening

SMM will always do its best to confirm bids, offers and deals information with related parties. 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 analyze 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

SMM analysts will investigate into the data submitted once any abnormal condition is detected. They will contact the price submitter to verify the accuracy, applicability and completeness of the data. If it is confirmed that errors, such as input errors, are made in the submission process, SMM price analysts will correct the error and conduct verification and screening. If no mistakes are found in the data submission process, it could be concluded that the data submitted is disqualified and has to be removed from the original data set. The finalized price assessment is in the form of a price range in discounts or premiums.

The final dataset decided by SMM is in the form of an absolute price range. 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. **For more details, please refer to the SMM Guidelines for the Exercise of Expert Judgment available at www.metal.com (English) or www.smm.cn (English)**

The experience of SMM price analysts in the lead ingot trading market is to ensure that only data that meets clear methodological requirements can be

included in the price evaluation process. After screening the original data set and removing disqualified data, SMM price analysts will not have any Subjective judgment about the normalized data or the price assessments.

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 appreciated in their respective markets in which they are responsible for assessing prices. This ensures that SMM analysts follow the requirements of the methodology in a consistent manner.

2.3.4 Special circumstances

SMM reserves the right to exercise judgments when trading liquidity is thin. We will make the assessments based on the economy, relationships between products, transportation and forward market if there is a lack of credible or verifiable market information, so as to make sure that the Data samples used to evaluate the spot prices are sufficient and accurate. **For more details, please refer to the SMM Illiquid Market Management Policy and SMM Expert Judgment Policy available at www.metal.com (English) or www.smm.cn (Chinese).**

In addition, SMM will also make a price assessment when there is only one offer or bid, or when the price difference between offers and bids is too big to assess a tradable price. In these two cases, information of spread trade and mainstream market relationships will also be taken into consideration. SMM will set the assessed price between the highest bid and the lowest offer if information on the offers and bids manage to meet all other requirements set in this assessment methodology. SMM will not set the minimum data in the secondary refined lead price assessment as sparse deals are sometimes heard in the market.

2.4 Source of raw price data

2.4.1 Criteria for price data submitters

SMM will select representative and active market participants from the industry chain as targeted price submitters for SMM price assessment. 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.

SMM delegates specific price analysts to collect transaction data and data related market information from price submitters. SMM will continue to evaluate every price submitter based on criteria above and make amendments to the lists for price contributing companies based on the results of evaluations. When a company fails to meet the criteria, it would be required to rectify within a limited period. If it refuses to rectify or fails to meet the criteria after within 30 days from the date of issue of the rectification notice, SMM will revoke its qualification for price contributing companies.

2.4.2 Criteria for smelters

- Smelters should have operated for over two consecutive years; conduct standardized transactions smoothly across channels with stable sales performance; possess operational integrity, and enjoy good reputation in the market, in the view of SMM.
- Production scale: lead-acid battery scrap pretreatment capacity should be above 100,000 mt/year, and the scale of pretreatment-smelting secondary lead projects should be above 60,000 mt/year. Those between 30,000 mt (including 30,000 mt)-60,000 mt should be strictly controlled.
- The quality of the lead ingots shall be stable, in line with the national GB/T21181-2017 standard for secondary lead and lead alloy ingots.
- Smelters should provide objective and honest feedback on their 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.
- Smelters should have a sound understanding of and insight into the macro economy, spot market situation and trades of the secondary refined lead market, and be able to engage with SMM price analysts.

2.4.3 Criteria for downstream users

- Downstream users, mainly lead-acid battery producers, should have operated for over two consecutive years; conduct standardized transactions smoothly across channels with stable purchasing performance; possess operation integrity, influence and reputation in the market.
- Production scale: The monthly purchase volume of lead ingots shall be basically 2,000 mt, and the annual production capacity shall exceed 500,000 KVAH.
- Traders should provide objective and honest feedback on their lead ingot procurement and sales, including quality of the product, prices and volumes for purchase and sales, sources of procurement, buyers, and inventory, and be able to engage with SMM price analysts.
- Traders should have a sound understanding of and insight of the macroeconomics, status quo and trading of the secondary refined lead market, and be able to engage with SMM price analysts.

List of SMM secondary refined lead spot price contributing companies (in no particular order):

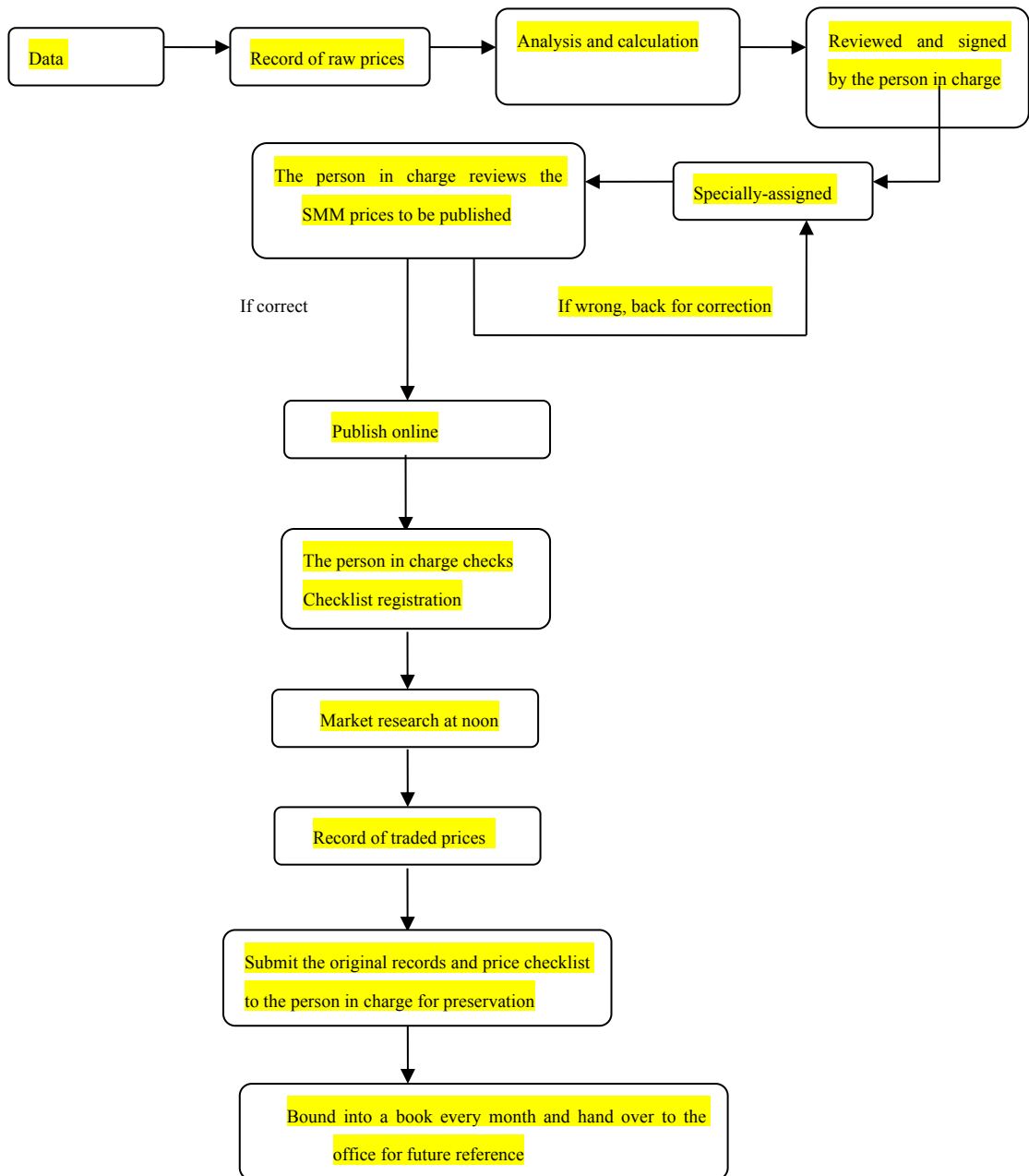
Type of enterprise	Company
Smelter	Anhui Huaxin Lead Industry Group
Smelter	Anhui Huabo Renewable Resources Technology Co., Ltd.
Smelter	Taihe Dahua Energy Technology Co., Ltd.

Smelter	Anhui Chaowei Environmental Protection Technology
Smelter	Jiangsu New Chunxing Recycling Co., Ltd.
Smelter	Anxin Chentai Nonferrous Metals Smelting Co., Ltd.
Smelter	Hebei Songhe Renewable Resources Co., Ltd.
Smelter	Yingde Xinyu Nonferrous Metals Recycle Resource Product Co., Ltd.
Smelter	Guangdong Xinsheng Environmental Technology Co., Ltd.
Smelter	Henan Yuguang Gold and Lead Co., Ltd.
Smelter	Hubei Jinyang Metallurgical Incorporated Co., Ltd.
Smelter	Zhejiang Tianneng Power Supply Material Co., Ltd.
Smelter	Tianjin Toho Lead Recycling Co., Ltd.
Smelter	Hubei Chukai Metallurgical Co., Ltd.
Smelter	Jiyuan Juxin Resources Comprehensive Utilization Co., Ltd.
Smelter	Yunnan Zhenxing Group Resource Utilization Co., Ltd.
Smelter	Rugao Tianpeng Metallurgy Co., Ltd.
Smelter	Zhongqing Environmental Protection Technology
Smelter	Shanxi Yichen Environmental Protection Technology Co., Ltd.
Smelter	Guangdong Yingde Hongxing Nonferrous Metal Renewable Resources Utilization Co., Ltd.
Smelter	Hubei Xinzi Renewable Technology Co., Ltd.

Note: The list is 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.

2.5 Process of data collection

SMM's Operational Teams will collect secondary refined lead spot price data from price submitters by means of phone, fax, email, QQ, WeChat and other forms of communication between 9:40 -10:30 China Standard Time ("CST") on every trading day. (Price data that are submitted after 10:30 CST will not be included in price assessment on the day, while data that does not contain the required minimum information details will not be included either, even if the data are submitted before the deadline) The data will include traded prices within the day, and the most likely traded prices. 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).



2.6. Products

2.6.1. Product information

Lead content of secondary refined lead: 99.994%, which meets the National Standard Secondary Lead and Lead Alloy Ingots (GB/T 21181-2017)".

2.6.2 Quantity

SMM sets the typical transaction size that reflects market circulation at 30-600 mt.

2.6. 3. Pricing currency and unit

yuan/mt

2.6.4 Price terms

Ex-works prices including VAT (VAT rate is 6.5%). If the government policy changes in the future, SMM will notify the VAT rate change.

2.6.5. Payment method

Cash payment, or other methods as agreed.

2.7. Price publication and historical data

2.7. 1 Price publication

The SMM secondary refined lead spot price assessment is published on the SMM websites at www.metal.com (English) or www.smm.cn (Chinese) at 10:35 CST of each working day, except for weekends and public holidays.

Data will be verified, and calculations will be assessed in the 15 minutes between 10:25 and 10:35 CST before the secondary refined lead spot price is published. SMM encourages not to submit the data information right before the deadline so that the SMM Analysts Have enough time to verify the data before including the data in the price assessment process.

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 available at www.metal.com (English) or www.smm.cn (Chinese).**

Price information published by SMM is available to subscribers of SMM services and is entitled to copyright protection. Without a clear agreement with SMM, no third party may distribute the information or use it for commercial interests.

2.7.2 Form of SMM price

Price range

2.7.3 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.

2.7.4. Historical data

Subscribers of Shanghai Metals Market are able to access historical data of the price assessments since January 1, 2009. For information on subscribing to

historical price data Please visit www.metal.com (English) or www.smm.cn (Chinese). **For more details, please refer to the SMM Recordkeeping Policy, available at www.metal.com (English) or www.smm.cn (Chinese).**

2.7.5 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.

2.8 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 unpredictable 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. We will arrange an official consultation of the SMM secondary refined lead price assessment 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, available at www.metal.com (English) or www.smm.cn (Chinese).**

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, which 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.