



Global Commodities Holdings Limited Nickel Index Methodology – Version 1a –

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1 Executive Summary

This document is the benchmark statement for the Global Commodities Holdings Limited Physical Nickel Index ('GCHL Nickel Index' or 'the Index'). It outlines the methodology for the calculation of the Index – a reference price for nickel for spot delivery on a CIF basis at the discharge port locations – as listed in the specific TS in USD per metric tonne¹.

With effect from 12 December 2019, the Financial Conduct Authority granted Global Commodities Holdings Limited ('GCHL') permission to carry on the regulated activity of administering benchmarks. Supervised entities in the UK, such as regulated exchanges, may therefore use benchmarks published by GCHL including the GCHL Nickel Index.

The underlying data for the GCHL Nickel Index is derived from trading activity on the GCHL online trading platform, in each of GCHL's Class 1 nickel markets (defined as Nickel Briquettes, Nickel Full Plate Cathodes, Nickel Rounds, Nickel Pellets and Nickel Powder).

The daily GCHL Nickel Index shall be calculated separately for each product listed in the GCHL's Class 1 nickel markets.

The calculation is based on:

1. **Transactions** executed on the platform
2. **Bids and offers** posted on the platform

As the Index is based on transaction, bid and offer data, there is no minimum amount of data required for the determination of the GCHL Nickel Index. If there are no qualifying transactions for any index period, the GCHL Nickel Index will be calculated based on qualifying bids and offers; in the unlikely scenario that there are no qualifying transactions, bids or offers, the GCHL Nickel Index will be unchanged from the last published Index.

The formula is structured in a way that enables transactions to weigh more heavily in the calculation compared to Bids and Offers. This methodology has been adopted because, as stated in the preamble to the UK Benchmarks Regulation², "Any discretion that can be exercised in providing input data creates an opportunity to manipulate a benchmark. ... As a general rule, benchmark administrators should therefore use actual transaction-based data where possible..."

Users of the GCHL Nickel Index should be aware that the Index may become less reliable if there is little activity on GCHL's online commodity trading platform and if the prices of transactions, bids and offers on that platform do not reflect those of equivalent activity occurring off that platform.

The following methodology details the scope of the GCHL Nickel Index, and offers a fully transparent description of the calculation of each component in the final Index.

¹ USD/mt being the reference unit most commonly used for the trading of Nickel delivered on a CIF basis at the discharge port locations as listed in the specific TS

² Preamble 26 to Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016.

2 Introduction

GCHL introduced the GCHL Nickel Index in conjunction with the launch of GCHL's Class 1 nickel markets.

The GCHL Nickel Index provides an independently established, transparent and reliable reference price for spot Class 1 nickel. The Index is derived only from objective data (transactions, bids and offers) and no subjective assessment is involved in its determination.

GCHL publishes the GCHL Nickel Index daily. The physical transactions, bids and offers from which the Index is derived are also published transparently and available in real-time to GCHL's Market Members and to those Subscribers which have opted for that service.

3 Scope of the GCHL Nickel Index and Definitions

3.1 Scope

The GCHL Nickel Index represents the **Spot Price** of the **Index Month** for **Class 1 nickel** under CIF delivery terms at the discharge port locations listed in the specific TS. These terms are defined as follows:

3.2 Definitions

'Benchmark Oversight Committee' refers to the GCHL committee of that name, the main responsibility of which is to oversee decisions made by GCHL about whether to exclude data from the GCHL indices and the actions taken in connection with such decisions. That committee is comprised of independent markets experts and is chaired by the senior independent non-executive director of GCHL. Its terms of reference are available on the GCHL website at www.globalcommoditiesholdings.com.

'Compliance Committee' refers to the GCHL committee of that name, the main responsibility of which is to oversee GCHL's compliance with applicable laws and regulations and its processes and procedures for the administration of the GCHL indices, including the GCHL Nickel Index. That committee is mainly comprised of compliance and regulatory experts and is chaired by the senior independent non-executive director of GCHL. Its terms of reference are available on the GCHL website at www.globalcommoditiesholdings.com.

'Data Quality Review Group' refers to the GCHL management group of that name, the main responsibility of which is the make decisions about whether to exclude data from the GCHL indices and the actions taken in connection with such decisions. That committee is comprised of the senior independent non-executive director of GCHL and senior managers at GCHL. Its terms of reference are available on the GCHL website at www.globalcommoditiesholdings.com.

'Index Calculation Period' in respect of any Index Month is the period beginning on the first business day of the month following the previous calendar month, and terminating on the last business day of the Index Month.

Example: If the last business day in January is Tuesday 31st, the February Calculation Period begins on Wednesday 1st February.

‘Index Month’ refers to the calendar month for which the GCHL Nickel Index is calculated.

‘Listed Public Holidays’ do not qualify for inclusion in the Index calculation. They include all the national public holidays published by the UK government

GCHL’s Class 1 nickel markets refers to the contract for the purchase and sale of physical nickel briquettes, full plate cathodes, pellets, powder, rounds falling within the parameters defined in the “Nickel Briquettes CIF” TS, “Nickel Full Plate Cathodes CIF” TS, “Nickel Pellets CIF” TS, “Nickel Powder CIF” TS and “Nickel Rounds CIF” TS for GCHL Standard Trading Agreement – Metals (‘STAM’).

‘Relevant Exchanges’ is defined in Section 6.

‘Spot Price’ is defined here as the price for Class 1 nickel being delivered in the prompt two months following the Index Month in respect of the relevant Index Calculation Period.

‘Subscribers’ is defined in Section 6.

Trading Window – defined as 2:00am to 18:00pm London time

‘TS’ refers to Transaction Specification

4 Monthly GCHL Nickel Index Calculation

The Monthly GCHL Nickel Index for any Index Month is calculated as the simple average of each daily GCHL Nickel Index which falls in the Index Calculation Period.

The Monthly GCHL Nickel Index is published on the last business day of each calendar month after 18.00 London time³. If this day falls on one of the Listed Public Holidays, the Monthly Index will be calculated on the first business day preceding that day which is not a Listed Public Holiday, and the value will be rolled over for publication on last business day of the month.

The Monthly GCHL Nickel Index is calculated in US Dollars (US\$) per metric tonne to two decimal places (rounding fractions of 0.005 and higher up, and rounding fractions below 0.005 down, to the nearest US cent).

GCHL is responsible for making each GCHL Nickel Index value available and currently publishes these on its website at www.globalcommoditiesholdings.com and elsewhere.

5 Daily GCHL Nickel Index calculation

5.1 Overview of the Daily GCHL Nickel Index calculation

The daily GCHL Nickel Index has the following features:

- The Index is calculated using two categories of applicable data:

³ The publication time may be brought forward if the Trading Window for the publication date is shortened

- **Transactions** in GCHL's Class 1 nickel markets for any delivery period entirely contained within the prompt 2 months following the current Index Month, which are executed via GCHL online trading platform. The transactions must be carried out from Monday to Friday between 02.00 and 18.00 London time⁴.
- **Firm bids and offers** in GCHL's Class 1 nickel markets for any delivery period entirely contained within the prompt 2 months following the current Index Month, which are submitted to GCHL online trading platform. The prices must be posted for a minimum of 15 minutes from Monday to Friday between 02.00 and 18.00 London time¹ (excluding Listed Public Holidays);
- The Trading Window of 02.00 to 18.00 London time may be shortened on particular days (e.g. Christmas Eve or New Year's Eve) following notice by GCHL of the shortened Trading Window to Market Members, Relevant Exchanges and Subscribers;
- Those bids, offers and transactions may be for nickel from the full range of origins allowed within the contract (namely, Australia, Brazil, Canada, Finland, France, Japan, Madagascar, Norway, South Africa and UK and any such origins as GCHL may add to the trading screen from time to time), to be delivered to the full range of delivery points as listed in the specific TS, or may be for Class 1 nickel from a restricted range of origins and / or for delivery to a restricted range of delivery points. Users of the GCHL Nickel Index should be aware that the Index price on any particular date may depend partially on the range of origins and delivery points that have been specified in the bids, offers and transactions on which the calculation of that Index price is based;
- There is no minimum quantity for transactions or for bids and offers, although the GCHL's Class 1 nickel markets on GCHL online trading platform does not allow bids and offers of less than 20 metric tonnes;
- Data collected on a Listed Public Holiday will be excluded;
- The Index is calculated and published every day after 18.00 London time⁵, using applicable data collected during that day which are not Listed Public Holiday;
- The Index is calculated in US\$ per tonne to two decimal places (rounding fractions of 0.005 and higher up, and rounding fractions below 0.005 down, to the nearest US cent).

5.2 Calculating the daily GCHL Nickel Index

Our index methodology ensures that all inputs into the index calculations are objective and transparent, so that:

- all data (trades, bids and offers) are posted or executed through the GCHL platform in a fully transparent and auditable way and
- all trades and orders are for a standard specification, so that prices are fully comparable and no subjective normalisation is required
- all trades are genuine and legally binding; all orders are genuine and capable of being traded

⁴ This window ensures equal representation of Asia-Pacific and European activity on the platform.

⁵ The publication time may be brought forward if the Trading Window for the publication date is shortened.

In addition, other qualifying criteria apply, including:

- current month data is excluded to avoid the distorting price effect of very prompt cargoes
- order data must be posted to the trading screen for a minimum of 15 minutes to ensure that there is sufficient time for them to be traded

The calculation of the GCHL Nickel Index is available in “real time” on our website to those who have subscribed to the data. It shows the transactions, bids and offers that form the GCHL Nickel Index, their quantity, price and whether they qualified for the daily calculation.

The daily GCHL Nickel Index is calculated based on a standard methodology which ensure transactions weigh more heavily in the calculation compared to Bids and Offers.

The daily GCHL Nickel Index shall be calculated separately for each product listed in the GCHL’s Class 1 nickel markets.

The methodology for the daily settlement price shall be based on the calculation using the hierarchical methodology described in parts 5.2 A to E

A: The volume weighted average of all trades during the Trading Window

Example: Calculating the volume weighted average of GCHL Nickel Index on a day with more than one trade

Applicable trades on 21st January:

DETAILS	DELIVERY PERIOD	PRICE	VOLUME
Phys Nickel Briquettes	February	21,000	20mt
Phys Nickel Briquettes	March	20,800	25mt
Phys Nickel Briquettes	March	20,950	20mt
Phys Nickel Briquettes	February	20,750	30mt
Phys Nickel Briquettes	March	20,850	20mt
Settlement price = US\$ 20856.52			

- If there are not multiple trades on a single day then **B**

B: The value of a single trade during the Trading Window

Example: Calculating the GCHL Nickel Index on a day with one trade

Applicable trade on 21st January:

DETAILS	DELIVERY PERIOD	PRICE	VOLUME
Phys Nickel Briquettes	February	21,000	20mt
Settlement price = US\$ 21,000			

- if there are no trades on a single day then **C**

C: The arithmetic mean of the daily best bid-offer spread across the index periods during the Trading Window

Example: Calculating the settlement price on a day using the average of the best Bid-Offer

Applicable Bids and Offers Posted 21 January:

	BID (US\$/mt)	OFFER (US\$/mt)	
March	20,850	21,200	February
March	20,825	21,225	March
February	20,750	21,300	February
February	20,750	21,500	March
March	20,650		
March	20,625		
February	20,600		
February	20,600		
Total Bids: 8		Total Offers: 4	

Therefore the following bids and offers qualify for today's Daily Bid-Offer is:

	BEST BID (US\$/mt)	BEST OFFER (US\$/mt)	
March	20,850	21,200	February
Settlement price = US\$ 21,025			

- if there is no valid bid-offer spread then **D**

D: If there is ONLY a best bid OR best offer during the Trading Window then;

1. For bids

- i) If the day's best bid is greater than (>) the previous day's index calculation then the best bid will be published as the index settlement price for that day

Example: Calculating the settlement price on 21 January on a day with only bids (no transactions or offers)

Applicable Bids and Offers Posted 21 January:

	BID (US\$/mt)	OFFER (US\$/mt)
March	20,850	
March	20,825	
February	20,750	
February	20,750	
March	20,650	
March	20,625	
February	20,600	
February	20,600	
Total Bids: 8		Total Offers: 0

Therefore the following bid qualifies for the day's settlement calculation

BEST BID (US\$/mt)

March	20,850
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- Example 1 - Previous days settlement price = \$20,800

BID (US\$/mt)	greater than	Previous day settlement price (US\$/mt)	Qualifies
20,850	>	20,800	✓
Settlement price = US\$ 20,850			

- ii) If the day's best bid is less than (<) the previous day's index calculation then the previous day's index price will be published as the index settlement price for that day.

- Example 2 - Previous days settlement price = \$21,000

BID (US\$/mt)	greater than	Previous day settlement price (US\$/mt)	Qualifies
20,850	>	21,000	X
Settlement price = US\$ 21,000			

2. For offers

- (i) If the day's best offer is less than (<) the previous day's index calculation then the best offer will be published as the index settlement price for that day.

Example: Calculating the settlement price on 21 January on a day with only bids (no transactions or offers)

Applicable Bids and Offers Posted 21 January:

BID (US\$/mt)	OFFER (US\$/mt)
	21,200 March
	21,225 March
	21,300 February
	21,500 February
Total Bids: 0	Total Offers: 4

Therefore the following offer qualifies for the day's settlement calculation

BEST OFFER (US\$/mt)
March 21,200

- Example 1 - Previous days settlement price = \$21,400

OFFER (US\$/mt)	Less than	Previous day settlement price (US\$/mt)	Qualifies
21,200	<	21,400	✓
Settlement price = US\$ 21,200			

- ii) If the day's best offer is greater than (>) the previous day's index calculation then the previous day's index price will be published as the index settlement price for that day.

➤ Example 2 - Previous days settlement price = \$21,000

OFFER (US\$/mt)	Less than	Previous day settlement price (US\$/mt)	Qualifies
\$21,200	<	21,000	X
Settlement price = US\$ 21,000			

If there are no bids, offers or transactions then E

E: If there are no bids, offers or transactions then the previous day's index price will be published as the index settlement price for that day.

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6 Governance

GCHL is authorised and regulated by the UK's Financial Conduct Authority (FCA) which has granted GCHL permission to carry on the regulated activity of administering benchmarks.

Under FCA rules, GCHL is required to have:

- Transparent and non-discretionary rules and procedures for fair and orderly trading;
- Objective criteria for the efficient execution of orders;
- Transparent rules regarding the criteria for determining the financial instruments that can be traded under its systems;
- Transparent rules, based on objective criteria, governing access to its facility.

As shown in section 5 above, no discretion is exercised in the calculation of the GCHL Nickel Index. The Index is formed of qualifying transactions, bids and offers, unaffected by any subjectivity or any element of discretion. However, bids and offers are monitored to ensure that they are not manipulative or misleading and do not contravene applicable law. Trades are monitored to check whether they are executed within an acceptable range and in accordance with GCHL's regulatory obligations, including those relating to market abuse. If the Data Quality Review Group deems that a bid or offer is non-compliant or entered in error, or a trade is 'off-market', a mis-trade or otherwise in breach of GCHL's policies, that bid, offer or trade may be excluded from the Index calculation and, if required, the GCHL Nickel Index may be re-published with a revised Index calculation. GCHL may refer the parties involved to the FCA and its other regulators. GCHL's Benchmark Oversight Committee will be informed promptly of that decision and the reasons for it. Should this result in the need to re-calculate a previously published Index value, a notification will be sent to Market Members, Relevant Exchanges and Subscribers.

The correct application of the methodology is checked before publication of the GCHL Nickel Index. Market Members and Subscribers may report errors in relation to inputs into the Index (for example, a mis-trade) or challenge the Index output. Error reports and Index challenges will be referred to the Data Quality Review Group. Where appropriate, the Data Quality Review Group will refer its decisions to the Benchmark Oversight Committee for review.

The Index will not be amended at the behest of any party (including personnel at GCHL), except where this relates to a report of suspicious activity, manifest error, mis-trade, or other similar activity which has been reviewed and upheld by the Data Quality Review Group or the Benchmark Oversight Committee. All other requests for amendments or pressure to amend the Index from any party will have no influence in the determination process and may be reported to the relevant regulatory authorities if deemed appropriate by the Data Quality Review Group.

Should an error report or challenge be upheld through this process, GCHL will endeavour to amend the Index as soon as possible. Market Members will be informed by email.

For further information on the criteria used by the Data Quality Review Group to monitor transactions please contact compliance@commodities.global.

Please note that GCHL does not currently make available benchmarks that pursue environmental, social and governance (ESG) objectives or that take into account ESG factors.

7 Amendments to the GCHL Nickel Index Methodology

Factors, including those beyond GCHL's control, may necessitate amendments to the methodology in the future and GCHL reserves the right to make such amendments in accordance with the procedures below. Users of the GCHL Nickel Index should be aware that any amendments to the Index may affect those financial instruments that reference it.

Where GCHL proposes to make any change to the Index Methodology that the Compliance Committee considers to be material, it shall:

- i. Notify Market Members, Relevant Exchanges and Subscribers of its intention to change the index methodology, the change proposed, the rationale for the change and the date from which the change would apply;
- ii. Invite Market Members, Relevant Exchanges and Subscribers to submit comments to GCHL on the proposed change within a consultation period lasting a minimum of three weeks;
- iii. Make public a summary of any comments received from Market Members, Relevant Exchanges and Subscribers and a summary of GCHL's response except where a comment is likely to reveal the identity of a respondent who has requested confidentiality.

Prior to making a material change to the Index Methodology, GCHL will notify Market Members, Relevant Exchanges and Subscribers by email, and an updated methodology will be published on www.globalcommoditiesholdings.com.

GCHL will consider amending or ceasing the Index if it is no longer representative of the underlying market or an adequate volume of underlying inputs cannot be ensured. An amendment or cessation of the Index may impact the financial instruments that reference the Index. Prior to taking any such action, GCHL as required.

8 Industry Comments and Review of the Index Methodology

GCHL was created by leading international commodity consumers and producers to promote standardisation and transparency in the commodity market. All stakeholders' comments, feedback and questions are highly valued. Please contact us at:

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GCHL's Compliance Committee reviews the Index methodology at least annually to ensure that it reliably reflects the underlying physical market and reserves the right to change it at any time. Market Members and users of the Index will be canvassed regularly by GCHL for their views on the

GCHL Nickel Index and may at any time propose changes to it. Those views and proposed changes will be considered by the Compliance Committee in its regular review of the Index methodology.

An independent external auditor will be commissioned to review and report on GCHL's adherence to the Index methodology and to the requirements of the UK Benchmarks Regulation. The audit findings will be published on the GCHL website.

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9 APPENDIX: Frequently Asked Questions

Q *What safeguards are there against strategies to move the Index through off-market trades?*

A As GCHL is authorised and regulated by the Financial Conduct Authority, any off-market trades that are an attempt to manipulate the market will be excluded from the Index and reported to the regulator. Please see our compliance statement in section 6.

Q *Can transactions for Class 1 nickel delivered to other ports count towards the GCHL Nickel Index? Can deliveries of Class 1 Nickel from other origins than those mentioned in the index specifications be included?*

A No. Only standardised products (as defined in STA-M nickel TS) are considered in the GCHL Nickel Index calculation.

Q *Is the Index calculated on UK Bank Holidays?*

A All UK public holidays are excluded from the GCHL Nickel Index calculation.

Q *Are there any restrictions on the level of the prices that can be posted on the GCHL screen?*

A Yes. GCHL generally imposes a 'price collar' or 'price limits' on bids/offers which can be posted on the GCHL screen. The price limits are adjusted daily and may be adjusted intra-day in the event of unusual price movements.

Q *Are voice bids and offers included in the GCHL Nickel Index calculation?*

A No. To be considered as qualifying data, the bid or offer needs to be posted on the GCHL trading platform as a firm price for a minimum of 15 minutes.

Q *Does the tonnage associated to a bid or offer affect its weighting in the Index calculation?*

A No. The Daily Bid-Offer Component described in section 5.2 part C is a simple average of the best bid / best offer qualifying for inclusion in the Index calculation. The prices are given equal weighting.