

# SOFIA – Draft Methodology and Conventions

**Industry consultation** 





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### **Attachments**

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### **Background**

The Australian Repurchase Agreement (Repo) market is a key short term funding market that plays an integral role in the Australian Financial Markets. The majority of local Repo transactions occur in the overnight bucket (average duration 1-2 days) with activity also observed out to 3-months.

The development of an overnight Repo based reference rate is intended to increase transparency and bring diversity to the Repo market by encouraging participation from a broader subset of market users. There is currently no secured benchmark published in Australia.

Since October 2023, ASX has been publishing a Beta version of the Secured Overnight Funding Index of Australia (SOFIA) with a further version published side by side since June 2024. During this phase, rates and eligible volumes have been published weekly in arrears to allow industry participants to assess the methodology and framework and provide feedback on the design of the reference rate to ensure it is fit for purpose upon launch.

The Bank Bill Swap Rate (BBSW) published by ASX Benchmarks Pty Limited¹ (ASX Benchmarks) and its related bodies corporate continues to be robust following continued investment and methodology enhancements over the last several years. The introduction of SOFIA is intended to complement and not replace existing unsecured and risk-free benchmarks (BBSW and Realised AONIA) giving market participants a range of options when using interest rate benchmarks.

### **Document purpose**

The purpose of this document is to provide market participants, regulators and interested parties with a detailed overview of the proposed final design, methodology and conventions for the SOFIA Overnight Repo Reference Rate. This document has been prepared following extensive industry and regulatory engagement, including bilateral meetings, SOFIA Repo Working Group meetings (including the most recent one held in May 2025) an independent academic review commissioned by the Reserve Bank of Australia (RBA) and industry review and feedback provided on the beta versions of SOFIA.

These conventions are also supported by the <u>ASX Benchmarks Complaints Policy</u> and <u>ASX Benchmarks Conflict Handling Policy</u> which will be extended to cover SOFIA from its launch.

### Feedback / contact

Feedback on this document should be provided by 30 January 2026 and should be submitted to Benchmarks@asx.com.au.

Contact Allan McGregor – Head of Rates & Benchmarks, ASX Listing & Markets division if you have any questions at Allan.McGregor@asx.com.au.

**Version:** 1.0 **Updated:** 5/12/2025 ASX Limited ABN 98 008 624 691

<sup>&</sup>lt;sup>1</sup> ASX Benchmarks Pty Limited is a licensed benchmark administrator under Part 7.5B of the Corporations Act 2001 (Cth) in respect of the administration of BBSW. Whilst ASX Benchmarks notes that the SOFIA rate is not currently declared to be a Significant Financial Benchmark (as defined in the Corporations Act), the governance arrangements which would ordinarily apply to BBSW have been considered in respect of the future administration of the non-beta version of the SOFIA rate



### SOFIA Overnight Repo Rate Methodology

### **Overview**

SOFIA measures the cost of overnight funding secured against high-quality Australian dollar-denominated government securities. Eligible collateral includes Commonwealth Government Securities, Semi-Government securities, Treasury Notes, and indexed bonds, as defined under General Collateral 1 (GC1) in the AFMA Repurchase Agreement Conventions.

### **SOFIA Waterfall**

### **Primary Layer**

A volume weighted average (VWAP) calculation methodology (the VWAP Methodology) based on eligible transactions is used to form the SOFIA Rate each day.

### **Secondary Layer**

Where SOFIA cannot be formed under the Primary Layer, a fall-back will apply (Fall Back Methodology) which will be used to form the SOFIA Rate.

### Waterfall step

### Description

### Primary Layer – VWAP Methodology

### **Eligible transactions**

Eligible trades must satisfy the following criteria:

- General Collateral 1 (GC1) Overnight repo transactions settled in Austraclear are eligible
- Transactions with trade date on the same date as its 1st leg settlement date (excluding TomNext) transactions
- No at-call trades, only settled trades
- No trades where the RBA (Reserve Bank of Australia) is a counterparty

The definition of a General Collateral 1 (GC1) Overnight Repo transaction is the meaning within the <u>AFMA Repo Conventions</u> section 3.1.1 pp 6/19 updated from time to time.

### **Minimum thresholds**

For the VWAP Methodology to apply, the following minimum thresholds must be met:

- Minimum volume of eligible transactions: \$1 billion
- Minimum number of eligible transactions: 15 transactions
- Minimum counterparties: To be added as a future enhancement

If any of the above thresholds are not met, the Fall Back Methodology will apply.

### Filtering logic

The following filtering logic will be applied to eligible trades to determine the rate:

- -Eligible trades will be sorted first by rate (highest to lowest) and then by the first leg settlement value (lowest to highest).
- -The bottom 25% (by rate) of eligible traded volume is excluded to address and remove the potential impact from certain types of transactions.
- -The top 5% of (by rate) of eligible traded volume is excluded to address and remove the potential impact from certain types of transactions.

### **Rate calculation**



$$RFR = \sum_{i=1}^{n} Rate_i \times \frac{Volume_i}{Total\ Volume}$$
, for transactions  $i = 1$  to  $n$ 

Where: n= total number of transactions

Note: There are some differences between the final proposed version of the SOFIA Rate and the current SOFIA Beta version. These are:

- In the Beta Version, there are no minimum thresholds applied; and
- In the Beta Version, there is no filtering of the top 5% (by rate) of eligible volume.

### Secondary Layer – Fall Back Methodology

The Fall Back Methodology is that the published rate will revert to the prior days SOFIA Rate, adjusted for any monetary policy rate change effective that day.

For example: Effective 13 August 2025, the Cash Rate Target was lowered from 3.85% to 3.60% (-0.25%).

If the minimum thresholds to publish SOFIA were not met on the 13 August, then the SOFIA Rate from the 12 August (3.89% from the SOFIA Beta Version publication) would be adjusted by -0.25% and would result in a SOFIA Rate of 3.64% being published on 13 August.

#### SOFIA Publication

#### Daily rate publication

The calculated SOFIA rate will be rounded to four decimal places and published by 9:00am AEST/AEDT via information vendors or as otherwise notified via email by the Administrator to subscribers of ASX Benchmark Data. If SOFIA is delayed post 9:00am or there is some other technical issue, the Administrator will promptly place a notice on the ASX system status page (under ASX Benchmarks) advising of the issue.

#### **Publication of market activity**

Anonymised volumes in eligible GC1 Overnight Repo transactions that were used to form the SOFIA Rate will be made public 24 hours in arrears to provide additional transparency to the broader market. The daily volume data is updated each weekday (Mon-Fri) for the prior Business Day.

#### **Calculation contingency arrangements**

A technical problem with the feed of eligible GC1 Overnight Repo Transactions or an Administrator system issue could prevent the transmission/receipt of inputs to SOFIA and impact the automatic calculation of SOFIA. Where a system or data error is detected, the Administrator will follow its operational procedures to produce SOFIA and issue a Market Notice with further information.

### Post publication amendment / intraday refix of SOFIA

Where the Administrator identifies a system generated or other error in the calculation post publication of SOFIA and the error is a material error, the Administrator will republish SOFIA as an intraday refix. A material error is an error that would have a three (3) basis point or greater impact on the final SOFIA rate. In determining the parameters for a refix, the Administrator considered the following:

- Global best practice
- Exposure of market participants to unnecessary basis risk
- The time and effort required to amend transactions in the event of a refix
- Transparency of error reporting
- Ensuring the rate is robust, reliable and reflective of the underlying interest



The cut off time for a request to review the SOFIA rate is 10:00am Sydney time or 60 minutes post the publication.

A Market Notice will be issued by ASX Benchmarks communicating that the SOFIA Rate is under review. Where an intraday refix is required, the Administrator will republish the amended rate to the market via email and via information vendors by 11:00am Sydney time.

### **Complaints procedures**

Where a complaint involves a request for a review and possible republication of SOFIA the complaint will be handled in accordance with the ASX Benchmark Complaints Policy as well as in accordance with the following procedures.

A request to review the SOFIA rate must be lodged by email to the Administrator before 10:00am Sydney time or 60 minutes post publication. To dispute the calculation of SOFIA email ASXBPricing@asx.com.au.

The Administrator will take steps to verify the basis of the complaint (for example, reviewing GC1 repo transactions). If it is identified that a recalculation is warranted, then a recommendation will be made as per the procedures noted in "Post publication amendment / intraday refix of SOFIA".

### **SOFIA Governance Arrangements**

### **Administrator**

ASX Benchmarks as the Administrator of SOFIA, in consultation with the market and regulators, has primary oversight of the governance of the SOFIA rate and processes. This oversight includes the review of the methodology applied in the construction of SOFIA.

ASX Benchmarks also has primary oversight of the Benchmark determination and dissemination process. This includes the accurate and timely calculation, publication and distribution of SOFIA.

### Changes to the SOFIA Methodology and Conventions

Any material change to the SOFIA Methodology and Conventions will require:

- industry consultation on the scope of the proposed change;
- Administrator internal review and approval;
- advance notice of the change and implementation date via publication of a market notice and publication of draft documentation on the website, generally providing at least one calendar month advance notice if circumstances allow; and
- promulgation of the change, once effective, via publication of a market notice and publication of updated documentation on the website (benchmarks page).

ASX Benchmarks considers a "material change" to include, without limitation, any change to the publication approach or calculation methodology for formulating the SOFIA rate. E.g. if ASX Benchmarks changes the publication time or minimum thresholds for VWAP methodology.

The above process for a proposed material change will not apply to a change where ASIC has given the Administrator a written notice requiring the Administrator to make that change.

Any non-material change to the SOFIA Methodology and Conventions will require:

- · Administrator internal review and approval; and
- advance notice of the change and implementation date via publication of a market notice and publication of updated documentation on the website (benchmarks page), generally providing at least one calendar month advance notice if circumstances allow.

To receive ASX market notices, go to ASX online and subscribe to receive benchmark rates notices: <a href="https://www.asxonline.com/public/subscribe.html">https://www.asxonline.com/public/subscribe.html</a>



### **Annual review of the SOFIA Methodology and Conventions**

The Administrator, in consultation with the Committee, will conduct a review of the SOFIA Methodology and Conventions at least once annually incorporating the following:

- The size, liquidity and dynamic of the underlying market for GC1 Repurchase Agreement Transactions.
- The effectiveness of the methodology in representing the interests of the market it seeks to represent.
- The overall integrity of SOFIA.

### **DISCLAIMER**

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ASX Benchmarks Pty Limited ABN 38 616 075 417 and its related bodies corporate (ASXB) makes the Beta version of the SOFIA™ overnight repo reference rate (Beta SOFIA Rate) available for download from the ASX Benchmarks webpage. Until a formal announcement is made confirming the use of the SOFIA Rate for use in financial instruments, ASXB notes that the Beta SOFIA™ Rate is not intended for, and ASXB expressly prohibits its use for, any other purpose, including as a reference, index or benchmark in a financial instrument or financial contract. It should not determine the amount payable under a financial instrument or financial contract and it should not measure the performance of an investment fund. ASXB also reserves the right to amend or vary the underlying methodology and associated publication of the SOFIA™ Rate at its sole discretion and in response to feedback from industry.

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**BBSW®** 

**SOFIA®** 

## Appendix 1: Initial self-assessment of SOFIA vs the IOSCO Principles for Financial Benchmarks

### **Background and purpose**

An initial self-assessment of SOFIA as against the IOSCO Principles for Financial Benchmarks has been completed by ASX Benchmarks to provide the market and regulators with a transparent and detailed view from the Administrator on key assessment areas of the Principles and identifying areas where further enhancements to the Methodology and Conventions will be made over time to continue to develop and improve the robustness of the SOFIA rate.

#### Self-assessment

### **IOSCO Principles**

### Principle 1 – Governance – Overall Responsibility of the Administrator:

The Administrator should retain primary responsibility for all aspects of the Benchmark determination process. For example, this includes: a) Development: The definition of the Benchmark and Benchmark Methodology; b) **Determination and Dissemination:** Accurate and timely compilation and publication and distribution of the Benchmark; c) Operation: Ensuring appropriate transparency over significant decisions affecting the compilation of the Benchmark and any related determination process, including contingency measures in the event of absence of or insufficient inputs, market stress or disruption, failure of critical infrastructure, or other relevant factors; and d) Governance: Establishing credible and transparent governance, oversight and accountability procedures for the Benchmark determination process, including an identifiable oversight function accountable for the development, issuance and operation of the Benchmark.

### How ASX Benchmarks / SOFIA complies

ASX Benchmarks has primary responsibility for all aspects of the benchmark determination process. This includes:

- Defining SOFIA and the SOFIA Conventions and Methodology
- Collation of data inputs from Austraclear
- The timely and accurate determination, publication and distribution of SOFIA
- Ensuring appropriate transparency over significant decisions affecting the determination, publication and distribution of SOFIA
- Establishing credible and transparent governance procedures for the SOFIA determination process.

ASX Benchmarks has conventions, policies, procedures and governance committees in place to govern the generation and administration of SOFIA, including:

- SOFIA Methodology and Conventions [this document] The conventions articulate the operational aspects, calculation rules and methodology used in the determination of SOFIA.
- SOFIA Control Framework. An internal document [currently
  in production and to be finalised ahead of the launch of SOFIA]
  that is made available to ASIC upon request. The control
  framework defines the roles and responsibilities of each
  relevant ASX business unit in the Benchmark determination
  process.
- Benchmarks Oversight Steering Group. An internal steering group comprised of ASX business units including: Legal, Business Development, Operations, Enterprise Compliance, Technology and Clearing Risk Oversight. The purpose of the Steering Group is to provide governance and oversight of the development and determination of Benchmarks – including both BBSW and SOFIA.

## Principle 2 – Governance – Oversight of Third Parties:

Where activities relating to the Benchmark determination process are undertaken by third parties - for example collection of inputs, publication or where a third party acts as Calculation Agent - the Administrator should maintain

ASX Benchmarks maintains responsibility for the appropriate oversight of all third parties involved in any Benchmark determination process. This is documented in numerous policies, procedures and agreements ASX Benchmarks has in place.

For the purposes of SOFIA, there are no third parties involved in providing inputs to the Primary Layer. The underlying transaction data is obtained from Austraclear Limited, a related entity of ASX



appropriate oversight of such third parties. The Administrator (and its oversight function) should consider adopting policies and procedures that: a) Clearly define and substantiate through appropriate written arrangements the roles and obligations of third parties who participate in the Benchmark determination process, as well as the standards the Administrator expects these third parties to comply with; b) Monitor third parties' compliance with the standards set out by the Administrator; c) Make Available to Stakeholders and any relevant Regulatory Authority the identity and roles of third parties who participate in the Benchmark determination process; and d) Take reasonable steps, including contingency plans, to avoid undue operational risk related to the participation of third parties in the Benchmark determination process. This Principle does not apply in relation to a third party from whom an Administrator sources data if that third party is a Regulated Market or Exchange.

Benchmarks through the ASX Limited group structure. Austraclear Limited holds an Australian Clearing and Settlement Facility Licence.

The Secondary Layer (Fall Back Methodology) may require any RBA Monetary Policy changes; this information is made public by the RBA following announcements of any policy decisions and therefore no third-party agreements are required for accessing this information.

### Principle 3 – Governance – Conflicts of Interest for Administrators:

To protect the integrity and independence of Benchmark determinations, Administrators should document, implement and enforce policies and procedures for the identification, disclosure, management, mitigation or avoidance of conflicts of interest. Administrators should review and update their policies and procedures as appropriate. Administrators should disclose any material conflicts of interest to their users and any relevant Regulatory Authority, if any.

ASX has a number of policies and procedures in place for the identification, disclosure, management, mitigation or avoidance of conflicts of interest. This includes the ASX Conflicts Management Policy available here: <a href="https://www.asx.com.au/about/corporate-governance">https://www.asx.com.au/about/corporate-governance</a>. These policies and procedures are subject to periodic review and update as required.

ASX Benchmarks has the following additional policies and procedures in place in relation to conflicts of interest:

- Conflicts of interest is a standing agenda item at the Benchmark Oversight Steering Group. Any new, perceived or actual conflicts are raised at the commencement of each meeting.
- ASX Benchmarks publishes the BBSW Conflicts Handling Policy online at the following location:
   <a href="https://www2.asx.com.au/content/dam/asx/participants/bbsw/bbsw-conflict-handling-arrangements.pdf">https://www2.asx.com.au/content/dam/asx/participants/bbsw/bbsw-conflict-handling-arrangements.pdf</a>. Note: It is intended that this Conflicts Handling policy will be updated to incorporate SOFIA related conflicts handling ahead of the launch of SOFIA during 2026.
- The BBSW Conflicts Handling Policy sets out examples of how perceived or actual conflicts of interest are managed.
- The **SOFIA Control Framework** also details the internal procedures pertaining to conflicts of interest.
- ASX Benchmarks also maintains segregation of reporting lines which are clearly articulated in the SOFIA Control Framework.
- This is further covered under the ASX group policies including ASX Code of Conduct and ASX Anti-Bribery and Corruption Policy.

### Principle 4 - Control Framework for Administrators:

ASX maintains an appropriate control framework to address the areas outlined in this principle. This includes controls for the process of



An Administrator should implement an appropriate control framework for the process of determining and distributing the Benchmark. The control framework should be appropriately tailored to the materiality of the potential or existing conflicts of interest identified, the extent of the use of discretion in the Benchmark setting process and to the nature of Benchmark inputs and outputs. The control framework should be documented and available to relevant Regulatory Authorities, if any. A summary of its main features should be Published or Made Available to Stakeholders. This control framework should be reviewed periodically and updated as appropriate.

determining and distributing SOFIA. The control framework is an internal document that is made available to relevant Regulatory Authority upon request.

The SOFIA control framework will be updated annually. Procedures pertaining to conflicts of interest (including potential and existing perceived or actual conflicts) are outlined in the SOFIA Control Framework document.

Unlike BBSW, transaction inputs from SOFIA are obtained directly from Austraclear Limited - a licensed Clearing & Settlement facility and are entirely based on Settled transactions. As a result, ASX Benchmarks will not undertake any surveillance activities in relation to GC1 Repo Transactions.

The personnel involved in the benchmark determination process are subject to a number of ASX policies including ASX's Code of Conduct, Anti-Bribery and Corruption Policy, Fraud Control Policy and Whistleblower Protection Policy. The ASX Whistleblower Protection Policy outlines the policy and processes to help prevent, detect and report instances of suspicious activity or wrongdoing. The Policy specifically refers to conduct of a benchmark administrator and is available at:

 $\underline{\text{https://www.asx.com.au/content/dam/asx/about/policies/whistleblower-protection-policy.pdf}}$ 

## Principle 5 - Governance – Internal Oversight:

Administrators should establish an oversight function to review and provide challenge on all aspects of the Benchmark determination process. This should include consideration of the features and intended, expected or known usage of the Benchmark and the materiality of existing or potential conflicts of interest identified. The oversight function should be carried out either by a separate committee, or other appropriate governance arrangements. The oversight function and its composition should be appropriate to provide effective scrutiny of the Administrator. Such oversight function could consider groups of Benchmarks by type or asset class, provided that it otherwise complies with this Principle. An Administrator should develop and maintain robust procedures regarding its oversight function, which should be documented and available to relevant Regulatory Authorities, if any. The main features of the procedures should be Made Available to Stakeholders.

ASX Benchmarks, in consultation with regulators and the market has oversight of all aspects of the benchmark determination process for SOFIA.

ASX Benchmarks maintains an oversight function by way of the **Benchmarks Oversight Steering Group.** This group reviews all aspects of the benchmark determination process.

Note: ASX Benchmarks is **not intending** to establish a separate SOFIA Advisory Committee made up of external stakeholders (*subject to industry and regulatory feedback*).

The Benchmarks Oversight Steering Group is comprised of multiple business units including Legal, Product Management, Operations, Enterprise Compliance, Technology and Clearing Risk Oversight. The purpose of the Steering Group is to provide governance and oversight of the development and determination of Benchmarks including both BBSW and SOFIA. The Benchmark Oversight Steering Group is also responsible for the periodic review of the design of key benchmarks, monitoring metrics, issues and risks to the benchmarks via the monthly dashboard presented to the steering group.

Conflicts of interest reporting is a standing agenda item for the Benchmark Oversight Steering Group. The Benchmarks Oversight Steering Group considers any perceived or actual conflicts of interest and review conflicts handling arrangements.

ASX Benchmarks believes that the composition of the group is appropriate to provide adequate review and oversight of the benchmark determination process.

## Principle 6 – Quality of the Benchmark – Benchmark Design:

The design of the Benchmark should seek to achieve, and result in an accurate and reliable representation of the

The design of the SOFIA conventions and methodology have been developed and refined through engagement with key stakeholders via the SOFIA working group, bilateral discussions, regulatory engagement, and through the publication of two beta versions beginning in October 2023.



economic realities of the Interest it seeks to measure, and eliminate factors that might result in a distortion of the price, rate, index or value of the Benchmark. Benchmark design should take into account the following generic nonexclusive features, and other factors should be considered, as appropriate to the particular Interest: a) Adequacy of the sample used to represent the Interest; b) Size and liquidity of the relevant market (for example whether there is sufficient trading to provide observable, transparent pricing); c) Relative size of the underlying market in relation to the volume of trading in the market that references the Benchmark; d) The distribution of trading among Market Participants (market concentration); e) Market dynamics (e.g., to ensure that the Benchmark reflects changes to the assets underpinning a Benchmark).

Further, the proposed final version of SOFIA Conventions and Methodology will be published to market for industry review and comment by the end of 2025; and then finalised during 2026 ahead of the first publication of SOFIA.

ASX maintains a waterfall calculation methodology that is comprised of two stages. A Primary Layer made up of GC1 Repurchase Agreement transactions settled in Austraclear a Secondary Layer (Fall Back) whereby the prior day's SOFIA rate is used with an adjustment for any RBA monetary policy changes effective on the day.

The GC1 Repurchase Agreement transactions are settled ahead of use in the benchmark; thereby providing full transparency and observability of pricing.

ASX further adheres to this principle by monitoring and assessing key metrics that indicate the performance of the methodology. These metrics will be presented to the **Benchmark Oversight Steering Group**. These forums provide stakeholders the ability to discuss and test the relevance of the existing methodology.

## Principle 7 - Quality of the Benchmark - Data Sufficiency:

The data used to construct a Benchmark should be based on prices, rates, indices or values that have been formed by the competitive forces of supply and demand (i.e., in an active market) and be anchored by observable transactions entered into at arm's length between buyers and sellers in the market for the Interest the Benchmark measures. This Principle recognizes that Bona Fide observable transactions in active markets provide a level of confidence that the prices or values used as the basis of the Benchmark are credible. Principle 7 does not mean that every individual Benchmark determination must be constructed solely from transaction data. Provided that an active market exists, conditions in the market on any given day might require the Administrator to rely on different forms of data tied to observable market data as an adjunct or supplement to transactions. Depending upon the Administrator's Methodology, this could result in an individual Benchmark determination based predominantly, or exclusively, on bids and offers or extrapolations from prior transactions.

The Principle also recognizes that various indices may be designed to measure or reflect the performance of a rule-based investment strategy, the volatility or behaviour of an index or market or other aspects of an active market. The Principle also does not preclude the use of non-

As detailed in Principle 6, ASX Benchmarks maintains compliance with this principle through the design of the SOFIA waterfall methodology. The data inputs that are used to calculate the benchmark can be found in the SOFIA Conventions and Methodology.

The data used to construct SOFIA is sufficient to accurately and reliably represent the Interest measured by SOFIA and is:

- based on transactions that have been formed by the competitive forces of supply and demand in order to provide confidence that the price discovery system is reliable; and
- anchored by observable transactions generally entered into at arm's length between buyers and sellers for genuine business purposes.

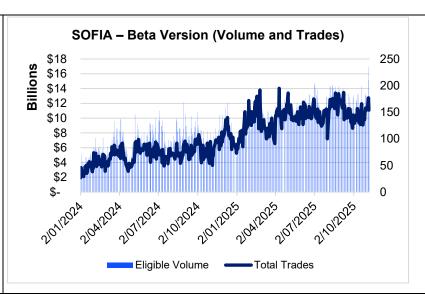
Note: The initial launch of the SOFIA rate may incorporate the inclusions of some transactions that are not entered into at arm's length e.g. intra-group transactions. At present Austraclear Limited does not exclude these transactions in data used by ASX Benchmarks to formulate the SOFIA rate. Austraclear Limited is intending to make an enhancement to exclude these transactions in due course.

It is expected that the ASX Benchmarks filtering logic for SOFIA (being to remove the bottom 25% of transactions and the top 5% of transactions) will manage the impact of any intra-group transactions (e.g. where they are agreed outside of prevailing market rates) being included in the population of GC1 overnight repo transactions for use in the calculation of SOFIA). However, it will remain possible for these transactions to impact the SOFIA rate until the enhancement referenced above is implemented. The chart below shows the results for the SOFIA Beta version for the period between 1 January 2024 to November 2025:

- Average daily eligible volume over this period was \$8.8bn.
- Average daily eligible trades included in the calculation over this period was 106 trades.



transactional data for indices that are not designed to represent transactions and where the nature of the index is such that non-transactional data is used to reflect what the index is designed to measure. For example, certain volatility indices, which are designed to measure the expected volatility of an index of securities transactions, rely on non-transactional data, but the data is derived from and thus anchored in an actual functioning securities or options market.



## Principle 8 – Quality of the Benchmark – Hierarchy of Data Inputs:

An Administrator should establish and publish or make available clear guidelines regarding the hierarchy of data inputs and exercise of Expert Judgment used for the determination of Benchmarks. In general, the hierarchy of data inputs should include: a) Where a Benchmark is dependent upon Submissions, the Submitters' own concluded arms-length transactions in the underlying interest or related markets; b) Reported or observed concluded Arm's-length Transactions in the underlying interest; c) Reported or observed concluded Arm's-length Transactions in related markets; d) Firm (executable) bids and offers; and e) Other market information or Expert Judgments.

The hierarchy of data inputs used to determine SOFIA are detailed in the *SOFIA Conventions and Methodology*. The conventions set out the conditions against which the market and data sufficiency are assessed. The conventions make clear the application of the waterfall approach in determining the SOFIA rate. The hierarchy requires the use of transaction data in GC1 Repurchase Agreement Transactions only.

Transaction data must meet established minimum thresholds before use in setting the SOFIA rate as part of the Primary Layer. These thresholds have been set through industry feedback and also academic research and are set at levels to reduce the risks to the integrity of the rate and also any use of Expert Judgement.

In the event that transaction data is insufficient to calculate SOFIA in accordance with the Primary Layer of the methodology, the waterfall methodology enables ASX Benchmarks to determine SOFIA using the Secondary Layer (Fall Back).

## Principle 9 – Quality of the Benchmark – Transparency of Benchmark Determinations:

The Administrator should describe and publish with each Benchmark determination, to the extent reasonable without delaying an Administrator publication deadline: a) A concise explanation, sufficient to facilitate a Stakeholder's or Market Authority's ability to understand how the determination was developed, including, at a minimum, the size and liquidity of the market being assessed (meaning the number and volume of transactions submitted), the range and average volume and range and average of price, and indicative percentages of each type of market data that have been considered in a Benchmark determination: terms referring to the pricing Methodology should be

ASX Benchmarks will publish each determination of the SOFIA rate in line with this principle to aid the transparency of the benchmark.

The daily publication of SOFIA (delayed 24 hours) will be made available via the ASX website. The calculation methodology will be made available to users via this data and/or to subscribers who receive the rate via email distribution.

Further, the volume of transactions, minimum yield and maximum yield of the GC1 Repurchase Agreement transactions used to formulate SOFIA will be made available via the ASX website.



included (i.e., transaction-based, spread-based or interpolated/extrapolated); b) A concise explanation of the extent to which and the basis upon which Expert Judgment if any, was used in establishing a Benchmark determination.

### Principle 10 – Quality of the Benchmark – Periodic Review:

The Administrator should periodically review the conditions in the underlying Interest that the Benchmark measures to determine whether the Interest has undergone structural changes that might require changes to the design of the Methodology. The Administrator also should periodically review whether the Interest has diminished or is nonfunctioning such that it can no longer function as the basis for a credible Benchmark. The Administrator should Publish or Make Available a summary of such reviews where material revisions have been made to a Benchmark, including the rationale for the revisions.

ASX Benchmarks continually monitors and assesses market conditions to determine whether the SOFIA Conventions and Methodology remains appropriate to determine a credible benchmark. This is achieved through the maintenance and review of certain metrics that seek to measure the quality and credibility of the benchmark in line with this principle.

These metrics are presented to the Benchmark Oversight Steering Group in order to identify ways in which to improve the existing methodology to ensure ASX maintains the quality of the benchmark.

ASX Benchmarks also complies with this principle through publication of any consultation where material changes (as defined in the SOFIA Conventions and Methodology) are proposed to the methodology to ensure the ongoing quality and credibility of the benchmark.

Finally the SOFIA Conventions and Methodology are reviewed at least annually incorporating consideration of the following:

- The size, liquidity and dynamic of the underlying market for GC1 Repurchase Agreement Transactions.
- The effectiveness of the methodology in representing the interests of the market it seeks to represent.
- The overall integrity of SOFIA.

## Principle 11 – Quality of the Methodology – Content of the Methodology:

The Administrator should document and Publish or Make Available the Methodology used to make Benchmark determinations. The Administrator should provide the rationale for adopting a particular Methodology. The Published Methodology should provide sufficient detail to allow Stakeholders to understand how the Benchmark is derived and to assess its representativeness, its relevance to particular Stakeholders, and its appropriateness as a reference for financial instruments.

ASX Benchmarks complies with this principle by making public the waterfall methodology used to make SOFIA determinations. This is available in the SOFIA Conventions and Methodology document.

The calculation waterfall layer used for each SOFIA determination is made publicly available via:

- Subscribers of SOFIA who will receive a daily SOFIA spreadsheet which details the method of publication of the day's SOFIA rate.
- For non-subscribers, a 24 hour delayed publication on the ASX website.



## Principle 12 – Quality of the Methodology – Changes to the Methodology:

An Administrator should Publish or Make Available the rationale of any proposed material change in its Methodology, and procedures for making such changes. These procedures should clearly define what constitutes a material change, and the method and timing for consulting or notifying Subscribers (and other Stakeholders where appropriate, taking into account the breadth and depth of the Benchmark's use) of changes. Those procedures should be consistent with the overriding objective that an Administrator must ensure the continued integrity of its Benchmark determinations. When changes are proposed, the Administrator should specify exactly what these changes entail and when they are intended to apply. The Administrator should specify how changes to the Methodology will be scrutinised, by the oversight function. The Administrator should develop Stakeholder consultation procedures in relation to changes to the Methodology that are deemed material by the oversight function, and that are appropriate and proportionate to the breadth and depth of the Benchmark's use and the nature of the Stakeholders.

ASX Benchmarks has in place Stakeholder consultation procedures in relation to proposed changes to the SOFIA Conventions and Methodology.

Any Material Change to the SOFIA Methodology and Conventions will require:

- Industry consultation on the scope of the proposed change.
- Administrator internal review and approval.
- Advance notice of the change and implementation date via publication of a market notice and publication of draft documentation on the website, generally providing at least one calendar month advance notice if circumstances allow.
- Promulgation of the change, once effective, via publication of a market notice and publication of updated documentation on the website (benchmarks page).

### Principle 13 – Quality of the Methodology – Transition:

Administrators should have clear written policies and procedures, to address the need for possible cessation of a Benchmark, due to market structure change, product definition change, or any other condition which makes the Benchmark no longer representative of its intended Interest. These policies and procedures should be proportionate to the estimated breadth and depth of contracts and financial instruments that reference a Benchmark and the economic and financial stability impact that might result from the cessation of the Benchmark. The Administrator should take into account the views of Stakeholders and any relevant Regulatory and National Authorities in determining what policies and procedures are appropriate for a particular Benchmark. These written policies and procedures should be Published or Made Available to all Stakeholders.

ASX Benchmarks has in place the **ASX Transition Policy and Procedure**, which covers the scenario where ASX Benchmarks may cease generating and administering BBSW [this will also be extended to cater for the cessation of generating and administering SOFIA].

This document can be made available to stakeholders upon request.

The ASX Transition Policy and Procedure updates will be proportionate to the estimated breadth and depth of contracts and financial instruments that initially reference SOFIA being negligible until a critical mass of support builds around the Rate. ASX Benchmarks expects that the Transition Policy and Procedure will be enhanced further as and when SOFIA gains critical mass and support from the industry and the market.

In accordance with Section 5 (Stakeholder Awareness) in the ASX Transition Policy and Procedure, ASX Benchmarks:

- a) Encourages participants to have robust fall back provisions written into their contractual documentation to address the cessation of, or material change to, the SOFIA rate; and
- b) Explains that stakeholders should be aware of the possibility that various factors, including external factors beyond the control of ASX Benchmarks, might necessitate material changes to the SOFIA benchmark.



## Principle 14 – Quality of the Methodology – Submitter Code of Conduct:

The Administrator should develop guidelines for Submitters ("Submitter Code of Conduct"), which should be available to any relevant Regulatory Authorities, if any and Published or Made Available to Stakeholders. The Administrator should only use inputs or Submissions from entities which adhere to the Submitter Code of Conduct and the Administrator should appropriately monitor and record adherence from Submitters. The Administrator should require Submitters to confirm adherence to the Submitter Code of Conduct annually and whenever a change to the Submitter Code of Conduct has occurred. 26 The Administrator's oversight function should be responsible for the continuing review and oversight of the Submitter Code of Conduct.

ASX Benchmarks does not expect a Submitter Code of Conduct to be required for the SOFIA rate as the formulation of the rate is based solely on GC1 Repurchase Agreement transactions settled via Austraclear Limited a licensed Clearing and Settlement Facility.

No direct submissions of transactions or data are made directly to ASX Benchmarks.

## Principle 15 – Quality of the Methodology – Internal controls over Data Collection:

When an Administrator collects data from any external source the Administrator should ensure that there are appropriate internal controls over its data collection and transmission processes. These controls should address the process for selecting the source, collecting the data and protecting the integrity and confidentiality of the data. Where Administrators receive data from employees of the Front Office Function, the Administrator should seek corroborating data from other sources.

ASX Benchmarks collects data from internal sources only being Austraclear Limited. ASX Benchmarks has appropriate internal controls over its data collection and transmission process to maintain strict confidentiality of any data used in the formulation of Benchmarks.

ASX Benchmarks has security controls in place to ensure that the confidentiality of data transmitted to ASX Benchmarks is protected.

## Principle 16 – Accountability – Complaints Procedure:

The Administrator should establish and Publish or Make Available a written complaints procedures policy, by which Stakeholders may submit complaints including concerning whether a specific Benchmark determination is representative of the underlying Interest it seeks to measure, applications of the Methodology in relation to a specific Benchmark determination(s) and other Administrator decisions in relation to a Benchmark determination.

## ASX Benchmarks makes publicly available the **Benchmarks Complaints Policy** located at:

https://www.asx.com.au/connectivity-and-data/information-services/benchmarks/benchmark-data/dispute-a-benchmark-rate-or-make-a-complaint

As set out in the policy, complaints relating to:

- whether a specific Benchmark determination is representative of the underlying Interest it seeks to measure
- application of the Methodology to a specific Benchmark determination
- pricing and fee structures for access to a specific Benchmark
- other Administration decisions in relation to a Benchmark determination

Complaints can be made through ASX's complaints portal: <a href="https://www2.asx.com.au/about/contact-asx/customer-feedback">https://www2.asx.com.au/about/contact-asx/customer-feedback</a>

For a dispute specifically about SOFIA, stakeholders can contact ASX Benchmarks Pricing at the details set out in the policy.



### Principle 17- Audits:

The Administrator should appoint an independent internal or external auditor with appropriate experience and capability to periodically review and report on the Administrator's adherence to its stated criteria and with the Principles. The frequency of audits should be proportionate to the size and complexity of the Administrator's operations. Where appropriate to the level of existing or potential conflicts of interest identified by the Administrator (except for Benchmarks that are otherwise regulated or supervised by a National Authority other than a relevant Regulatory Authority), an Administrator should appoint an independent external auditor with appropriate experience and capability to periodically review and report on the Administrator's adherence to its stated Methodology. The frequency of audits should be proportionate to the size and complexity of the Administrator's Benchmark operations and the breadth and depth of Benchmark use by Stakeholders.

SOFIA will be subject to an internal audit periodically. Internal audits undertaken are measured against the following:

• IOSCO Principles for Financial Benchmarks 2013

For good order the production of the SOFIA rate will also consider the following (noting SOFIA is not currently a Significant Financial Benchmark):

- ASIC Financial Benchmark (Administration) Rules 2018
- ASIC Financial Benchmark (Compelled) Rules 2018

### Principle 18 – Accountability – Audit Trail:

Written records should be retained by the Administrator for five years, subject to applicable national legal or regulatory requirements on: a) All market data, Submissions and any other data and information sources relied upon for Benchmark determination: b) The exercise of Expert Judgment made by the Administrator in reaching a Benchmark determination; c) Other changes in or deviations from standard procedures and Methodologies, including those made during periods of market stress or disruption; d) The identity of each person involved in producing a Benchmark determination; and e) Any queries and responses relating to data inputs. If these records are held by a Regulated Market or Exchange the Administrator may rely on these records for compliance with this Principle, subject to appropriate written record sharing agreements.

In accordance with group wide ASX policy, all written records regarding the SOFIA rate determination are retained by ASX Benchmarks for a period of at least seven years.

This Principle is covered by the following ASX policies:

- ASX Data Management Policy
- ASX Data Retention Policy
- ASX Data Handling Procedures

## Principle 19 – Accountability - Cooperation with Regulatory Authorities:

Relevant documents, audit trails and other documents subject to these Principles shall be made readily available

ASX Benchmarks maintains up to date documentation for SOFIA which can be made readily available to the relevant regulatory authorities.

ASX provides information to ASIC and the RBA, subject to Corporations Act requirements, and any other regulators as required.



by the relevant parties to the relevant Regulatory Authorities in carrying out their regulatory or supervisory duties and handed over promptly upon request.	
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### **Assessment Summary**

IOSCO Principles	ASX Benchmarks assessment	
Principle 1 – Governance – Overall Responsibility of the Administrator	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 2 – Governance – Oversight of Third Parties	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 3 – Governance – Conflicts of Interest for Administrators	Expected to be fully implemented ahead of SOFIA launch.	
Principle 4 - Control Framework for Administrators	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 5 - Governance - Internal Oversight	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 6 – Quality of the Benchmark – Benchmark Design	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 7 - Quality of the Benchmark – Data Sufficiency	Broadly implemented	
	Note: While filtering logic is broadly expected to manage this, enhancements are required to exclude intra-group transactions (non arms-length) from potential inclusion in SOFIA.	
Principle 8 – Quality of the Benchmark – Hierarchy of Data Inputs	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 9 – Quality of the Benchmark – Transparency of Benchmark Determinations	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 10 – Quality of the Benchmark – Periodic Review	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 11 – Quality of the Methodology – Content of the Methodology	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 12 – Quality of the Methodology – Changes to the Methodology	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 13 – Quality of the Methodology – Transition	Expected to be fully implemented ahead of SOFIA launch.	
Principle 14 – Quality of the Methodology – Submitter Code of Conduct	Not applicable	
Principle 15 – Quality of the Methodology – Internal controls over Data Collection	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 16 – Accountability – Complaints Procedure	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 17- Audits	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 18 – Accountability – Audit Trail	Fully implemented; or fully implemented ahead of SOFIA launch.	
Principle 19 – Accountability - Cooperation with Regulatory Authorities:	Fully implemented; or fully implemented ahead of SOFIA launch.	

**Version:** 1.0 **Updated:** 5/12/2025 ASX Limited ABN 98 008 624 691

18/18