



# NEA Green Bond Report

January 2024



# NEA Green Bond

The National Environment Agency (“NEA”) is the leading public organisation responsible for ensuring a clean and sustainable environment for Singapore. In our inaugural debt issuance on 15 September 2021 (“Date of Issuance”), we raised S\$1.65 billion worth of green bonds in a dual-tranche issuance under our S\$3 billion Multicurrency Medium Term Note Programme.

We are pleased to report that all funds have been allocated to eligible projects in accordance with our green bond framework<sup>1</sup> (the “Framework”). V.E, now known as Moody’s ESG Solutions, provided a second party opinion<sup>2</sup> regarding, amongst other, the alignment of the Framework with the four components of the Green Bond Principles 2018.

This report covers the data and information for the financial year 2022 for the period between 1 April 2022 and 31 March 2023.

**Proceeds from the issuance** have been allocated to finance the development of the Integrated Waste Management Facilities (IWMP) - sustainable waste management infrastructure.

As the first Statutory Board issuer of green bonds in Singapore, we hope to promote the development of green solutions and create a market in this area, and help Singapore achieve its vision of leading a green economy.

As part of this, the NEA is undertaking efforts to move Singapore towards a circular economy as part of the Zero Waste Master Plan. Examples include:

- **Food Waste.** Starting from 2024, building managers and occupiers of new industrial and commercial buildings where large amounts of food waste are generated will have to segregate and implement on-site food waste treatment solution, as well as to report the amount of food waste segregated. For existing buildings, building managers have the option of implementing on-site food waste treatment solutions, or treating segregated food waste off-site at facilities such as the Integrated

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<sup>1</sup> <https://www.nea.gov.sg/docs/default-source/default-document-library/nea-green-bond-framework.pdf>

<sup>2</sup> <https://www.nea.gov.sg/docs/default-source/default-document-library/second-party-opinion.pdf>

Waste Management Facility's Food Waste Treatment Facility. To encourage companies to go one step further and convert food waste into value-added products, NEA also launched the inaugural Food Resource Valorisation Awards (FVA) in September 2021 to recognise the efforts of companies in this area and raise awareness of the food resource valorisation concept.

- **Packaging Waste.** Since 2022, companies covered by the Mandatory Packaging Reporting scheme have been reporting their packaging data and 3R (reduce, reuse, recycle) plans to NEA. This focuses their attention on the packaging they introduce into Singapore. This also lays the foundation for the Extended Producer Responsibility ("EPR") scheme for managing packaging waste, where manufacturers and importers bear responsibility for collecting and recycling used packaging from their products. A mandatory disposable carrier bag charge was introduced on 3 July 2023 at about 400 or two-third of all supermarket outlets, to nudge the public to bring their own bags and reduce the use of disposable carrier bags. Another upcoming packaging waste management initiative is a beverage container return scheme aimed to be implemented in 2025. This is the first phase of the EPR framework to manage packaging waste. Under this scheme, a refundable deposit will be included in the price of pre-packaged beverages at the point of sale and refunded to consumers when they return the used beverage containers at designated return points. This will support the aggregation of a clean stream of high quality and high value recyclables that can be more easily processed and recycled.
- **E-Waste.** To ensure the proper collection and handling of electrical and electronic waste (e-waste), and the extraction of valuable resources from e-waste, NEA implemented the Extended Producer Responsibility scheme for e-waste management, with multiple collection points islandwide. We worked with the Producer Responsibility Scheme Operator, appointed from 1 July 2021 to 30 June 2026, to increase the number of collection points and raise awareness of e-waste recycling. Since the commencement of the scheme in July 2021, more than 12,000 tonnes of e-waste had been collected. To date, there are close to 800 collection points at convenient locations such as community centres, shopping centres, large electronic retail outlets, and government buildings

More information on NEA's sustainability efforts can be found in our Annual & Sustainability Report<sup>3</sup>.

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<sup>3</sup> <https://www-nea-gov-sg-admin.cwp.sg/docs/default-source/asr/nea-ar-fy22.pdf>

# Allocation of Proceeds

Funding for the Tuas Nexus Integrated Waste Management Facility is estimated to be 60% by green bonds and 40% by other sources.

Details of 2 tranches making up the S\$1.65 billion fixed rate green bonds issued to date are as follows:

- S\$350 million due September 2031 bearing a coupon of 1.67% p.a.; and
- S\$1.3 billion due September 2051 bearing a coupon of 2.5% p.a..

From the Date of Issuance to the 31 March 2023, the proceeds have been fully allocated as follows:

| S/N | Eligible project name                           | Allocated to date      | Disbursed               | Brief description                                                                                                                                                                                                |
|-----|-------------------------------------------------|------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Tuas Nexus Integrated Waste Management Facility | 100% (S\$1.65 billion) | 3.48% (S\$57.4 million) | Construction of an integrated facility to treat incinerable waste, source-segregated food waste and dewatered sludge, as well as to sort household recyclables collected under the National Recycling Programme. |

Disbursements of the proceeds have been slower than projected due to various delays, including COVID-19 pandemic and the Russia-Ukraine conflict.

Pending the disbursement of the remaining proceeds to the project, the proceeds are held in a portfolio of liquid instruments such as short-term Singapore Government debt securities and cash, in accordance with the Framework.

# Impact reporting/ Details of Expected Environmental Benefits

We plan, develop, and manage the solid waste management system in Singapore. We promote circular economy and the 3Rs (reduce, reuse, and recycle) to conserve resources.

The Tuas Nexus Integrated Waste Management Facility (“IWMF”), our flagship waste management facility, will meet Singapore’s long term waste management needs and replace older and less efficient Waste-To-Energy (“WTE”) facilities due for decommissioning.



IWMF is co-located with Singapore’s National Water Agency (“PUB”)’s Tuas Water Reclamation Plant (“TWRP”) to jointly form the Tuas Nexus and will be developed in phases:

- Phase 1 comprising a 2,900 tonnes per day (“tpd”) WTE Facility, a 250 tpd Materials Recovery Facility (“MRF”), a 800 tpd Sludge Incineration Facility (“SIF”) and a 400 tpd Food Waste Treatment Facility (“FWTF”) is expected to be completed from 2025 onwards.
- Phase 2 comprising a 2,900 tpd WTE Facility is expected to be completed at a later stage.

## **Key Focus of IWMF:**

- Improve resource and energy recovery from waste;
- Minimise environmental impact;
- Improve land use optimisation; and

- Reap benefits from co-location synergies with TWRP

| Facility                                 | Expected Benefits <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WTE Facility<br>(Phase 1 -<br>2,900 tpd) | <p>Gross energy recovery efficiency of 26%<sup>4</sup> which is higher than the minimum efficiency of WTE facility (i.e., 25%) set by the Climate Bonds Initiative (CBI)'s Waste Management Criteria<sup>5</sup>.</p> <p>Flue gas from the waste incineration process will be treated to comply with Singapore's air emissions standards.</p> <p>Ferrous and non-ferrous metals will be recovered from incineration bottom ash (IBA) generated at the WTE facility.</p> |
| MRF<br>(250 tpd)                         | Recyclables collected from the National Recycling Programme will be sorted at the MRF. Useful resources recovered, such as ferrous and non-ferrous metal, plastics, and paper will be sent to off-site facilities for further processing.                                                                                                                                                                                                                               |
| SIF<br>(800 tpd)                         | <p>Maximise heat recovery from the flue gas for the Tuas Nexus processes to achieve a minimum thermal efficiency of 70%<sup>6</sup> for the sludge incineration process.</p> <p>Flue gas from the sludge incineration process will be treated to comply with Singapore's air emissions standards.</p>                                                                                                                                                                   |
| FWTF<br>(400 tpd)                        | The FWTF will treat source-segregated food waste to produce high quality bio-pulp for co-digestion with used water sludge generated by TWRP. The biogas generated by the co-digestion process will be combusted at the biogas superheaters of IWMF's WTE Facility to boost the steam temperature and increase electricity output of the WTE Facility.                                                                                                                   |

<sup>3</sup> The figures provided in this table are subject to change based on final design and actual commissioning results.

<sup>4</sup> The gross energy recovery efficiency is subject to change based on the calorific value of waste, actual load during operations and power degradation curve.

<sup>5</sup> Details can be found at the following link

<https://www.climatebonds.net/files/standards/Waste%20Management/Crit%20Waste%20Management%20Criteria.pdf>.

<sup>6</sup> The minimum thermal efficiency is subject to change based on the calorific value of sludge and actual load during operations.

# Disclaimer

This report contains certain forward-looking statements that reflect NEA's current views with respect to future events and its financial and operational performance. These forward-looking statements are based on NEA's current expectations and projections about future events. Because these forward-looking statements are subject to risks and uncertainties, actual future results or performance may differ materially from those expressed in or implied by these statements due to any number of different factors, many of which are beyond the ability of NEA to control or estimate precisely, including changes in the regulatory environment, future market developments, fluctuations in price and other risks. You are cautioned not to place undue reliance on the forward-looking statements contained herein, which are made only as of the date of this document. This report does not constitute a recommendation regarding any securities of NEA. This report is not, does not contain and may not be intended as an offer to sell or a solicitation of any offer to buy any securities issued by NEA. In particular, neither this document nor any other related material may be distributed or published in any jurisdiction in which it is unlawful to do so, except under circumstances that will result in compliance with any applicable laws or regulations. Persons into whose possession such documents may come must inform themselves about, and observe, any applicable restrictions on distribution.



## **INDEPENDENT LIMITED ASSURANCE REPORT IN CONNECTION WITH NATIONAL ENVIRONMENT AGENCY ("NEA") ANNUAL GREEN BOND REPORT FOR THE PERIOD FROM 1 APRIL 2022 TO 31 MARCH 2023**

National Environment Agency ("NEA") established a Green Bond Framework (the "Framework") to fund projects that contribute to environmental sustainability. The Framework was developed in accordance with Green Bond Principles 2018 issued by International Capital Market Association ("ICMA").

We have undertaken a limited assurance engagement on the "Allocation of Proceeds" included in page 5 of NEA's Green Bond Report ("Report") for the period from 1 April 2022 to 31 March 2023. The Report has been prepared by NEA in accordance with the Framework. The Report is related to the S\$1.65 billion worth of green bonds (the "Bonds") issued on 15 September 2021.

### **Limited Assurance Conclusion**

Based on the procedures we have performed as described under the "Summary of the work we performed as the basis of our assurance conclusion" and the evidence we have obtained, nothing has come to our attention that causes us to believe that the "Allocation of Proceeds" included in page 5 of the Report for the period from 1 April 2022 to 31 March 2023, is not prepared, in all material respects, in accordance with the Framework.

Other than as described above which sets out the scope of our engagement, we do not express an assurance conclusion on the "Impact Reporting/Details of Expected Environmental Benefits" and any other information included in the Report.

### **Management's Responsibility**

Management is responsible for:

- Selecting or establishing suitable criteria for preparing the Report;
- Preparing the Report in accordance with the Framework;
- Designing, implementing, and maintaining appropriate internal controls over information relevant to the preparation of the Report that it is free from material misstatements, whether due to fraud or error;
- Designing, implementing, and maintaining internal controls to ensure compliance with the Framework, including the monitoring and reporting requirements, that arise from the issuance of the Bonds;
- Ensuring that the allocation of proceeds from the Bonds described in the Report are in accordance with the Framework; and
- Ensuring the completeness and integrity of the information provided to us during the limited assurance engagement.

## **Practitioner's Responsibility**

We are responsible for:

- Planning and performing the engagement to obtain limited assurance about whether the "Allocation of Proceeds" in the Report for the period from 1 April 2022 to 31 March 2023 is free from material misstatement, whether due to fraud or error;
- Forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and
- Reporting our conclusion to management of NEA.

As we are engaged to form an independent conclusion on the "Allocation of Proceeds" in the Report as prepared by management, we are not permitted to be involved in the preparation of the Report as doing so may compromise our independence.

## **Professional Standards Applied**

We performed a limited assurance engagement in accordance with Singapore Standard on Assurance Engagements 3000 (Revised) – Assurance Engagements other than Audits or Reviews of Historical Financial Information ("Standard").

## **Practitioner's Independence and Quality Management**

We have complied with the independence and other ethical requirements of the *Accounting and Corporate Regulatory Authority (ACRA) Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities* ("ACRA Code"), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies Singapore Standard on Quality Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

## **Summary of the work we performed as the basis of our assurance conclusion**

We are required to plan and perform our work to address the areas where we have identified that a material misstatement of the "Allocation of Proceeds" in the Report is likely to arise. The procedures we performed were based on our professional judgement. In carrying out our limited assurance engagement on the "Allocation of Proceeds" in the Report, we:

- Evaluated the suitability in the circumstances of NEA's use of the Framework, which addresses the applicability of the eligible green project, as the basis for preparing the "Allocation of Proceeds" in the Report;
- Through inquiries, obtained an understanding of NEA's policies, controls, processes and procedures relevant to the preparation of the "Allocation of Proceeds" in the Report, but did not evaluate the design of particular control activities, obtain evidence about their implementation or test their operating effectiveness;
- Recomputed the use of proceeds data included in the "Allocation of Proceeds" in the Report;
- Tested, on a sample basis, a number of proceeds and disbursements to supporting records, as appropriate;
- Considered the reporting and disclosure of the "Allocation of Proceeds" in the Report.



The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

**Purpose and Restriction on Distribution and Use**

This report is made solely to the management of NEA for the purpose of providing a limited assurance conclusion on the "Allocation of Proceeds" in the Report. As a result, this report may not be suitable for any other person or purpose and should not be referred to in any document or distributed to any other party without our prior written consent.

To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the management of NEA, as a body, for our assurance work, for this report, or for the opinions we have formed. If any third parties wish to rely upon any information contained in this report, they do so entirely at their own risk.

*Deloitte & Touche LLP.*

Public Accountants and  
Chartered Accountants  
Singapore

31 January 2024