

# PUB

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## Introduction

In August 2022, PUB, Singapore’s National Water Agency (“PUB” or the “Agency”) issued a green bond, (the “Green Bond”) under the PUB Green Financing Framework<sup>1</sup> (the “Framework”) aimed at financing sustainable water infrastructure that reduce emissions relative to baseline, prevent pollution of water sources, increase water recycling and reduce waste generation. The proceeds from the green bond issued in August 2022 have been identified for allocation to Tuas Water Reclamation Plant (WRP) and Tuas NEWater Factory 1 (TNF 1) projects. Sustainalytics provided a Second-Party Opinion<sup>2</sup> on the Framework in March 2022. In September 2023, PUB engaged Sustainalytics to review the projects funded between April 2022 and March 2023 with proceeds from the Green Bond and provide an assessment as to whether the projects met the use of proceeds criteria and the reporting commitments outlined in the Framework.

## Evaluation Criteria

Sustainalytics evaluated the projects and assets funded with proceeds from the 2022 Green Bond based on whether they:

1. Met the use of proceeds and eligibility criteria defined in the PUB Green Financing Framework; and
2. Reported on at least one key performance indicator (KPI) for each use of proceeds category defined in the PUB Green Financing Framework.

**Table 1: Use of Proceeds Categories, Eligibility Criteria and Associated KPIs**

Use of Proceeds Category	Eligibility Criteria	Key Performance Indicators
<b>Sustainable Water and Wastewater Management</b>	<p><u>Sub-category:</u></p> <p>Water monitoring including water quality monitoring and used water monitoring</p> <p><u>Criteria:</u></p> <ul style="list-style-type: none"> <li>• Net-zero or reduction in GHG emissions relative to business-as-usual baseline</li> <li>• Enables early detection and prompt intervention to prevent pollution of water sources and water losses in system</li> </ul>	<ul style="list-style-type: none"> <li>• GHG emissions avoided (tCO<sub>2</sub>e)</li> <li>• Sensor numbers/system coverage</li> </ul>
	<p><u>Sub-category:</u></p> <p>Water collection, storage and distribution including stormwater management systems and water distribution systems</p> <p><u>Criteria:</u></p> <ul style="list-style-type: none"> <li>• Net-zero or reduction in GHG emissions relative to business-as-usual baseline</li> </ul>	<ul style="list-style-type: none"> <li>• GHG emissions avoided (tCO<sub>2</sub>e)</li> <li>• Number of leaks avoided</li> <li>• System distribution losses (%)</li> </ul>

<sup>1</sup> The PUB Green Financing Framework is available on PUB’s website at: <https://www.pub.gov.sg/sustainability/green-financing-framework>

<sup>2</sup> PUB Second-Party Opinion is available at: [https://mstar-sustops-cdn-mainwebsite-s3.s3.amazonaws.com/docs/default-source/spos/pub-green-financing-framework-second-party-opinion.pdf?sfvrsn=304383aa\\_1](https://mstar-sustops-cdn-mainwebsite-s3.s3.amazonaws.com/docs/default-source/spos/pub-green-financing-framework-second-party-opinion.pdf?sfvrsn=304383aa_1)

	<ul style="list-style-type: none"> <li>Prevent water losses</li> </ul>	
	<p><u>Sub-category:</u>  Water treatment including water recycling systems and wastewater treatment systems</p> <p><u>Criteria:</u></p> <ul style="list-style-type: none"> <li>Net-zero or reduction in GHG emissions relative to business-as-usual baseline</li> <li>Prevent pollution of water sources</li> <li>Conservation of resources through water recycling</li> <li>Reduced waste generation</li> </ul>	<ul style="list-style-type: none"> <li>GHG emissions avoided (tCO<sub>2</sub>e)</li> <li>Amount of wastewater treated (m<sup>3</sup>)</li> <li>Recovery rate of wastewater recycling process (%)</li> <li>Amount of waste avoided/reduced (kg or m<sup>3</sup>)</li> </ul>
<b>Renewable Energy</b>	<p><u>Sub-category:</u>  Renewable Energy projects including solar PV systems and biogas generators</p> <p><u>Criteria:</u></p> <ul style="list-style-type: none"> <li>Net-zero or reduction GHG emissions relative to business-as-usual baseline</li> </ul>	<ul style="list-style-type: none"> <li>GHG emissions avoided (tCO<sub>2</sub>e)</li> <li>Amount of renewable energy generated (MWh)</li> </ul>

## Issuer’s Responsibility

PUB is responsible for providing accurate information and documentation relating to the details of the funded projects, including description of projects, amounts allocated and project impact.

## Independence and Quality Control

Sustainalytics, a leading provider of ESG research and ratings, conducted the verification of the use of proceeds from PUB’s Green Bond. The work undertaken as part of this engagement included collection of documentation from PUB and review of said documentation to assess conformance with the PUB Green Financing Framework.

Sustainalytics relied on the information and the facts presented by PUB. Sustainalytics is not responsible nor shall it be held liable for any inaccuracies in the opinions, findings or conclusions herein due to incorrect or incomplete data provided by PUB.

Sustainalytics made all efforts to ensure the highest quality and rigor during its assessment process and enlisted its Sustainability Bonds Review Committee to provide oversight of the review.

## Conclusion

Based on the limited assurance procedures conducted,<sup>3</sup> nothing has come to Sustainalytics’ attention that causes us to believe that, in all material respects, the reviewed projects do not conform with the use of proceeds criteria and reporting commitments in the PUB Green Financing Framework. PUB has disclosed to Sustainalytics that as of 31 March 2023, of the total SGD 800 million (USD 586.3 million)<sup>4</sup> raised, 39% of the proceeds (SGD 311.7 million) have been allocated towards financing and refinancing of the eligible projects. The Agency has communicated that full allocation of Green Bond proceeds towards the Tuas Water Reclamation Plant and Tuas NEWater Factory 1 projects is expected in Financial Year 2024.

<sup>3</sup> Sustainalytics’ limited assurance process includes reviewing the documentation relating to the details of the funded projects, including description of projects, their estimated and realized costs and impact, as provided by the issuing entity, which is responsible for providing accurate information. Sustainalytics has not conducted on-site visits to projects.

<sup>4</sup> The amount of loan balance is rounded to the nearest million. The exchange rate from October 9, 2023 was used in converting SGD to USD

## Detailed Findings

**Table 2: Detailed Findings**

<b>Framework Requirements</b>	<b>Procedure Performed</b>	<b>Factual Findings</b>	<b>Error or Exceptions Identified</b>
<b>Use of Proceeds Criteria</b>	Verification of the projects funded with proceeds from the 2022 Green Bond to determine if projects aligned with the use of proceeds criteria outlined in the Framework.	All projects reviewed complied with the use of proceeds criteria.	None
<b>Reporting Criteria</b>	Verification of the projects funded with proceeds from the 2022 Green Bond to determine if impact was reported in line with the KPIs outlined in the Framework.	All projects reviewed reported on at least one KPI per use of proceeds category.	None

## Appendices

### Appendix 1: Allocation Reporting by Eligibility Criteria

PUB has raised SGD 800 million through the issuance of its inaugural Green Bond. Of the SGD 311.7 million allocated, 69% of the proceeds were used for refinancing eligible projects. Sustainalytics notes that the remaining proceeds would be deployed at PUB's discretion in cash instruments in accordance with PUB's approved cash investment policy until full allocation.

**Table 3: Allocation Reporting**

Use of Proceeds Category	Project Category	Project Name	Net Proceeds Allocation (SGD)
Sustainable Water and Wastewater Management	Water Treatment	Tuas Water Reclamation Plant	290,392,375
		Tuas NEWater Factory 1	21,312,900
		Total Allocation	311,705,275

### Appendix 2: Impact Reporting by Use of Proceeds Criteria

**Table 4: Impact Reporting**

Use of Proceeds Category	Project Name	Indicators	Impact Reported <sup>5</sup>
Sustainable Water and Wastewater Management	Tuas Water Reclamation Plant	Operational GHG Emissions Avoided (kgCO <sub>2</sub> /m <sup>3</sup> ) from baseline <sup>6</sup>	0.004
		Prevent Pollution of Water Sources (million litres per day of Used Water Treatment Capacity)	82.4
		Reduced Waste Generation from baseline (kg/m <sup>3</sup> )	0.001
	Tuas NEWater Factory 1	Operational GHG Emissions Avoided (kgCO <sub>2</sub> /m <sup>3</sup> ) from baseline <sup>7</sup>	0.036
		Conservation of Resources through Water Recycling (million gallons per day of NEWater production capacity)	3.65
		Reduced Waste Generation from baseline (percentage points decrease in NEWater reject produced)	2.34

<sup>5</sup> The impact has been reported as per the amount allocated from the Green Bond by pro-rating the estimated total project impact based on the share of Green Bond financing.

<sup>6</sup> The baseline is a standalone water reclamation plant without Nexus synergies or enhanced biogas recovery.

<sup>7</sup> The baseline is the average performance of PUB's operational NEWater factories.

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