



GREEN FINANCING FRAMEWORK

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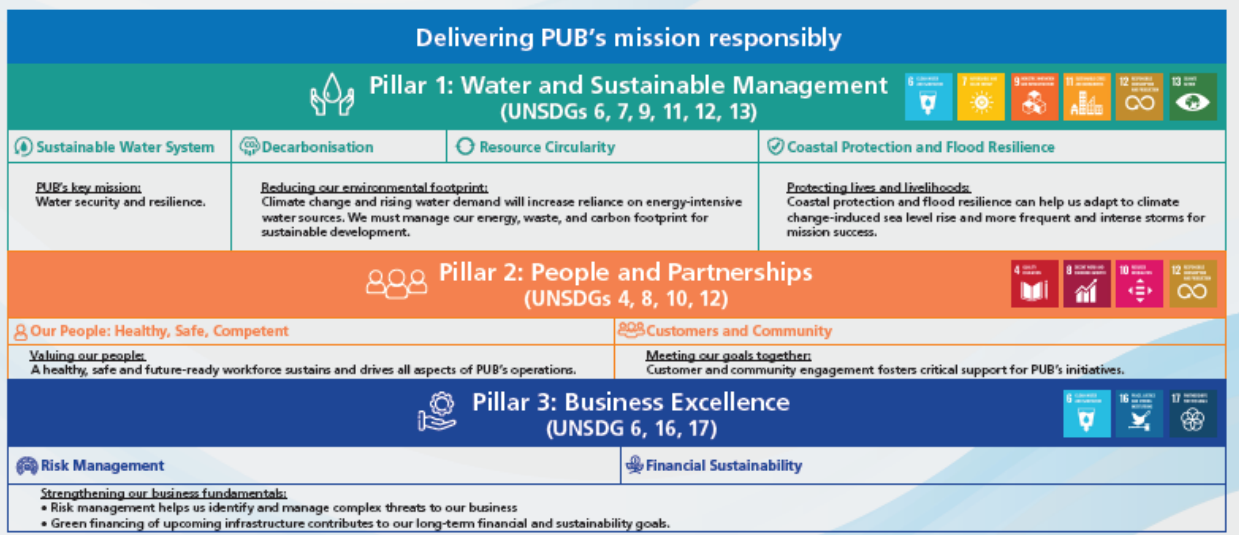
1. Background

1.1 About PUB

PUB is a statutory board under the Ministry of Sustainability and the Environment (MSE). As Singapore’s National Water Agency, PUB is responsible for the collection, production, distribution and reclamation of water in an integrated manner. In April 2020, PUB was appointed the national Coastal Protection Agency to lead and coordinate Whole-of-Nation efforts to protect Singapore’s coastline. Our mission is to supply good water, reclaim used water, tame stormwater and resist rising seas.

1.2 Sustainability in PUB

PUB has put in place a Sustainability Framework to guide our continuing efforts to achieve our mission. The three main pillars of PUB’s Sustainability Framework are: (1) Water and Sustainable Management; (2) People and Partnerships and (3) Business Excellence.



2 Green Financing Framework

PUB has established this Green Financing Framework (“**Framework**”) under which PUB issues Financing Instruments to finance and/or refinance new and/or existing projects related to climate change mitigation and natural resource conservation.

The Framework is aligned with the relevant international market standards and guidelines listed below, collectively referred to as “**Standards**”:

- International Capital Market Association (“ICMA”) Green Bond Principles 2021 (with June 2022 Appendix 1)
- ASEAN Green Bond Standards 2018 by the ASEAN Capital Markets Forum.

- Green Loan Principles 2023 by the Loan Market Association, Asia Pacific Loan Market Association and Loan Syndications and Trading Association.

In line with the Standards, the Framework comprises the following four core components:

1. Use of proceeds
2. Process for project evaluation and selection
3. Management of proceeds
4. Reporting

Under the Framework, PUB may issue Green Bonds and/or Green Loans where an amount equal to the net proceeds will be exclusively used to finance and/or re-finance eligible expenditures falling within the Eligible Green Project categories (see Section 3.1).

3 Use of Proceeds

The net proceeds raised from the Financing Instruments will be used exclusively to finance and/or refinance, in part or in full, new and/or existing projects which fall within the categories and meet the eligibility criteria described below in Section 3.1, with a two-year lookback period for refinancing projects. The eligibility criteria are aligned to the technical screening criteria of the Singapore-Asia Taxonomy (“SAT”), where applicable.

3.1 Eligible Green Project Categories

The eligibility criteria for the applicable Eligible Green Project categories are outlined in Table 1 below. The categories are also mapped to the UN Sustainable Development Goals (“SDGs”).

Table 1: List of Eligible Green Project categories

Project Category	Project sub-category	Criteria and Indicators
Sustainable water and wastewater management SDG 6: Clean water and sanitation SDG 11: Sustainable cities and communities SDG 12: Responsible consumption and production	Construction, Extension, Operation and Renewal of Water Collection, Treatment and Supply Systems – Distribution Networks (e.g. Water Distribution Systems)	% Distribution Loss in network segment is <10%.
	Construction, Extension, Operation and Renewal of Water Collection, Treatment and Supply Systems (Abstraction and Treatment Systems) (e.g. Waterworks).	The net average energy consumption for abstraction and treatment is $\leq 0.5\text{kWh/m}^3$ ^{1,2} of water produced for supply. Note 1: Net energy consumption may consider measures that decrease energy consumption, such as source control (pollutant load inputs), and, as appropriate, onsite or offsite energy generation (such as hydraulic, solar and wind energy).

		Note 2: Net energy consumption excludes energy associated with pumping of potable water from the water treatment plant to the distribution network.
	Construction, Extension, Operation and Renewal of Wastewater Collection and Treatment Systems (e.g. Water Reclamation Plants).	The net energy consumption of the wastewater treatment plant is ≤ 0.27 kWh/m ³ ^{1,2,3} of wastewater treated. Note 1: Net energy consumption may consider measures that decrease energy consumption, such as source control (pollutant load inputs), and, as appropriate, onsite or offsite energy generation (such as hydraulic, solar and wind energy). Note 2: Net energy consumption excludes energy associated with pumping of used water via Deep Tunnel Sewerage System (DTSS) to the wastewater treatment plant. Note 3: Based on the definitions in the Singapore Asia Taxonomy as follows: (a) The green threshold for wastewater treatment plant capacities above 100,000 population equivalent (p.e.) is 20 kWh/p.m. per annum. (b) 1 p.e. is defined as 200L/day of used water, and 1 p.e. per annum is hence 73 m ³ of used water. The ratio of 20 kWh to 73 m ³ of used water treated is about 0.27 kWh/m ³ .
	Construction, Extension, Operation and Renewal of NEWater¹ Treatment Systems (e.g. NEWater plants). Note 1: NEWater is Singapore's local supply of high-grade reclaimed water that is treated from wastewater.	<ul style="list-style-type: none"> • Reduction in specific energy consumption from baseline, <u>and</u> • Achieve conservation of resources through recovery of treated wastewater to NEWater.
Renewable Energy SDG 7: Affordable and clean energy SDG 13: Climate action	Solar Energy (e.g. rooftop or floating solar PV systems).	<ul style="list-style-type: none"> • Automatically eligible.
	Bioenergy (e.g. biogas generators).	<ul style="list-style-type: none"> • Bioenergy is produced from waste feedstock with lifecycle emission intensity of electricity generated $\leq 100\text{gCO}_2\text{e/kWh}$.

4 Process for Project Evaluation and Selection

All PUB departments shall consider and nominate any Eligible Green Project(s) set out as described in Section 3 to the Sustainability Committee. For the nominated projects, an environmental screening will be carried out for projects that are located in biodiversity-sensitive areas, and where relevant, Environmental Impact Assessments will also be conducted.

The Sustainability Committee is chaired by Deputy Chief Executive (Policy and Development), and comprises Deputy Chief Executive (Operations), Assistant Chief Executive and various

Department Directors as committee members. The Sustainability Committee has overall responsibility for implementing the Framework. The main responsibilities include:

- Reviewing nominated projects.
- Updating the Framework (where necessary), including the scope of financial instruments covered by this Framework and the process for project evaluation and selection.

The nominated projects will be reviewed by the Sustainability Committee to ensure that they meet the criteria under the Framework. All Eligible Green Projects will be reviewed by the Sustainability Committee and approved by the Chief Executive.

After the projects are approved and considered as Eligible Green Projects in accordance with the Framework, they will be earmarked for the use of proceeds under the Framework.

5 Management of Proceeds

The proceeds from the various Financing Instruments will be credited into a general account. PUB will manage a Financing Instrument register (“**Register**”) to monitor and record the allocation of the proceeds from each Financing Instrument. The Register will contain (where applicable) the following information for each Financing Instrument issued:

- Details of the Financing Instruments.
- Net Proceeds from the Financing Instruments.
- Net Proceeds Allocated to the Eligible Green Projects.
- Details of the Eligible Green Projects.

The proceeds from each Financing Instrument will be allocated to new and/or existing Eligible Green Projects within 3 years from the date of issuance. Where necessary, additional Eligible Green Projects will be included to ensure sufficient and timely allocation of the proceeds from each Financing Instrument.

If any Eligible Green Project no longer complies with the eligibility criteria outlined in this Framework, PUB will use its best endeavours to allocate the specific proceeds to other Eligible Green Projects as soon as reasonably practicable.

Where the allocation of proceeds is pending due to there being insufficient approved Eligible Green Projects at any given time during the tenor of the bond, PUB will deploy the proceeds at its own discretion in cash instruments in accordance with PUB’s approved cash investment policy in the interim.

Any unallocated amount will not be invested in any instruments, which may contribute to any carbon intensive activities or facilities.

6 Reporting

For Green Bonds, starting from the first anniversary of the bond issuance under the Framework until full allocation of the net proceeds, PUB will make the information on allocation and impact reporting publicly available on its website via a report.

For Green Loans, starting from the first anniversary of the loan issued under the Framework until full allocation of the net proceeds, PUB will also make the information readily available to its lenders via a report upon request.

6.1 Allocation Reporting

On an annual basis until full allocation of the net proceeds, PUB intends to report the following information for each Financing Instrument issued:

- Amount of allocated proceeds by Eligible Green Project categories (as outlined in Section 3).
- Amount of allocated proceeds for financing and refinancing.
- Amount of unallocated proceeds at the end of reporting period, if any.
- Description of Eligible Green Projects

The information may be presented in generic terms in the event confidentiality limits the amount of detail that can be made available.

6.2 Impact Reporting

On an annual basis until full allocation of the net proceeds, where relevant and applicable, PUB intends to report on the impact of the Eligible Green Projects funded by each Financing Instrument. Indicative impact indicators that may be used are as follows.

Table 2: List of indicative impact indicators that may be used in impact reporting

Project Category	Project sub-category	Indicative Impact Indicators
Sustainable water and wastewater management	Construction, Extension, Operation and Renewal of Water Collection, Treatment and Supply Systems – Distribution Networks (e.g. Water Distribution Systems)	<ul style="list-style-type: none"> • Distribution Loss (%).
	Construction, Extension, Operation and Renewal of Water Collection, Treatment and Supply Systems (Abstraction and Treatment Systems) (e.g. Waterworks).	<ul style="list-style-type: none"> • Specific energy consumption (kWh/m³ of water produced for supply).
	Construction, Extension, Operation and Renewal of	<ul style="list-style-type: none"> • Specific energy consumption (kWh/m³ of wastewater treated).

	<p>Wastewater Collection and Treatment Systems (e.g. Water Reclamation Plants).</p> <p>Construction, Extension, Operation and Renewal of NEWater¹ Treatment Systems (e.g. NEWater plants).</p> <p>Note 1: NEWater is Singapore’s local supply of high-grade reclaimed water that is treated from wastewater.</p>	<ul style="list-style-type: none"> • Reduction in specific energy consumption from baseline, <u>and</u> • Achieve conservation of resources through recovery of treated wastewater to NEWater.
Renewable Energy	<p>Solar Energy (e.g. rooftop or floating solar PV systems).</p>	<ul style="list-style-type: none"> • Amount of renewable energy generated (MWh).
	<p>Bioenergy (e.g. biogas generators).</p>	<ul style="list-style-type: none"> • Amount of renewable energy generated (MWh), <u>and</u> • Lifecycle emission intensity (gCO₂e/kWh of energy generated)

Where there are confidentiality concerns that limits the amount of details that can be made available, PUB may choose to present the information in generic terms or on an aggregated portfolio basis.

7 External Review

7.1 Pre-Issuance External Review

PUB has engaged an independent external reviewer to provide a Second-Party Opinion (“SPO”) on the Framework. The SPO will be made publicly available on PUB’s website. This SPO will be done on a one-off basis, unless there are material changes to the Framework.

7.2 Post-Issuance External Review

For Green Bonds, PUB will engage an independent provider to provide annual external verification on the alignment of the allocation and impact reporting with the Framework, until full allocation of the net proceeds. The post-issuance external review will be made available on PUB’s website.

For Green Loans, PUB can also engage an independent provider to provide annual external verification on the alignment of the allocation and impact reporting with the Framework, until full allocation of the net proceeds. The post-issuance verification report will be made available to its lender(s).

8 Amendments to this Framework

The Framework will be reviewed on a regular basis, including its alignment to updated versions of the Standards as and when they are released, with the aim of adhering to market best practices. Such review may result in this Framework being updated and amended. The updates will be subject to the prior approval of the Sustainability Committee. The updated Framework, if any, will be published on the website and will replace this Framework.