



PUBLIC UTILITIES BOARD

SECOND PARTY OPINION : GREEN FINANCING  
FRAMEWORK (DATED MARCH 2025)



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### **Disclaimer**

Our assessment relies on the premise that the data and information provided by the client to us as part of our review procedures are provided in good faith. Because of the selected nature (sampling) and other inherent limitation of both procedures and systems of internal control, there remains the unavoidable risk that errors or irregularities, possibly significant, may not be detected. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied as per scope of work. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Statement.

### **Statement of Competence and Independence**

DNV applies its own management standards and compliance policies for quality control, in accordance with ISO/IEC 17029:2019 - Conformity Assessment - General principles and requirements for validation and verification bodies, and accordingly maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. We have complied with the DNV Code of Conduct during the assessment and maintain independence where required by relevant ethical requirements.

## DNV'S INDEPENDENT ASSESSMENT

### Scope and Objectives

The Public Utilities Board ("PUB"), Singapore's National Water Agency, is a Statutory Board under the Ministry of Sustainability and the Environment ("MSE"). PUB is responsible for the collection, production, distribution and reclamation of water in an integrated manner. PUB is also the National Coastal Protection Agency to lead, coordinate and explore Whole-of-Nation efforts to protect Singapore's coastline. PUB's mission is to supply good water, reclaim used water, tame stormwater and resist rising seas.

PUB has developed a Green Financing Framework ("Framework") with the aim to raise Green Finance Instruments ("GFIs") to finance or refinance new and existing projects as part of its sustainable business strategies and commitment to environmental well-being, as described in the Framework. The Framework is in alignment with the stated standards and principles (collectively the "Standards, Schemes & Principles"):

- Green Bond Principles ("GBP") issued by the International Capital Markets Association ("ICMA") in June 2021 and updated with Appendix 1 in June 2022
- Green Loan Principles ("GLP") issued by the Loan Market Association ("LMA") / Asia-Pacific Loan Market Association ("APLMA") / Loan Syndications and Trading Association ("LSTA") in February 2023
- ASEAN Green Bond Standards ("ASEAN GBS") issued by the ASEAN Capital Markets Forum ("ACMF") in October 2018
- Singapore-Asia Taxonomy ("SAT") launched by the Monetary Authority of Singapore ("MAS") in December 2023

DNV Business Assurance Singapore Pte Ltd ("DNV") has been commissioned by PUB to review its Framework and provide a Second Party Opinion on the Framework, based on its alignment with the Standards, Schemes & Principles.

Our methodology to achieve this is described under 'Work Undertaken' below. We were not commissioned to provide independent assurance or other audit activities.

### Responsibilities of the Management of PUB and DNV

The management of PUB has provided the information and data used by DNV during the delivery of this review. Our statement represents an independent opinion and is intended to inform PUB management and other interested stakeholders in the Framework as to whether the Framework is aligned with the stated Standards, Schemes & Principles. In our work we have relied on the information and the facts presented to us by PUB. DNV is not responsible for any aspect of the nominated assets referred to in this opinion and cannot be held liable if estimates, findings, opinions, or conclusions are incorrect. Thus, DNV shall not be held liable if any of the information or data provided by PUB's management and used as a basis for this assessment were not correct or complete.

## Basis of DNV's Opinion

We have adapted our assessment methodology to create the PUB-specific Eligibility Assessment Protocol (henceforth referred to as "Protocol"). Our Protocol includes a set of suitable criteria that can be used to underpin DNV's opinion.

As per our Protocol, the criteria against which the Framework has been reviewed are grouped under the four core components:

### 1. Use of Proceeds

The Use of Proceeds criteria are guided by the requirement that an issuer of a bond / a borrower of a loan must use the funds raised to finance or refinance or to repay equity of eligible activities. The eligible activities should produce clear environmental and social benefits.

### 2. Process for Project Evaluation and Selection

The Project Evaluation and Selection criteria are guided by the requirements that an issuer of a bond / a borrower of a loan should outline the process it follows when determining eligibility of an investment using Green Bond/Loan proceeds and outline any impact objectives it will consider.

### 3. Management of Proceeds

The Management of Proceeds criteria are guided by the requirements that a bond/loan should be tracked within the organization, that separate portfolios should be created when necessary and that a declaration of how unallocated funds will be handled.

### 4. Reporting

The Reporting criteria are guided by the recommendation that at least annual reporting should be made of the use of proceeds and that quantitative and/or qualitative performance indicators should be used, where feasible.

No assurance is provided regarding the financial performance of instruments issued via the Framework, the value of any investments, or the long-term environmental benefits of the transaction. Our objective has been to provide an assessment that the Framework has met the criteria established on the basis set out below.

## Work Undertaken

Our work constituted a high-level review of the available information, based on the understanding that this information was provided to us by PUB in good faith. We have not performed an audit or other tests to check the veracity of the information provided to us. The work undertaken to form our opinion included:

- Creation of a Protocol, adapted to the purpose of the bond, as described above and in Schedule 3 to this Assessment;
- Assessment of documentary evidence provided by PUB and supplemented by a high-level desktop research. These checks refer to current assessment best practices and standards methodology;
- Review of published materials by PUB and PUB's website;
- Discussions with PUB's management, and review of relevant documentation and evidence related to the criteria of the Protocol; and
- Documentation of findings against each element of the criteria.

Our opinion as detailed below is a summary of these findings.

## Findings and DNV's Opinion

DNV's findings on the alignment with Standards, Schemes & Principles are listed below:

### 1. Use of Proceeds

PUB intends to use the net proceeds of the GFIs to finance and/or refinance eligible green projects as defined in its Framework.

The Framework defines the following eligible project categories.

- Sustainable water and wastewater management
- Renewable Energy

DNV's analysis of the eligible project categories to be financed or refinanced under this Framework, and an assessment of alignment with the Standards, Schemes & Principles and specifically the SAT, is set out in Schedule 1. DNV's assessment on the contribution of the eligible project categories to the UN Sustainable Development Goals ("UN SDGs") is set out in Schedule 2.

DNV undertook an analysis of the associated project types to determine the eligibility as Green and in line with the Standards, Schemes & Principles. DNV concludes that the eligible categories outlined in the Framework are consistent with the categories outlined in the Standards, Schemes & Principles.

### 2. Process for Project Evaluation and Selection

PUB has set up an evaluation and selection process in the form of a Sustainability Committee chaired by Deputy Chief Executive (Policy and Development), comprising 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 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.

DNV concludes that PUB's Framework appropriately describes the process for Project Evaluation and Selection and is aligned with the criteria set out in the Standards, Schemes & Principles.

### 3. Management of Proceeds

PUB describes the process for management of net proceeds under this Framework as follows:

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.

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.

DNV has reviewed the evidence presented and concludes that the Framework appropriately describes the process for Management of Proceeds and is aligned with the criteria set out in the Standards, Schemes & Principles.

#### 4. Reporting

For Green Bonds, PUB will publish allocation and impact reporting annually on its website, starting from the first anniversary of issuance until full allocation of the net proceeds.

For Green Loans, PUB will provide allocation and impact reporting annually upon request to lenders, from the first anniversary of issuance until full allocation of the net proceeds.

The report will consist of relevant information with regards to the allocation of proceeds as well as quantitative reporting metrics for the purpose of impact reporting.

Based on the limited assurance procedures conducted, nothing has come to our attention that causes us to believe that the green bonds to be issued are not, in all material respects, in accordance with the Pre-Issuance requirements of the associated eligible green project categories, and the Standards, Schemes & Principles. On the basis of this information, DNV is of the opinion that the Framework meets the criteria established in the protocol and are aligned with the GBP, GLP, ASEAN GBS and SAT.

#### For DNV Business Assurance Singapore Pte Ltd

Singapore / 21 March 2025



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Jerus D'Silva  
**Quality Reviewer**



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Vigilia Ang  
**Lead Verifier**

## Schedule 1. Description of Categories to be financed or refinanced through PUB’s Green Finance Instruments

Schedule 1 presents the analysis of eligible project categories to be financed or refinanced through PUB’s GFIs, along with an assessment of their alignment with the Standards, Schemes, Principles, and specifically the SAT.

Eligible Green Project Categories	Eligible Criteria and Description	DNV Findings
Sustainable water and wastewater management	<b>Construction, Extension, Operation and Renewal of Water Collection, Treatment and Supply Systems – Distribution Networks</b> (e.g. Water Distribution Systems) <ul style="list-style-type: none"> <li>• % Distribution Loss in network segment is &lt;10%.</li> </ul>	DNV considers the criteria listed to be aligned with the Green classification of the following activities established in the SAT: <ul style="list-style-type: none"> <li>• 9.3. Construction, extension and operation of water collection, treatment and supply systems (distribution networks)</li> <li>• 9.4. Renewal of water collection, treatment and supply systems (distribution networks)</li> </ul> DNV considers the proposed activity to be aligned with the criteria for eligible green projects under the Standards, Schemes & Principles.
	<b>Construction, Extension, Operation and Renewal of Water Collection, Treatment and Supply Systems (Abstraction and Treatment Systems)</b> (e.g. Waterworks). <ul style="list-style-type: none"> <li>• The net average energy consumption for abstraction and treatment is &lt; 0.5kWh/m<sup>3</sup><sup>1,2</sup> of water produced for supply.</li> </ul>	DNV considers the criteria listed to be aligned with the Green classification of the following activities established in the SAT: <ul style="list-style-type: none"> <li>• 9.1. Construction, extension and operation of new water collection and treatment systems (abstraction and treatment systems)</li> <li>• 9.2. Renewal of water collection, treatment and supply systems</li> </ul> DNV considers the proposed activity to be aligned with the criteria for eligible green projects under the Standards, Schemes & Principles.
	<b>Construction, Extension, Operation and Renewal of Wastewater Collection and Treatment Systems</b> (e.g. Water Reclamation Plants).	DNV considers the criteria listed to be aligned with the Green classification of the following activities established in the SAT:

<sup>1</sup> 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).

<sup>2</sup> Net energy consumption excludes energy associated with pumping of potable water from the water treatment plant to the distribution network.

	<ul style="list-style-type: none"> <li>The net energy consumption of the wastewater treatment plant is &lt; 0.27 kWh/m<sup>3</sup><sup>3,4,5</sup> of wastewater treated.</li> </ul>	<ul style="list-style-type: none"> <li>9.6. Construction, extension and operation of wastewater collection and treatment</li> <li>9.7. Renewal of wastewater collection and treatment</li> </ul> <p>The criteria listed is aligned to the threshold for water treatment plant capacity, of greater than 100,000 population equivalent.</p> <p>DNV considers the proposed activity to be aligned with the criteria for eligible green projects under the Standards, Schemes &amp; Principles.</p>
	<p><b>Construction, Extension, Operation and Renewal of NEWater<sup>6</sup> Treatment Systems</b> (e.g. NEWater plants).</p> <ul style="list-style-type: none"> <li>Reduction in specific energy consumption from baseline, <u>and</u></li> <li>Achieve conservation of resources through recovery of treated wastewater to NEWater.</li> </ul>	<p>The NEWater process recycles treated used water into ultra-clean, high-grade reclaimed water, cushioning Singapore's water supply against dry weather and moving Singapore towards water sustainability.</p> <p>DNV considers the proposed activity to be aligned with the criteria for eligible green projects under the Standards, Schemes &amp; Principles.</p>
Renewable Energy	<p><b>Solar Energy</b> (e.g. rooftop or floating solar PV systems). Automatically eligible.</p>	<p>DNV considers the criteria listed to be aligned with the Green classification of the following activities established in the SAT:</p> <ul style="list-style-type: none"> <li>1.1. Electricity generation using solar photovoltaic and concentrating solar power</li> </ul> <p>All energy generation activities from solar PV and solar CSP are automatically considered green.</p> <p>DNV considers the proposed activity to be aligned with the criteria for eligible green projects under the Standards, Schemes &amp; Principles.</p>
	<p><b>Bioenergy</b> (e.g. biogas generators)</p>	<p>DNV considers the criteria listed to be aligned with the Green classification of the following activities established in the SAT:</p>

<sup>3</sup> 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).

<sup>4</sup>Net energy consumption excludes energy associated with pumping of used water via Deep Tunnel Sewerage System (DTSS) to the wastewater treatment plant.

<sup>5</sup> 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<sup>3</sup> of used water. The ratio of 20 kWh to 73 m<sup>3</sup> of used water treated is about 0.27 kWh/m<sup>3</sup>.

<sup>6</sup> NEWater is Singapore's local supply of high-grade reclaimed water that is treated from wastewater.





	<ul style="list-style-type: none"><li>• Bioenergy is produced from waste feedstock with lifecycle emission of electricity generated is <math>\leq</math> 100gCO<sub>2</sub>e/kWh.</li></ul>	<ul style="list-style-type: none"><li>• 1.5. Electricity generation from bioenergy power</li></ul> <p>The criteria listed in PUB's framework is aligned with the SAT, specifically to the requirements for bioenergy produced from waste.</p> <p>DNV considers the proposed activity to be aligned with the criteria for eligible green projects under the Standards, Schemes &amp; Principles.</p>
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### **Do No Significant Harm (DNSH) Assessment**

DNV notes that the SAT currently does not mandate DNSH assessments for activities classified and assessed in the early implementation phase of the SAT. As a result, DNV did not provide an opinion on DNSH for the listed/proposed activities.

The PUB Framework has stated that, *"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."*



## Schedule 2. Contributions to UN SDGs

Eligible Project Categories	UN SDGs	DNV Findings
Sustainable water and wastewater management	SDG 6: Clean water and sanitation SDG 11: Sustainable cities and communities SDG 12: Responsible consumption and production	DNV is of the opinion that the eligible project categories outlined in the Framework contributes to the achievement of the listed UN SDGs.
Renewable Energy	SDG 7: Affordable and clean energy SDG 13: Climate action	

## Schedule 3. Eligibility Assessment Protocol (GBP/GLP)

### 1. Use of Proceeds

Ref.	Criteria	Requirements	DNV Findings
1a	Type of Bond / Loan	<p>The Bond/Loan must fall in one of the following categories, as defined by the Standards, Schemes &amp; Principles:</p> <ul style="list-style-type: none"> <li>• Green Use of Proceeds Bond</li> <li>• Green Use of Proceeds Revenue Bond</li> <li>• Green Project Bond</li> <li>• Green Securitized Bond</li> <li>• Loan instrument made available for Green project (Green use of loan proceeds)</li> </ul>	<p>The Framework states that the proceeds from the GFIs must be utilised for eligible green expenditures which contribute to the environmental objectives established by PUB in the Framework.</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>From the Framework:</b></p> <p>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.</p> </div> <p>The reviewed evidence confirms that the Green Financing Instruments meet the criteria under the GBP, GLP, and ASEAN GBS, and DNV confirms this process to be aligned with the Standards, Schemes &amp; Principles.</p>
1b	Green Project Categories	<p>The cornerstones of Green Bonds and Loans are the utilization of the proceeds of the bonds or the loans which should be appropriately described in the legal documentation for the security.</p>	<p>Eligible project category presented by PUB are as follows:</p> <ul style="list-style-type: none"> <li>• Sustainable Water and Wastewater Management</li> <li>• Renewable Energy</li> </ul> <p>The above-mentioned project categories meets the Eligible Green Project categories in the GBP, GLP, and ASEAN GBS. DNV confirms this to be aligned with the Standards, Schemes &amp; Principles.</p>
1c	Environmental Benefits	<p>All designated Green Project categories should provide clear environmentally sustainable benefits, which, where feasible, will be quantified or assessed by the Issuer.</p>	<p>Climate change impacts every part of PUB’s mission. PUB is tackling rising sea levels as Singapore’s Coastal Protection Agency and must manage the energy requirements of PUB’s operations while transiting to a low-carbon future. A Board Sustainability Committee (BSC) was formed on 1 April 2023 and is convened biannually to provide technical expertise and strategic guidance in areas such as coastal protection, energy sustainability and decarbonisation.</p>

			<p>The Eligible Green Project Categories in the Framework are designed to help PUB achieve environmental benefits, specifically in the pillar of water and sustainable management. These categories encompass initiatives that enhance water efficiency, promote the development of climate-resilient infrastructure, and support the adoption of renewable energy solutions. These projects help PUB achieve its targets and commitments such as (but not limited to):</p> <ul style="list-style-type: none"> <li>• Improving Water Efficiency Index</li> <li>• Achieve net zero emissions around 2045</li> <li>• Reduce Waste Disposal Index by 30% from 2022 levels by 2030<sup>7</sup></li> </ul> <p>DNV confirms that the proposed use of proceeds will reasonably be expected to deliver meaningful environmental benefits.</p>
1d	Refinancing Share	In the event that a proportion of the proceeds may be used for refinancing, it is recommended that issuers provide an estimate of the share of financing vs. re-financing, and where appropriate, also clarify which investments or project portfolios may be refinanced.	<p>PUB has provided details on the intended refinancing vs. financing share from the issuance of the GFIs under its Framework.</p> <p>Specifically, there will be a two-year lookback period for refinancing projects. Additionally, PUB will also disclose the amount of allocated proceeds for financing and refinancing on an annual basis (until full allocation) in its allocation reporting.</p> <p>The proposed management of net proceeds from the Green Finance Instruments is confirmed by DNV to be expected to meet the criteria under the Standards, Schemes &amp; Principles.</p>

<sup>7</sup> Applicable to PUB's Standard Buildings only.

## 2. Process for Project Selection and Evaluation

Ref.	Criteria	Requirements	DNV Findings
2a	Investment-Decision Process	<p>The Issuer of a Green Bond and Loan should outline the decision-making process it follows to determine the eligibility of projects using Green Bond and Loan proceeds. This includes, without limitation:</p> <ul style="list-style-type: none"> <li>• The environmental objectives of the eligible Green Projects;</li> <li>• The process by which the issuer determines how the projects fit within the eligible Green Projects categories; and</li> <li>• Complementary information on processes by which the issuer identifies and manages perceived environmental and social risks associated with the relevant project(s).</li> </ul>	<p>PUB has in place a process for which it will follow appropriate project selection and evaluation. PUB departments shall consider and nominate any Eligible Green Projects (as per the eligibility criteria set out in the Framework). Environmental screening will be carried out for nominated projects that are located in biodiversity-sensitive areas, and where relevant, Environmental Impact Assessments will also be conducted.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>From the Framework:</b></p> <p>The Sustainability Committee is chaired by Deputy Chief Executive (Policy and Development), and comprise of 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:</p> <ul style="list-style-type: none"> <li>• Reviewing nominated projects.</li> <li>• Updating the Framework (where necessary), including the scope of financial instruments covered by this Framework and the process for project evaluation and selection.</li> </ul> <p>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.</p> <p>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.</p> </div> <p>DNV confirms this process for project selection and evaluation to be aligned with the Standards, Schemes &amp; Principles.</p>
2b	Issuer / Borrower's Environmental and Governance Framework	<p>Issuers are also encouraged to:</p> <ul style="list-style-type: none"> <li>• Position the relevant information within the context of the issuer's overarching objectives, strategy,</li> </ul>	<p>PUB has in place a Sustainability Framework to guide their efforts in achieving their mission. There are three main pillars of PUB's Sustainability Framework – Water and Sustainable Management, People and Partnerships and Business Excellence.</p>

		<p>policy and/or processes relating to environmental sustainability.</p> <ul style="list-style-type: none"> <li>• Provide information, if relevant, on the alignment of projects with official or market-based taxonomies, related eligibility criteria</li> <li>• Have a process in place to identify mitigants to known material risks of negative environmental and/or social impacts from the relevant project(s).</li> </ul>	<p>Under Water and Sustainable Management, there are four material topics.</p> <ol style="list-style-type: none"> <li>1. Sustainable Water System Singapore's water demand is expected to nearly double by 2065, driven by economic and population growth, with PUB promoting water efficiency while investing in infrastructure and weather-resilient sources like NEWater to ensure long-term sustainability. PUB has built up a resilient and sustainable water system founded on three broad strategies: Sustainable Supply, Sustainable Demand and Sustainable Operations.</li> <li>2. Coastal Protection and Flood Resilience Singapore's flood resilience is challenged by rising sea levels and more intense rainfall due to climate change. Given that over one-third of the island is less than 5m above mean sea level, PUB is implementing an integrated approach to coastal protection and flood resilience to safeguard critical infrastructure and adapt to climate change.</li> <li>3. Decarbonisation Singapore aims to achieve net zero emissions by 2050, with PUB targeting net zero around 2045, depending on technological advancements and international collaboration. Aligned with the public sector targets under the GreenGov.SG Initiative, PUB's 3Rs decarbonisation strategy will support the nation's transition to a low-carbon future.</li> <li>4. Resource Circularity To reduce reliance on Semakau Landfill, which is projected to reach capacity by 2035, PUB is working to minimise sewage sludge waste from water reclamation plants, which is currently incinerated before disposal.</li> </ol> <p>DNV confirms that PUB's environmental, social, and governance (ESG) strategies and grouping of projects with eligibility criteria, are aligned with the Standards, Schemes &amp; Principles.</p>
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### 3. Management of Proceeds

Ref.	Criteria	Requirements	DNV Findings
3a	Tracking Procedure	<ul style="list-style-type: none"> <li>(Bond) The net proceeds of Green Bonds should be credited to a sub-account, moved to a sub- portfolio or otherwise tracked by the Issuer in an appropriate manner and attested to by a formal internal process that will be linked to the Issuer’s lending and investment operations for Green Projects.</li> <li>(Loan) The proceeds of Green Loans should be credited to a dedicated account or otherwise tracked by the borrower in an appropriate manner, so as to maintain transparency and promote the integrity of the product. Where a green loan takes the form of one or more tranches of a loan facility, each green tranche(s) must be clearly designated, with proceeds of the green tranche(s) credited to a separate account or tracked by the borrower in an appropriate manner.</li> </ul>	<p>The Framework explains the tracking procedure for the net proceeds of the GFIs.</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>From the Framework:</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>• Details of the Financing Instruments.</li> <li>• Net Proceeds from the Financing Instruments.</li> <li>• Net Proceeds Allocated to the Eligible Green Projects.</li> <li>• Details of the Eligible Green Projects.</li> </ul> </div> <p>DNV confirms that the Framework outlines processes to track proceeds and allocations to the nominated projects, that are aligned with the Standards, Schemes &amp; Principles.</p>
3b	Tracking Procedure	So long as the Green Bonds or Loans are outstanding, the balance of the tracked proceeds should be periodically reduced by amounts matching eligible green investments or loan disbursements made during that period.	<p>The Framework explains the relevant tracking procedure:</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>From the Framework:</b></p> <p>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.</p> </div> <p>Additionally, the Framework also explains the procedure for which eligible Green projects no longer comply with the criteria stated the Framework.</p>

			<p><b>From the Framework:</b></p> <p>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.</p> <p>DNV confirms that the Framework outlines processes to track proceeds and allocations to the nominated projects, that are aligned with the Standards, Schemes &amp; Principles.</p>
3c	Temporary Holdings	Pending such investments or disbursements to eligible Green Projects, the Issuer should make known to investors the intended types of temporary investment instruments for the balance of unallocated proceeds.	<p>The Framework explains the intended types of temporary investment instruments for the balance of unallocated proceeds.</p> <p><b>From the Framework:</b></p> <p>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.</p> <p>Any unallocated amount will not be invested in any instruments, which may contribute to any carbon intensive activities or facilities.</p> <p>DNV confirms that the Framework outlines instruments to which unallocated proceeds will be invested, that are aligned with the Standards, Schemes &amp; Principles.</p>





**DNV**

## 4. Reporting

Ref.	Criteria	Requirements	DNV Findings
4a	Periodical Reporting	<ul style="list-style-type: none"> <li>• Issuers should make, and keep, readily available up to date information on the use of proceeds to be renewed annually until full allocation, and on a timely basis in case of material developments.</li> <li>• The annual report should include a list of the projects to which Green Bond proceeds have been allocated, as well as a brief description of the projects, the amounts allocated, and their expected impact.</li> <li>• Where confidentiality agreements, competitive considerations, or a large number of underlying projects limit the amount of detail that can be made available, the GBP recommend that information is presented in generic terms or on an aggregated portfolio basis (e.g. percentage allocated to certain project categories).</li> </ul>	<p>PUB will publish allocation and impact reporting for Green Bonds annually on its website, starting from the first anniversary of issuance until full allocation of the net proceeds.</p> <p>PUB will provide allocation and impact reporting for Green Loans annually upon request to lenders, from the first anniversary of issuance until full allocation of the net proceeds.</p> <p>For allocation reporting, PUB will report on the following information:</p> <ul style="list-style-type: none"> <li>• Amount of allocated proceeds by Eligible Green Project categories</li> <li>• Amount of allocated proceeds for financing and refinancing.</li> <li>• Amount of unallocated proceeds at the end of reporting period, if any.</li> <li>• Description of Eligible Green Projects</li> </ul> <p>For impact reporting, PUB will report on the impact of the Eligible Green Projects funded by each Financing Instrument. Examples of impact indicators that may be used are stated in the Framework.</p> <p>DNV confirms that the proposed reporting is consistent with the criteria set out in the Standards, Schemes &amp; Principles.</p>

## Schedule 4. Eligibility Assessment Protocol (ASEAN GBS)

### Summary criteria for assertions of compliance with the ASEAN Green Bond Standards 2018 and compliance conclusion.

The criteria against which the PUB Green Financing Framework has been reviewed prior to inclusion in the Bond, are grouped under the requirements as detailed within the ASEAN Green Bond Standards 2018.

#### 3.0: Criteria for ASEAN Green Bonds

Criteria	Requirements	Demonstrated Compliance
3.1	(i) Must be an ASEAN Issuer, or; (ii) In the case of a Non-ASEAN Issuer, the eligible Green and Social Projects must be located in any of the ASEAN countries.	The issuer is PUB, a statutory board under the Ministry of Sustainability and the Environment (MSE) of Singapore, an ASEAN Member State.
3.2	ASEAN Green Bonds issuances must be originated from any of the ASEAN member countries.	The bonds are to be originated from Singapore, an ASEAN Member State.

#### 4.0: Guidance for the Four Components of the GBP

##### 4.1 Use of Proceeds

Criteria	Requirements	Demonstrated Compliance
4.1.1	The utilisation of proceeds from the ASEAN Sustainable Bonds must be described in the documentation for issuance of the ASEAN Sustainable Bonds.	PUB has set out the criteria for its Use of Proceeds in its Green Financing Framework. Refer to Schedule 3 for further details.
4.1.2	In relation to 4.1.1, the Issuer must disclose the following information: (i) The categories of eligible Green Projects to which the ASEAN Green Bonds proceeds will be allocated; and/or (ii) The information on specific Green Projects in the case where the Issuer has identified the specific Green Projects to which the ASEAN Green Bonds proceeds will be allocated.	(i) PUB has set out the Eligible Green Project categories in the Use of Proceeds section of the Framework.  (ii) PUB has detailed the criteria for the specific green project types which qualify as 'Eligible Projects' in its Green Financing Framework.

4.1.3	All designated Green and Social Projects must provide clear environmental and social benefits, which will be assessed and, where feasible, quantified by the Issuer.	As per Clause 1c in Schedule 3, these project types would present clear and demonstrated environmental benefits.
4.1.4	In the event that all or a proportion of the proceeds are or may be used for refinancing, it is recommended that Issuers provide an estimate of the share of financing and refinancing, and where appropriate, also clarify which investments or project portfolios may be refinanced and, to the extent relevant, the expected look-back period for refinanced Green and Social Projects.	As per Clause 1d in Schedule 3, PUB have clarified the type of investment that may be refinanced in the Framework.
4.1.5	Green Bond Categories	Eligible project categories presented by PUB are as follows: <ul style="list-style-type: none"> <li>• Sustainable Water and Wastewater Management</li> <li>• Renewable Energy</li> </ul>
4.1.6	For clarification purposes, fossil fuel power generation projects are excluded from the ASEAN GBS.	Fossil fuel, fossil fuel electric power generation projects, and energy efficiency improvement projects for fossil fuel-based electric power generation are excluded from the list of Eligible Green Project categories.

#### 4.2 Process for Project Evaluation and Selection

Criteria	Requirements	Demonstrated Compliance
4.2.1	The Issuer of ASEAN Green Bonds must clearly communicate to investors– (i) the environmental objectives; (ii) the process by which the Issuer determines how the projects fit within the eligible Green Projects categories identified above; and (iii) the related eligibility criteria, including, if applicable, exclusion criteria or any other process applied to identify and manage potentially material environmental risks associated with the Green Projects.	PUB has communicated through their Framework: (i) the environmental objectives of the Green Financing Framework; (ii) the process for project evaluation and selection is fully and clearly described in the Framework; and (iii) Eligibility criteria has been set out in sections of “Use of Proceeds” and “Process for Project Selection and Evaluation” of the Framework
4.2.2	The Issuer must establish the process for project evaluation and selection prior to the issuance of the ASEAN Green Bonds	As per Clause 2a in Schedule 3, the process for project evaluation and selection is fully and clearly described in the Framework prior to bond issuance.

	and disclose the same to investors in the documentation for the issuance of the ASEAN Green Bonds.	
4.2.3	Issuers are encouraged to position this information within the context of the Issuers' overarching objectives, strategy, policy and/or processes relating to environmental sustainability. Issuers are also encouraged to disclose any green standards or certifications referenced in project selection.	As per Clause 2b in Schedule 3, the information presented in the PUB Green Financing Framework are in the context of the PUB's sustainable development strategy and policies.
4.2.4	It is recommended that the Issuer's process for project evaluation and selection be supported by an external review	PUB will engage an independent provider to provide annual external verification on the proceed allocation, which will include the process for project evaluation and selection.
4.2.5	The Issuer must make the following publicly available on a website designated by the Issuer at the time of the issuance and throughout the tenure of ASEAN Green Bonds: (i) The process for project evaluation; (ii) The use of proceeds; and (iii) External review report on the process (if any).	PUB will make publicly available on its website: (i) PUB Green Financing Framework, which includes the process for project selection and evaluation; (ii) Use of Proceeds; and (iii) This external review report.

### 4.3 Management of Proceeds

Criteria	Requirements	Demonstrated Compliance
4.3.1	Prior to the issuance of the ASEAN Green Bonds, the Issuer must disclose to investors in the documentation for the issuance of the ASEAN Green Bonds the process for managing the net proceeds from the ASEAN Green Bonds.	PUB has in its Framework, disclosed the process for managing the net proceeds from green bonds and has communicated its intention to document this process in the bond issuance documentation (where necessary) that is consistent with its Framework.
4.3.2	The net proceeds from the ASEAN Green Bonds, or an amount equal to these net proceeds, must be credited into a sub-account, moved to a sub-portfolio or otherwise tracked by the Issuer in an appropriate manner and attested to by a formal internal process linked to the Issuer's lending and investment operations for Green Projects. The total amount deployed from the net proceeds for the eligible Green Projects need not occur simultaneously.	PUB has presented the tracking and monitoring of proceeds and allocation reporting in the Green Financing Framework.
4.3.3	As long as the ASEAN Green Bonds are outstanding, the balance of tracked proceeds must be periodically adjusted to	PUB has defined how proceeds are to be tracked and reported to match the allocation to eligible green projects.

	match allocations to eligible Green and Social Projects made during that period.	
4.3.4	The Issuer must also disclose to investors in the documentation for the issuance of the ASEAN Green Bonds the intended types of temporary placement for the balance of unallocated proceeds.	PUB has disclosed that any will deploy any unallocated proceeds at its own discretion in cash instruments in accordance with PUB's approved cash investment policy in the interim.
4.3.5	It is recommended that the Issuer's management of proceeds be supplemented by the use of an auditor, or other third party to verify the internal tracking method and the allocation of funds from the ASEAN Green Bonds proceeds.	DNV understands that the PUB will commit to externally verifying its allocation reporting, ensuring an independent third party will provide the verification for internal tracking of the proceeds. This is to be assessed Post-Issuance at the Annual Verification stage.
4.3.6	Where the Issuer appoints an auditor or other third party to verify the Issuer's management of proceeds, the Issuer must make the report produced by the auditor or other third party publicly available on a website designated by the Issuer at the time of the issuance of the ASEAN Green Bonds.	Refer to Clause 4.3.5.

#### 4.4 Reporting

Criteria	Requirements	Demonstrated Compliance
4.4.1	Issuers must report to investors at least on an annual basis and encouraged to make more frequent reporting on the use of proceeds until full allocation, and as necessary thereafter in the event of material developments. This should include a list of the projects to which the ASEAN Green Bonds proceeds have been allocated, as well as a brief description of the projects and the amounts allocated and their expected impact.	PUB has confirmed that it will provide annual reporting, in the form of both allocation and impact reporting, until full allocation of the proceeds have been made, and subsequently on needs basis.
4.4.2	Where confidentiality agreements, competitive considerations, or a large number of underlying projects limit the amount of detail that can be made available, the Issuer may present the information in generic terms or on an aggregated portfolio basis.	PUB reserves the right to manage confidentiality obligations with regards to green bond reporting.
4.4.3	It is recommended that Issuers use qualitative performance indicators, and where feasible, quantitative performance measures and disclosure of the key underlying methodology and/or assumptions used in the quantitative determination	PUB intends to provide qualitative, and where possible, quantitative impact reporting for the projects that are financing through the GFIs.

4.4.4	It is recommended that the Issuer’s annual reporting on the use of proceeds be supplemented by a confirmation of such use of proceeds by an external reviewer along with any relevant updates of the external review.	PUB intends to engage an independent provider to provide annual external verification on the alignment of the allocation reporting with the Framework, until full allocation and in case of material changes.
4.4.5	The Issuer must provide to investors the annual reporting and the external review on the annual reporting, if any, through a website designated by the Issuer and/ or annual reports throughout the tenure of the ASEAN Sustainable Bonds	The annual report for Green Bonds, covering both allocation and impact reporting, and the post-issuance verification report will be available publicly on the PUB website.

## 5.0 External Review

Criteria	Requirements	Demonstrated Compliance
5.1	Issuers are recommended to appoint external review providers for their ASEAN Sustainable Bonds issuances	DNV has been appointed to provide a pre-issuance Second Party Opinion on the PUB Green Financing Framework (dated March 2025).
5.2	The external review may be partial, covering only certain aspects of the Issuer’s ASEAN Sustainable Bonds framework or full, assessing alignment with all four core components as stated in the ASEAN GSSBS	The scope of this assurance service is for full alignment with the four components as stated in the ASEAN GBS.
5.3	The external review provider must have the relevant expertise and experience in the components of the ASEAN Sustainable Bonds which they are reviewing.	DNV is an Accredited Verifier under the Climate Bonds Standard and recognized under the ICMA for providing assurance services in line with international standards.
5.4	The external review provider must also disclose their relevant credentials and expertise, and the scope of the review conducted in the review report.	DNV’s credentials and expertise have been disclosed in this Opinion. The scope of this Assurance Service has been detailed in the “Scope and Objective” section.
5.5	There are a variety of ways for Issuers to obtain outside input into the formulation of their ASEAN Sustainable Bonds process and there are several levels and types of review that can be conducted.	This Assurance has been conducted as an independent external review and verification against the criteria set out in the ASEAN GBS.
5.6	Independent external reviews may vary in scope and may address an ASEAN Sustainable Bonds framework/programme, an individual ASEAN Sustainable Bonds issuance, the underlying assets and/or procedures.	This Assurance has been conducted as an independent external review and verification against the criteria set out in the ASEAN GBS.



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