Resilience Water Criteria

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Climate Bonds Standard and Certification Scheme



Climate Bonds INITIATIVE

Prepared by the Climate Bonds Initiative

Climate Bonds Initiative

Water Infrastructure Criteria

Climate Bonds Standard and Certification Scheme

Final Criteria Document

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Document revision number	Date	Summary of changes
3.4 Formal update to Criteria (Phase 4)	May 2026	Criteria updated in line with the Climate Bonds Resilience Taxonomy.
3.3 Clarified wording for assets within scope and out of scope	August 2022	Clearer wording included on eligible desalination assets in Table 1. Clearer wording on water infrastructure as supporting sectors for which Criteria do not exist being out of scope.
3.2 Minor revisions to Version 3	March 2022	Addition of missing question in adaptation and resilience Scorecard, reclarification of Scorecard completion for desalination assets.
3.1 Update to Criteria to include desalination assets (Phase 3)	January 2021	Specific Criteria were developed and added for desalination plants. A separate low-carbon energy threshold is set for plants, along with an extra section for brine disposal and feedwater in the adaptation and resilience checklist.
2. Formal update to Criteria (Phase 2)	May 2018	Criteria added for nature-based and hybrid water infrastructure covering such purposes as water collection, storage, treatment, and distribution; flood protection and drought resilience.
1. First publication of original Criteria (Phase 1)	Oct 2016	

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Definitions

Adaptation: In human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects.

Climate Bonds Initiative (Climate Bonds): An investor-focused not-for-profit organisation promoting large-scale investments that will deliver a global low-carbon and climate-resilient economy. The Initiative seeks to develop mechanisms to better align the interests of investors, industry, and government to catalyse investments at a speed and scale sufficient to avoid dangerous climate change.

Climate Bond: A climate bond is a bond used to finance – or re-finance – projects needed to address climate change issues. They range from wind farms and solar and hydropower plants to rail transport and building of sea walls in cities threatened by rising sea levels. Only a small portion of these bonds have been labelled as green or climate bonds by their issuers.

Certified Climate Bond: A Climate Bond that is certified under the Climate Bonds Standard as meeting the requirements of the Standard, as attested through independent verification.

Climate Bonds Resilience Taxonomy (CBRT): A framework for classifying, identifying, and verifying investments that build resilience to climate change impacts and help direct capital towards adaptation and resilience projects such as flood defences or drought-resistant agriculture.

Climate Bonds Standard: A screening tool for investors and governments that allows them to identify green bonds where they can be confident that the funds are being used to deliver climate change solutions. This may be through climate mitigation impact and/or climate adaptation or resilience. The Climate Bonds Standard is made up of two parts: the parent standard (Climate Bonds Standard) and a suite of sector-specific eligibility requirements (Sector Criteria). The parent standard covers the Certification process and pre- and post-issuance requirements for all Certified bonds, regardless of the nature of the capital projects. The Sector Criteria detail specific requirements for assets identified as falling under that specific sector. The latest version of the Climate Bonds Standard is published on the Climate Bonds website.

Climate Bonds Standard Board (CBSB): The CBSB is responsible for approving: i) revisions to the Climate Bonds Standard, including the adoption of additional sector Criteria; ii) Approved Verifiers; and iii) applications for Certification of a bond under the Climate Bonds Standard. The CBSB is constituted, appointed, and supported in line with the governance arrangements and processes as published on the Climate Bonds website. Collectively, the CBSB represents USD150tn of assets under management.

Climate Bond Certification: Allows the issuer to use the Climate Bond Certification Mark in relation to that bond. Climate Bond Certification is provided once the independent CBSB is satisfied the bond conforms with the Climate Bonds Standard.

Green Bond: Labelled green bonds are bonds designated such that proceeds be used for green projects, mostly climate change mitigation and/or adaptation projects.

Maladaptation: The risk of an unintended measurable increase in vulnerability (or exposure) in the investment context and/or in the wider system within which the investment is situated.

Natural features: Nature-based solutions, including natural processes and functions, that developed or evolved through biological, geochemical, or similar processes; these may be left intact or restored through use of proceeds.

Nature-based features: Nature-based solutions that mimic characteristics of natural features but are created by human design, engineering, and construction to provide specific services such as groundwater recharge or water filtration.

Nature-based solutions (NBS): A term referencing the explicit, planned, and intentional use of ecosystems to meet human needs.

Nature-based water infrastructure: Water infrastructure that reflects the intentional use of ecological assets and/or ecosystem-based features, processes, and functions as an integral part of addressing water needs. Such infrastructure is intended to serve these functions in a manner that protects, manages, restores, and/or enhances natural features, processes, and systems in a functioning and sustainable manner.

Output-level substantial contribution to resilience: Focuses on the immediate, measurable reduction in vulnerability (or exposure) to climate impacts in the investment context, such as products, capital goods, or services that directly reduce climate vulnerability. For example, installing green roofs on residential buildings produces the measurable result of improved heat absorption by the building structure. This improvement in heat absorption is considered the substantial contribution to climate resilience at the output level, and criteria are developed to substantiate this impact.

Outcome-level substantial contribution to resilience: Represent the broader, longer-term impacts of an investment. As illustrated with the green roofs example, the output is enhanced heat absorption by the building structure, while the outcome is the resulting lower indoor temperatures during heat stress, which benefits the comfort and health of the inhabitants.

Resilience or climate resilience: The capacity of social, economic, and environmental systems to cope with climate-related hazardous events, trends, or disturbances, responding or reorganising in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.

Technical Working Group (TWG): A group of key experts from academia, international agencies, industry, and NGOs convened by Climate Bonds. The TWG develops Sector Criteria – detailed technical criteria for the eligibility of projects and assets – as well as guidance on the tracking of eligibility status during the term of the bond. Their draft recommendations are refined through engagement with finance industry experts in convened Industry Working Groups (IWGs) and through public consultation. Final approval of Sector Criteria is given by the CBSB.

Water Infrastructure Assets: Engineered, nature-based, and hybrid water infrastructure for the purposes of water collection, storage, treatment, or distribution, or for flood protection or drought resilience.

Water, Sanitation, and Hygiene (WASH): Defined as infrastructure, services, and practices primarily serving drinking water supply, sanitation, and hygiene needs for populations currently lacking access to safely managed water and sanitation services.

Acronyms

AP	adaptation plan
BOD	biochemical oxygen demand
CBRT	Climate Bonds Resilience Taxonomy
CBSB	Climate Bonds Standard Board
DNSH	do no significant harm
GHG	greenhouse gas
IPCC	Intergovernmental Panel on Climate Change
IWG	Industry Working Group
LCA	life cycle assessment
NBS	nature-based solutions
NGO	non-governmental organisation
PE	population equivalent
RIBASIM	River Basin Simulation Model
SWAT	Soil and Water Assessment Tool
TWG	Technical Working Group
USACE	US Army Corps of Engineers
WASH	water, sanitation, and hygiene
WEAP	Water Evaluation and Adaptation Planning tool

Table of Contents

Acknowledgements 3
Definitions 4
Acronyms 6
1 Introduction 8
1.1 The Climate Bonds Standard 8
1.2 Supplementary information available 8
1.3 Revisions to these Criteria 8
2 Scope of the Criteria 8
2.1 Existing Water Infrastructure Criteria 8
2.2 Assets covered by these Criteria 9
2.3 Alignment with other Sector Criteria 9
3 Criteria for all water infrastructure assets and projects 10
3.1 Criteria for substantial contribution to adaptation and resilience component 10
3.2 Do no significant harm: mitigation component 12
3.3 Do no significant harm: other environmental objectives component 15
3.4 Maladaptation 16
4 Scorecard for evaluating the issuer's Vulnerability Assessment and Adaptation Plan 16
Appendix A: List of eligible water infrastructure assets from existing Criteria and Climate Bonds Resilience Taxonomy 29
Appendix B: Members of Technical Working Group and Industry Working Group 37

List of Figures

Figure 1. Decision tree for the Adaptation & Resilience component of the Water Infrastructure Criteria 12

List of Tables

Table 1. Assets or projects totally or partially covered by other Sector Criteria 9
Table 2. Mitigation requirements for specific activities/projects 13
Table A 1. Illustrative built infrastructure assets covered by the Water Infrastructure Criteria 31
Table A 2. Illustrative nature-based solutions and hybrid infrastructure covered by these Water Infrastructure Criteria 33
Table A 3. Assets covered by the Water Infrastructure Criteria under Climate Bonds Resilience Taxonomy 35

1 Introduction

1.1 The Climate Bonds Standard

Investor demand for climate bonds is strong and is expected to increase in line with the delivery of quality products into the market. However, investor concerns about the credibility of green labelling are also growing. Standards, assurance, and Certification will be essential to improve confidence and transparency, which in turn will enable further strong growth in the market.

Today, the Climate Bonds Standard and Certification Scheme is an easy-to-use screening tool that provides a clear signal to investors and intermediaries on the climate integrity of Certified Climate Bonds.

Sector-specific Criteria are determined through a multi-stakeholder engagement process, including TWGs and IWGs, convened and managed by Climate Bonds. The Criteria are subject to public consultation. Finally, they are reviewed and approved by the CBSB.

The second key part is the overarching Climate Bonds Standard . This documents the cross-sectoral Criteria all Certified instruments, assets, and entities must meet, in addition to meeting the sector-specific Criteria.

1.2 Supplementary information available

For more information, see the Climate Bonds website.[1] For an overview of the scheme, see the *Climate Bonds Standard and Certification Scheme* brochure.[2] The current version of the overarching *Climate Bonds Standard* is available on the Climate Bonds website.[3]

For further information on the Water Infrastructure Criteria specifically, the following package of supplementary documents is available on the Climate Bonds website:[4]

- Frequently Asked Questions (FAQs) about the Water Infrastructure Criteria
- Water Infrastructure Criteria background paper, summarising the discussions and decisions of the TWG and IWG that gave rise to these Criteria.

1.3 Revisions to these Criteria

These Criteria will be reviewed on a regular basis, at which point the TWG will take stock of the deals that are printed in the early stages and any developments in improved methodologies and data that can increase the climate integrity of future deals. As a result, the Criteria are likely to be refined over time, as more information becomes available. Certification will not be withdrawn retroactively from bonds Certified under earlier versions of the Criteria.

2 Scope of the Criteria

2.1 Existing Water Infrastructure Criteria

Criteria for water infrastructure assets already support the Climate Bonds Standard. A team was convened in 2016, involving a diverse set of organisations and a global team of technical and industry experts, to produce adaptation and resilience Criteria representing the special issues, needs, and topics of water infrastructure. Over time, supplemental Criteria were elaborated through additional teams for additional types of assets, so that these Criteria now span assets ranging from traditional grey infrastructure investments to nature-based solutions and water desalination facilities. The accumulated

Criteria can be found on the Climate Bonds website.[5] Since 2016, these Criteria have been successfully and widely applied across six continents for a diverse set of assets. With few exceptions, these Criteria have been applied to assets that fall into two broad categories:

- Engineered water infrastructure or water-use systems that collect, treat, and distribute water, or that protect against floods or drought. Table 3 in Appendix A provides illustrative examples.
- Nature-based water resources management systems that are managed to collect, store, treat, or distribute water or to buffer floods or drought, including hybrid green-grey systems. These systems include natural and nature-based features, processes, and functions as an integral part of addressing water-related needs. Table 4 in Appendix A provides illustrative examples.

These Criteria are designed to address both acute and chronic climate risks to water infrastructure. While acute hazards such as flooding and extreme weather events are addressed, equal emphasis is placed on chronic, slow-onset risks including long-term reductions in water availability, catchment-level scarcity, and shifts in hydrological baselines over the operational lifetime of an asset

2.2 Assets covered by these Criteria

Appendix A Tables 3,4 and 5 indicate water infrastructure assets/investments that may be eligible for inclusion in a Certified Climate Bond, subject to meeting the Criteria laid out in this document.

Automatic exclusions under these Criteria include assets or activities directly or explicitly supporting fossil fuels, for example:

- Integrated water and power plants
- Desalination plants providing water directly to fossil fuel power stations

2.3 Alignment with other Sector Criteria

With respect to use of proceeds Certifications of bonds, where the proceeds will be allocated to multiple sectors, proof of compliance with multiple Sector Criteria may be required across the portfolio.

In some cases, it may not immediately be clear whether activities, facilities, or projects might fall under these Criteria or other Sector Criteria. The possible overlaps, and appropriate Sector Criteria to be used, are clarified in Table 1.

Table 1. Assets or projects totally or partially covered by other Sector Criteria

Potential Use of Proceeds	Sector Criteria
Transportation of waste	Transport Criteria
Generation of electricity with waste	Bioenergy Criteria The project must ensure the systems meet the standards established through the Bioenergy Criteria for the use of biogas.
Sludge management following wastewater treatment (conventional/engineered) The facility manages the following types of wastewater:	Waste Management Criteria The sludge generated must be managed adequately to meet the Criteria established under Anaerobic Digestion

Domestic wastewater Industrial wastewater Slurry and other effluents Solid organic waste from municipal solid waste stream	or Composting in the Waste Management Criteria.
Sludge management following wastewater treatment – NBS The facility manages only the following types of wastewater: Domestic wastewater Industrial wastewater Slurry and other effluents Non-sewage water such as rainwater and stormwater	

3 Criteria for all water infrastructure assets and projects

To reflect the growing recognition of the importance of freshwater to adaptation and resilience, this document proposes a requirement that is relevant to the water sector and its related investments.

- All investments in the Climate Bonds Resilience Taxonomy (CBRT) that are classified in the primary sector/subsector as being part of the water infrastructure sector **must** use the Water Infrastructure Criteria described in Section 3 and 4 of this document.

3.1 Criteria for substantial contribution to adaptation and resilience component

The Water Infrastructure Criteria are intended to provide transparency over the asset's resilience to climate change as well as its impact on other stakeholders' resilience to climate change. Such stakeholder impacts include their access to water in sufficient quantity and sufficient quality. This encompasses both acute climate hazards and chronic, slow-onset risks including long-term declines in source water availability, catchment-level scarcity, and shifting hydrological baselines recognising that both are equally material to the long-term performance and resilience of water infrastructure assets. From this perspective, ecosystems are also considered a stakeholder.

All assets and projects, except for the automatically eligible investments, must provide a Vulnerability Assessment/Adaptation Plan evaluation as the basis for applying the Criteria in Section 4.

In order to apply the Criteria, the issuer will need to have a Vulnerability Assessment – an assessment or diagnosis of realised climate impacts and potential climate risks. The issuer will also need to supply a corresponding Adaptation Plan – a management response plan to the conclusions and findings of the Vulnerability Assessment, noting how identified climate impact and maladaptation risks will be addressed. As such, the Vulnerability Assessment and the Adaptation Plan are paired documents. In addition, certain investments being proposed by an issuer for inclusion in a Climate Bond may need to demonstrate that they are consistent with additional assessments and may need to provide evidence of a hydrogeological feasibility or other relevant assessments to demonstrate their viability.

Although Vulnerability Assessment and Adaptation Plans remain somewhat new to the finance community, they are used routinely by water managers, engineers, and planners. They are not expected to be long documents and can be quite concise narrative statements. They are likely to refer to and depend on documents produced by other organisations or partners, including ones that do not explicitly refer to the issuance or issuer but that can inform the assessment of climate vulnerability.

Taken together, the Vulnerability Assessment and Adaptation Plan and their supporting documents serve as the basis for applying the Criteria and determining the eligibility of the bond for Certification.

Eligibility for Certification depends on the efficacy and thoroughness of the issuer's Vulnerability Assessment and Adaptation Plan and the underlying climate risk assessment and management plans that they capture. Eligibility is assessed via a Scorecard or checklist consisting of a series of binary questions.

This Scorecard is given in Section 4. It lists a series of questions that must be reported on, where evidence of action, analysis, or research should be sought, or where disclosure of relevant regulatory, governance, or legal documentation is required.

The Scorecard examines climate vulnerability in terms of technical qualities of the assessment process and specific eco-hydrological and climate indicators, as well as aspects of governance and conflict negotiations and how effectively water users share resources under shifting hydrological conditions. The Scorecard determines whether the issuers' Vulnerability Assessment and Adaptation Plan sufficiently address these factors.

To achieve this, the questions in the Scorecard are grouped into six sections.

The first five are used to evaluate the issuer's Vulnerability Assessment. Of these, the first three are: 1) Allocation, 2) Governance, and 3) Technical Diagnostics. Together, these sections address how water will be shared, negotiated, governed, and allocated among different stakeholders. They also evaluate how the project will affect and be affected by current and future eco-hydrological conditions, the potential risks to an asset or project posed by current and future climate impacts, and how the impact of that asset on relevant ecosystems may change as the climate continues to evolve.

The fourth section (Nature-Based Solutions) needs to be completed only for nature-based and hybrid infrastructure. It is made up of five subsections. These subsections are intended to document: (i) the state of knowledge around the site and existing services; (ii) ecological management baselines; (iii) the extent and credibility of available data; (iv) broader ecological impacts beyond the project itself; and (v) ongoing monitoring and management capacity.

The fifth section (Desalination Plants) needs to be completed only for desalination projects and assets. It is comprised of two questions. The questions are intended to ensure that the issuer has addressed brine disposal and feedwater intake issues.

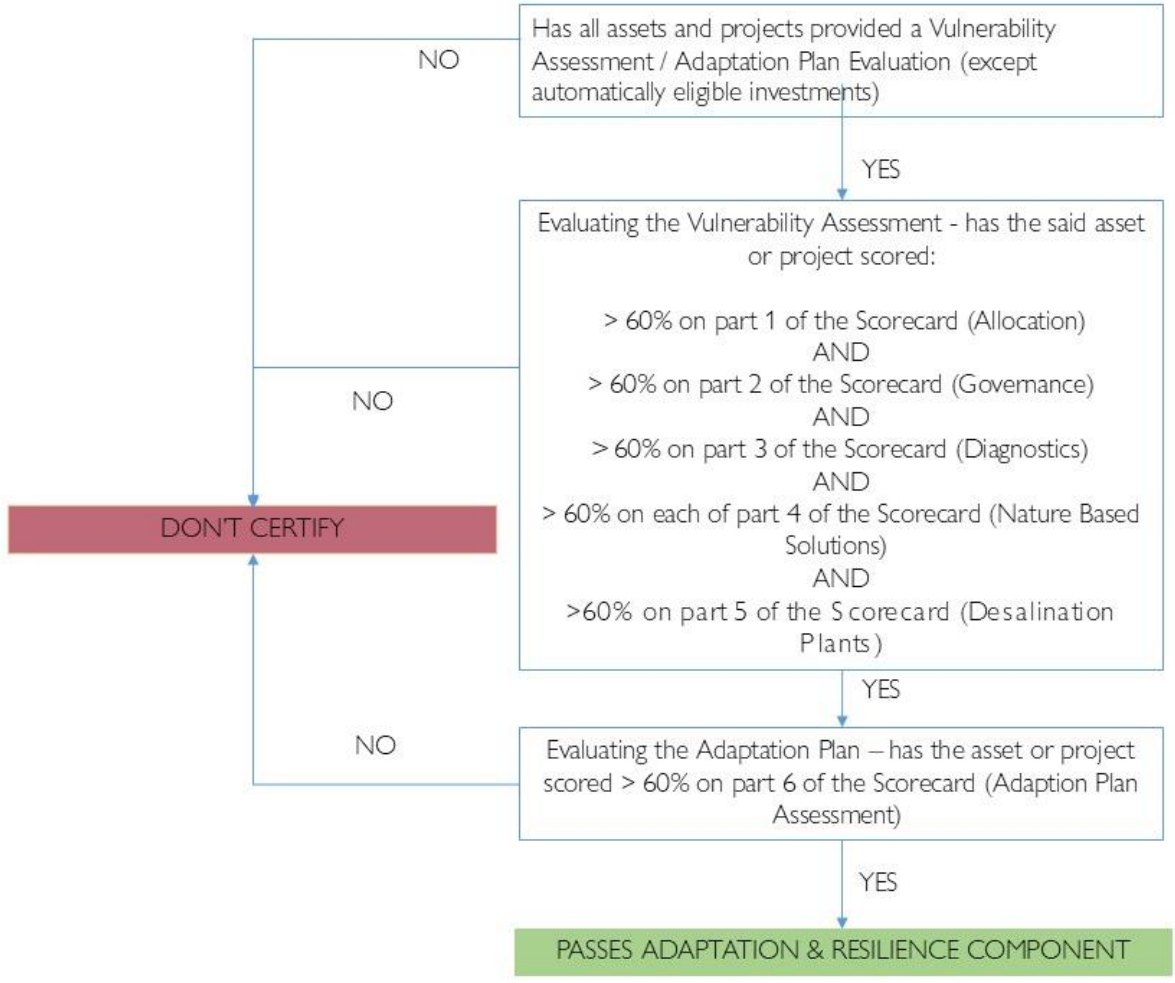
The sixth section relates to the assessment of the Adaptation Plan. This section is briefer and focuses on the adequacy of the coping mechanisms to address identified climate vulnerabilities, including potential or uncertain vulnerabilities that arose from the Vulnerability Assessment.

For each question in the Scorecard, a 'yes' scores 1 point and a 'no' scores 0. In the event of an 'n/a', please specify why the question is not applicable and reduce the potential sectional score appropriately. To meet the requirements of the Climate Bonds Standard adaptation and resilience component, the project must score at least 60% of the maximum potential score in all applicable parts of the Scorecard. (That is, it must score ≥ 60% for Allocation, ≥ 60% for Governance, ≥ 60% for Technical Diagnostics, ≥ 60% for each subsection of Nature-Based Solutions, ≥ 60% for Desalination Plants, and ≥ 60% in the Adaptation Plan Assessment).

It is the issuers' responsibility to self-assess and self-score against the Scorecard the project or asset being funded by the bond proceeds in the first instance. Verifiers are required to check this using the information and evidence provided to them by the issuers.

See Figure 1 for a summary of this adaptation and resilience component. Further information on how to conduct an adaptation and resilience assessment, including guidance on the nature of the evidence required to support scoring and where that might be sourced, is given in the *Guidance Note to Issuers and Verifiers*.[6]

Figure 1. Decision tree for the adaptation and resilience component of the Water Infrastructure Criteria



3.2 Do no significant harm: mitigation component

The mitigation component of the Water Infrastructure Criteria is intended to provide transparency over the impact that the use of proceeds will have on greenhouse gas (GHG) emissions and the degree of mitigation that will be delivered over the operational lifetime of the project or asset. With the exceptions of desalination plants and assets that are automatically eligible for mitigation, all other assets are eligible for Certification if they satisfy the following generic requirements:

1. No net substantial increase in GHG emissions is expected, and the issuer discloses the justification for this decision with supporting documentation; or

2. A negative net GHG emissions impact is expected, and the issuer has estimated the GHG mitigation impact that will be delivered over the operational lifetime of the project or asset.

This impact should be defined in terms of the decreased emissions or increased sequestration relative to a business as usual baseline. Table 2 provides requirements for mitigation that must be satisfied for specific activities/projects.

Table 2. Mitigation requirements for specific activities/projects

Activity/project	Do no significant harm (DNSH) to mitigation Criteria
Desalination facilities	Desalination facilities are eligible for meeting Certification if they meet the following Criteria, which define the average carbon intensity of the electricity that is used for desalination as at or below 100g carbon dioxide equivalent per kilowatt-hour (CO_2e/kWh). Methodological notes: • This threshold is to be met over the certification term. • Emissions may be scope 1 or scope 2, depending on whether the facility sources its electricity from onsite or offsite generation. Offsite generation may factor into the calculation of emissions intensity in the following ways. • If entirely sourcing electricity from a wider electrical grid, the grid factor[7] (or grid emissions intensity) is demonstrated to be at or below 100g CO_2e/kWh. • Private purchase agreements that demonstrate the facility will source electricity from generation at or below 100g CO_2e/kWh.
Wetlands	Must meet the generic mitigation requirement. In addition, if the asset or project relates to wetlands, the GHG assessment should be carried out with reference to the methodologies described in the IPCC guidelines for evaluating wetlands greenhouse gas inventories.[8]
Special consideration for climate mitigation aspects of WASH systems	For resilience WASH investments, DNSH to climate mitigation component may face an exception if: • countries are classified as least developed countries and/or low income according to OECD definitions[9] and • they can credibly show that the investment is to secure increased access to safe and reliable drinking water and sanitation services.
Wastewater treatment (conventional/engineered) Includes wastewater treatment facilities	Must meet the generic mitigation requirement. In addition: • For wastewater with biochemical oxygen demand (BOD) > 1,500 milligrams per litre (mg/l),[10] anaerobic systems for recovery of energy must be implemented.

	• The wastewater treatment plant must demonstrate substitution for more GHG-intensive treatment systems, e.g., substitution of septic tanks or sedimentation of lagoons.
	• For anaerobic or anoxic components of the treatment plants, a monitoring and mitigation plan must be in place to identify and manage possible GHG emissions born from the treatment process.
	• For aerobic systems, the plants must meet the following levels of energy efficiency:
	  ○ 35 kWh per population equivalent (PE)[11] per annum for treatment plant capacity below 10,000 PE;
	  ○ 25 kWh per PE per annum for treatment plant capacity between 10,000 and 100,000 PE;
	  ○ 20 kWh per PE per annum for treatment plant capacity above 100,000 PE.
	The project must provide a yearly quantification of GHG emission intensity (ton CO_2e/ton of treated wastewater), compared against baseline results. This may be achieved using carbon accounting methodologies such as the GHG Protocol, ISO 14067:2018, a life cycle assessment (LCA) study, or comparable methodologies.

NBS – wastewater treatment Includes wastewater treatment systems using horizontal, vertical, and other wetland systems and active aeration and passive treatment systems	Must meet the generic mitigation requirement. In addition: • The wastewater treatment plant must demonstrate substitution for more GHG-intensive treatment systems, e.g., low dissolved oxygen systems, facultative membrane bioreactors, anaerobic digestion, microbial fuel cells, and wetlands and natural treatment. • Anaerobic pits and tanks must establish a methane leakage monitoring plan and a mitigation plan, especially in the pipelines and gas storage systems. • The process must be designed to reach an efficiency of at least 90% of BOD_5. • Only non-invasive and local species must be used in artificial wetlands. The project must provide a yearly quantification of GHG emission intensity (ton CO_{2e}/ton of treated wastewater), compared against baseline results. This may be achieved using carbon accounting methodologies such as the GHG Protocol, ISO 14067:2018, an LCA study, or comparable methodologies.
NBS – ecological restoration management Includes erosion control systems and hydrological restoration	Must meet the generic mitigation requirement. For projects involving these activities, the following additional mitigation requirements apply. • The restoration area must be covered by a plan consistent with Ramsar Convention principles (for wetlands)[12] and identified as a flood/drought risk reduction measure in basin-level water management or coastal management plans.

	• Projects must implement terracing systems for water capture and groundwater recharge, and deploy methane mitigation strategies including microbial oxidation, bio-electrochemical systems, or wetland management practices. • A monitoring programme must be established to assess effectiveness in improving water body status and adapting to climate change, reviewed periodically in line with river basin and flood risk management plans, with clear ecosystem benefits and stakeholder involvement from the planning phase. • Projects must demonstrate DNSH through limiting peat extraction, achieving ≥70% recovery of construction and demolition waste, avoiding highly hazardous pesticides (per WHO classification), preventing contamination of water or soil, installing erosion barriers, and ensuring good conservation status while excluding invasive alien species.
NBS – drought defence Includes aquifer or groundwater storage, recharge zone management, wetland storage, and snowpack management	Must meet the generic mitigation requirement. For projects involving these specific drought defence measures, the following additional mitigation requirements apply: • The activity must be identified as a flood or drought risk reduction measure in a river basin-wide water use and protection management plan or integrated coastal zone management plan that pursues risk management objectives for human health, environment, cultural heritage, and economic activity. • The activity must include nature restoration or conservation actions demonstrating specific ecosystem benefits with clear, binding objectives within a defined timeframe, involving local stakeholders from the planning and design phase. • A monitoring programme must assess the effectiveness of the NBS plan in improving water body status, achieving conservation or restoration objectives, and adapting to changing climatic conditions, with periodic review aligned with river basin management plans (including drought management plans) and flood risk management plans. • Projects must demonstrate DNSH by limiting construction and demolition waste generation with ≥70% recovery for reuse or recycling, minimising pesticide use and favouring non-chemical alternatives, avoiding manure and minimising fertilisers, preventing sediment accumulation in coastal areas (especially near artisanal fishing sites), ensuring no detriment to protected species populations or habitat types, preventing introduction or spread of invasive alien species, avoiding degradation of high carbon stock environments, and reducing soil erosion from runoff.

3.3 Do no significant harm: other environmental objectives component

The Scorecard in Section 4 of this document addresses these environmental objectives, which cover the following:

- sustainable use and protection of water and marine resources [S];
- protection of ecosystems and biodiversity [E&B];
- pollution prevention and control [P]; and
- transition to circular economy [CE].

The Scorecard sections most relevant for demonstrating DNSH with respect to the four selected environmental objectives described above have been marked with the respective flags. All Scorecard sections marked with one or more of the four DNSH environmental objective tags are mandatory where applicable. For each tag present, the issuer is required to obtain the maximum score assigned to the corresponding tagged question where applicable.

3.4 Maladaptation

The Scorecard outlined in Section 4 will help detect and prevent widespread forms of maladaptation. The specific tag [M] is marked in the Scorecard to indicate which questions under the Water Infrastructure Criteria address maladaptation. Scorecard sections that have the [M] tag are mandatory for assets, projects and investment where applicable, and an issuer must achieve maximum points allocated for those Scorecard questions where applicable.

4 Scorecard for evaluating the issuer's Vulnerability Assessment and Adaptation Plan

	Key [CE]: transition to circular economy [E&B]: protection of ecosystems and biodiversity [M]: maladaptation [P]: pollution prevention and control [S]: sustainable use and protection of water and marine resources	Requirement E = Provide evidence D = Disclose	Max score	Actual score
FOR EVALUATION OF THE ISSUER'S VULNERABILITY ASSESSMENT AND IDENTIFICATION OF THE SUBSTANTIAL CONTRIBUTION TO RESILIENCE				
SECTION 1: WATER ALLOCATION				
1.1	Are there accountability mechanisms in place for the management of water allocations that are effective at the water management system, sub-basin and/or basin scale?	D	1	

1.2 [M] [S] [CE]	Are the following factors considered in the definition of the available resource pool? • Non-consumptive uses (e.g., navigation, hydroelectricity) • Environmental flow requirements • Dry season minimum flow requirements • Return flows (how much water should be returned to the resource pool, after use) • Inter-annual and inter-seasonal variability • Connectivity with other water bodies • Climate change impacts	E	7	
1.3 [M]	Is there a distinction between the allocation regimes used in 'normal' times and in times of extreme or severe water shortage?	E	1	
1.4 [S]	Are arrangements in place to accommodate the potentially adverse impacts of climate change on the resource pool? (E.g., using best available science to plan for future changes in availability, undertaking periodic monitoring and updating of plans as climate science improves.)	E	1	
1.5 [M]	Do plans define responses to exceptional circumstances, such as an extended drought, that influence the allocation regime? (E.g., triggering of water use restrictions, reduction in allocations according to pre-defined priority uses, suspension of the regime plan.)	E	1	
1.6	For international or transboundary basins, is there a legal mechanism in place to define and enforce water management systems and/or water basin allocation agreements? Is it flexible enough for increased variability in water supplies due to more frequent climate extremes?	D	1	
1.7	Are water delivery agreements defined on the basis of actual in situ seasonal or annual availability instead of volumetric or otherwise inflexible mechanisms?	E	1	

1.8 [S]	Has a formal environmental flows (e-flows) or sustainable diversion limit or other environmental allocation been defined for the relevant water management system, sub-basin and/or basin? (If there is a pre-existing plan, then has the environmental flows programme been updated to account for the new project?)	E	1	
1.9 [S]	Have designated environmental flows or allocation programmes been assured or implemented?	E or D	1	
1.10 [M][S]	Has a mechanism been defined to update the environmental flows plan periodically (e.g., every five to ten years) in order to account for changes in allocation, water timing, and water availability?	E	1	
1.11 [M] [S]	Is the amount of water available for consumptive use in the resource pool linked to an active, guiding public planning document? (E.g., a river basin management plan or another planning document – please indicate)	E	1	
1.12 [S]	If present, is the water management plan a statutory instrument that must be followed rather than a guiding document?	D	1	
	TOTAL ALLOCATION SCORE		Max = 18	
SECTION 2: GOVERNANCE				
2.1	Have water entitlements been defined according to one of the following? • Purpose that water may be used for • Maximum area that may be irrigated • Maximum volume that may be taken in a nominated period • Proportion of any water allocated to a defined resource pool	D	1	

2.2 [S]	Is the surface water system currently considered to be neither over-allocated nor over-used? How might climate change affect this? N.B. Over-allocated would be if e.g., current use is within sustainable limits but there would be a problem if all legally approved entitlements to abstract water were used. Over-used would be if existing abstractions exceed the estimated proportion of the resource that can be taken on a sustainable basis.	E	1	
2.3	If the investment uses groundwater, is the groundwater water system currently considered to be neither over-allocated nor over-used? N.B. Over-allocated would be if e.g., current use is within sustainable limits but there would be a problem if all legally approved entitlements to abstract water were used. Over-used would be if existing abstractions exceed the estimated proportion of the resource that can be taken on a sustainable basis.	E	1	
2.4 [S]	Is there a limit to the proportion (e.g., percentage) of water that can be extracted? How might this need to change if water supplies become more variable due to climate change? (E.g., will having sufficient amounts to meet basic human needs take precedence over others?)	E	1	
2.5 [P]	Are governance arrangements in place for dealing with exceptional circumstances (such as drought, floods, or severe pollution events), especially around coordinated infrastructure operations?	D	1	

2.6 [M]	Is there a process for re-evaluating recent decadal trends in seasonal precipitation and flow OR recharge regime, in order to evaluate 'normal' baseline conditions?	D	1	
2.7	Is there a formal process for dealing with new entrants?	D	1	
2.8	For existing entitlements, is there a formal process for increasing, varying, or adjusted use(s)?	D	1	
2.9	Is there policy coherence across sectors (agriculture, energy, environment, urban) that affect water resources allocation, such as a water management system or regional, national, or basin-wide Integrated Water Resources Management plan?	E	1	
2.10	Are obligations for return flows and discharges specified and enforced?	D	1	
2.11	Is there a mechanism to address impacts from users who are not required to hold a water entitlement but can still take water from the resource pool?	D	1	
2.12 [M] [S]	Is there a pre-defined set of priority uses within the resource pool (e.g., according to or in addition to an allocation regime)?	D	1	
2.13 [M]	If there are new entrants and/or if entitlement holders want to increase the volume of water they use in the resource pool and the catchment is open, are these entitlements conditional on either assessment of third party impacts, an Environmental Impact Assessment, or on existing user(s) forgoing use?	D	1	
2.14 [M]	Are withdrawals monitored, with clear and legally robust sanctions?	E	1	
2.15 [M]	Are there conflict resolution mechanisms in place?	E or D	1	

	TOTAL GOVERNANCE SCORE		Max = 15	
SECTION 3: TECHNICAL DIAGNOSTICS (To be completed for all water infrastructure assets)				
3.1	Does a water resources model of the proposed investment and ecosystem (or proposed modifications to existing investment and ecosystem) exist? Specify model types, such as WEAP, SWAT, RIBASIM, USACE applications). Scale should be at least sub-basin and/or water management system.	E	1	
3.2	Can the system model the response of the managed water system to varied hydrologic inputs and varied climate conditions?	E	1	
3.3 [E&B]	Are environmental performance limits (ecosystem, species, ecological community) and/or ecosystem services specified?	E	1	
3.4 [E&B]	Can these performance limits be defined and quantified using the water resources?	E	1	
3.5 [E&B]	Have these limits been defined based on expert knowledge and/or scientific analysis?	E	1	
3.6 [E&B]	Are these performance limits linked to infrastructure operating parameters?	E	1	
3.7 [E&B]	Are these limits linked to an environmental flows regime?	E	1	
3.8 [E&B]	For new projects, is there an ecological baseline evaluation describing the pre-impact state?	E	1	
3.9 [E&B]	For rehabilitation or reoperation projects, is there an ecological baseline evaluation available from before the projects were developed?	E	1	

3.10 [E&B] [P]	Has an analysis been provided that details impacts related to infrastructure construction and operation?	E	1	
3.11 [E&B]	Are lost species and/or lost or modified ecosystem functions specified for restoration in the environmental evaluation?	E	1	
3.12 [E&B]	Have regional protected areas or nature reserves been included in the analysis for impacts from the investment asset and future climate impacts?	E	1	
3.13	Does the model include analysis of regression relationships between climate parameters and flow conditions using time series of historical climate and streamflow data?	E	1	
3.14 [M]	Does the model include climate information from a multi-modal ensemble of climate projections (e.g., Climate Wizard or World Bank Climate Change Knowledge Portal) to assess the likelihood of climate risks for the specified investment horizon(s)?	E	1	
3.15 [M]	Are changes in the frequency and severity of rare weather events such as droughts and floods included?	E	1	
3.16 [M]	Are sub-annual changes in precipitation seasonality included?	E	1	
3.17 [M]	Is GCM climate data complemented with an analysis of glacial melt water and sea level rise risks, where appropriate (e.g., high or coastal elevation sites)?	E	1	
3.18 [M]	Is paleoclimatic data (e.g., between 10,000 and 1,000 years before present) included?	E	1	
3.19 [M]	Is the number of model runs and duration of model runs disclosed?	E	1	

3.20 [M]	Has a sensitivity analysis been performed to understand how the asset performance and environmental impacts may evolve under shifting future flow conditions?	E	1	
3.21 [M]	Is directly measured climate data for more than 30 years available and incorporated into the water resources model?	E	1	
3.22 [M]	Has evidence demonstrated that climate change has already had an impact on operations and environmental targets? Are these impacts specified and, to the extent possible, quantified? These impacts should be responded to directly in the Adaptation Plan.	E	1	
3.23 [M]	Does the evidence suggest that climate change will have an impact on operations and environmental targets over the operational lifespan? Are these impacts specified and, to the extent possible, quantified? These impacts should be responded to directly in the Adaptation Plan.	E	1	
3.24 [M]	Is there a discussion of the uncertainties associated with projected climate impacts on both operations and environmental impacts?	E	1	
	TOTAL DIAGNOSTIC SCORE		Max = 24	

SECTION 4: NATURE-BASED SOLUTIONS (to be completed for NBS and hybrid water infrastructure only)

This section only needs to be completed if the following apply.

- As an NBS, the asset reflects the intentional use of natural and/or nature-based features, processes, and functions (see Box 1) as an integral part of addressing a human need and doing so in a manner that protects, manages, restores, and/or enhances natural features, processes, and systems in a functioning and sustainable manner.
- Where feasible, the asset prioritises natural features over nature-based features. Such features include the protection, restoration, expansion, and/or creation of natural systems and processes as an explicit component of the desired project outcomes.

SECTION 4.1: SITE INVENTORY How well do we understand the systems and processes at the project site?				
4.1.1 [P]	Is this a greenfield site (i.e., undeveloped land used for agriculture, landscape design, or left to evolve naturally)? If so, will existing ecosystem services be expanded, supported or maintained?	E	1	
4.1.2	Has an ecohydrological model been developed? Specify model type, such as WEAP, SWAT, RIBASIM, USACE. Is this a quantitative model? Has it been calibrated against site data? Does the model include water quantity?	E	4	
4.1.3	Has the calibrated ecohydrological model been reviewed by an independent expert?	E	1	
4.1.4 [P]	Have sources of pollution been analysed for the following (even if none have been found)? • point source • non-point source	E	2	
	TOTAL SITE INVENTORY SCORE		Max = 8	
SECTION 4.2: ECOLOGICAL BASELINES FOR MANAGEMENT Do we understand how the ecological characteristics of the site will evolve over time?				
4.2.1	Is there an inventory of species that can be used as a baseline for vegetation and animal species?	E	1	
4.2.2	If there is an inventory of species that can be used as a baseline for vegetation and animal species, does it specify or identify endangered or threatened species, ecological communities, or categories of species?	E	1	
4.2.3	Have studies on current or potential climate impacts on key species (e.g., endangered or threatened species) been included?	E	1	

4.2.4	Is the flow regime used as a basis for ecological management?	E	1	
4.2.5	Is there a climate trends analysis for the site or region based on at least 30 years of climate data?	E	1	
4.2.6	Is there an assessment of exotic invasive species?	E	1	
4.2.7	If there is an assessment of exotic invasive species, has a plan been developed to cope with exotic invasive species?	E	1	
4.2.8	Has there been an assessment of trade-offs between reliability and environmental benefits to support decision-making processes?	E	1	
	TOTAL ECOLOGICAL MANAGEMENT SCORE		Max = 8	
SECTION 4.3: DATA INVENTORIES OF LOCALISED AND INDIGENOUS ASSETS Do we have access to adequate, credible data about the project site?				
4.3.1	Is there an inventory of existing water-related ecosystem services based on 30 or more years of data?	E	1	
4.3.2	Does any existing inventory of water-related ecosystem services related to runoff or land use include the following data? • fire regime • sediment or erosion load • nutrient load • land use change	E	3	

4.3.3	Do inventories of water-related ecosystem services related to water *quality* include the following data? • water quality for environmental services (e.g., habitat, ecological communities, erosion) • water quality for human needs or services (e.g., drinking water, agriculture)	E	2	
4.3.4	Is there an existing inventory of water-related ecosystem services related to water *quantity*? • water quantity for environmental services (e.g., habitat, flow regime) • water quantity for human needs or services (e.g., service reliability)	E	2	
	TOTAL EXISTING INVENTORIES SCORE		Max = 8	
SECTION 4.4: BROADER ECOSYSTEM IMPACTS Do we understand how the project's impacts may extend beyond the site?				
4.4.1	Has there been a determination of proposed or estimated impacts from project construction and operations regarding local, upstream, and downstream species and ecological communities?	E	1	
4.4.2 [P]	Has there been a determination of proposed or estimated impacts on existing local, upstream, and downstream ecohydrological systems from modification regarding the following? • pollution • downstream flow regime • groundwater impacts • land tenure (e.g., public vs private)	E	4	

4.4.3	Has there been a determination of proposed or estimated impacts and benefits on ecohydrological systems from changes in allocation via the following? • relevant environmental flows management plans • groundwater management plans	E	2	
4.4.4	Has the monitoring system contributed to the development and goals of the basin management plan?	E	1	
	TOTAL BROADER IMPACTS SYSTEMS SCORE		Max = 8	
SECTION 4.5: MONITORING AND MANAGEMENT SYSTEMS Do we have effective management processes and tools to maintain ecological integrity over time?				
4.5.1	Have target performance indicators been explicitly defined for the following? • infrastructure services • ecosystem services	E	2	
4.5.2	Is there a monitoring plan in place for infrastructure performance indicators?	E	1	
4.5.3	Is there a monitoring plan in place for ecosystem performance indicators?	E	1	
4.5.4	Are monitoring outcomes connected to the decision-making and management or operations process?	E	1	
4.5.5	Is there a multi-stakeholder basin management plan?	D	1	
	TOTAL MONITORING AND MANAGEMENT SYSTEMS SCORE		Max = 6	

SECTION 5: DESALINATION PLANTS (to be completed for all desalination projects and assets)				
5.1 [CE]	Are there measures in place to manage brine discharge which minimise impacts on the ecosystem into which the brine is discharged? For example: • diffuser systems for seawater desalination • use of computer modelling to determine the optimal brine discharge point(s) and length of outfall or the number of openings • regulatory compliance with maximum allowable levels of water salinity around discharge points • continuous or frequent water quality monitoring around the brine discharge point(s) • mixing of brine with cooling water before discharge • recovery of metals and/or salt from brine	E or D	1	
5.2	Are there measures in place to manage feedwater intake which minimise impacts on the ecosystem from which the feedwater is extracted? For example: • subsurface intake wells for seawater desalination • use of computer modelling to determine the optimal intake point(s) and the number of openings • compliance with feedwater intake regulations • continuous or frequent water quality monitoring around the intake point(s)	E or D	1	
	TOTAL DESALINATION SCORE		Max = 2	
FOR EVALUATION OF THE ISSUER'S ADAPTATION PLAN				
SECTION 6: ADAPTATION PLAN (AP)				
AP. 1	Is there a plan to restore or secure lost or modified ecosystem functions or species?	E	1	

AP. 2 [M]	Is the Adaptation Plan for environmental targets and infrastructure robust across specified *observed* recent climate conditions? Compare with Vulnerability Assessment	E	1	
AP. 3 [M]	Is the Adaptation Plan for environmental targets and infrastructure robust across specified *projected* climate conditions? Compare with Vulnerability Assessment	E	1	
AP. 4	Is there a monitoring plan designed to track ongoing progress and impacts to inform future decisions?	E	1	
AP. 5 [M]	Is there a plan to reconsider on a periodic basis the Vulnerability Assessment for operational parameters, governance and allocation shifts, and environmental performance targets?	E	1	
	TOTAL ADAPTATION PLAN SCORE		Max = 5	

Appendix A: List of eligible water infrastructure assets from existing Criteria and Climate Bonds Resilience Taxonomy

Tables A 1 and A 2 indicate water infrastructure assets and Table A 3 indicates eligible investments in water infrastructure in the CBRT that may be eligible for inclusion in a Certified Climate Bond, subject to meeting the Criteria laid out in this document. In general terms, these assets cross two broad categories (noting that one or both may be present in a single issuance):

- Engineered water infrastructure or water-use systems that collect, treat, and distribute water, or that protect against floods or drought. Table A 1 provides illustrative examples although it is not a comprehensive list of every possible engineered water asset that would be eligible. This table includes desalination plants.
- Nature-based water resources management systems that are managed to collect, store, treat, or distribute water or to buffer floods or drought. These systems include natural and nature-based features, processes, and functions as an integral part of addressing water-related needs. Table A 2 provides illustrative examples although it is not intended to be a comprehensive list of eligible assets or projects.

For each of these illustrative assets and projects, Tables A 1 and A 2 also specify their eligibility for certification under the Climate Bonds Standard through use of the following symbols.

- A green circle indicates these assets and projects are eligible for Certification by the nature of the asset or project, with no further disclosure or documentation required.
- An orange square indicates where eligibility is conditional on meeting specific requirements. These requirements are described in more detail in Section 4.2 and Section 4.3.
- A red triangle indicates where the asset or project is not eligible for Certification under any circumstances.

To be eligible for inclusion in a Certified bond, assets and projects must meet the requirements of both the mitigation and the adaptation and resilience components. Section 3.2 details the requirements of the mitigation component. Section 3.1 details the requirements of the adaptation and resilience component.

For example, if a project has a green circle under mitigation but an orange circle under adaptation and resilience, it must meet the requirements of the adaptation and resilience component before it can be Certified. If a project has an orange circle under mitigation and an orange circle under adaptation and resilience, it must meet the requirements of both the mitigation and the adaptation and resilience components before it can be Certified. A project is automatically eligible if there are green circles both for mitigation and for adaptation and resilience.

Table A 1. Illustrative built infrastructure assets covered by the Water Infrastructure Criteria

Assets	Example projects (non-exhaustive list)	DNSH to mitigation	Adaptation and resilience
Water monitoring, including but not limited to: • smart networks • early warning systems for droughts or floods • water quality monitoring processes	• Stormwater warning systems	●	●
	• Floodwater warning systems		
	• Dam failure warning systems		
	• Remote water quality or quantity monitoring systems, including snowpack and remote sensing systems		
	• Drought warning systems		
Water storage, including but not limited to: • rainwater harvesting systems • storm water management systems • water distribution systems (excluding irrigation) • infiltration ponds • aquifer storage • groundwater recharge systems • sewer systems • pumps • sand dams	• Improving energy efficiency or shifting to low-carbon fuel sources	■	■
	• Improving water management and efficiency, e.g., by reducing leaks, reducing urban runoff		
	• Installing or upgrading water capture and storage infrastructure (excluding the examples listed above)		
Water treatment, including but not limited to: • water recycling systems • wastewater treatment facilities • manure or slurry treatment facilities	• Shifting from anaerobic to aerobic wastewater treatment or separating solids from wastewater management systems	■	■
	• Generating electricity from sewage methane or biogas production from thermal hydrolysis		
	• Waste energy recovery	●	■

Assets	Example projects (non-exhaustive list)	DNSH to mitigation	Adaptation and resilience
	• Improving energy efficiency or shifting to low-carbon fuel sources		
	• Installing or upgrading water treatment infrastructure (excluding the examples listed above)		
Water desalination – the construction and/or operation of: • seawater desalination plants • brackish water desalination plants	• Membrane technology desalination with low-carbon energy		
	• Thermal technology desalination plants with low-carbon energy		
	• Integrated water and power plants		
	• Desalination plants powered by waste heat from fossil fuel power plants or industrial processes		
	Desalination plants supplying water explicitly for: • fossil fuel power stations • nuclear power stations		
Water distribution, including but not limited to: • rainwater harvesting systems • gravity-fed canal systems • pumped canal or water distribution system • terracing systems	• Installing or upgrading water irrigation systems, such as high-efficiency drip, flood, and pivot irrigation systems		
Flood defence, including but not limited to: • surge barriers	• Constructing or upgrading flood defence infrastructure		

Assets	Example projects (non-exhaustive list)	DNSH to mitigation	Adaptation and resilience
• pumping stations • levees • gates	• Installing or upgrading flood monitoring and warning systems	●	●

Table A 2. Illustrative nature-based solutions and hybrid infrastructure covered by these Water Infrastructure Criteria

Assets	Example projects (non-exhaustive list)	DNSH to Mitigation	Adaptation and resilience
Water storage, including but not limited to: • rainwater harvesting systems • aquatic ecosystems (lakes, wetlands) • aquifer storage • snowpack runoff • groundwater recharge systems • riparian wetlands • storm water management	• Active snowpack management programme	■	■
	• Using parks, natural areas for storm water management		
	• Creating groundwater recharge areas for aquifer storage		
Flood defences, including but not limited to: • ecological retention, current force reduction mechanisms • relocation of assets from floodplains or 'room for the river'	• Restoring riparian wetlands for flood storage	■	■
	• Creating safe delta flood zones as natural habitat for the river to expand into		
	• Altering flow mechanics to reduce the force of flood stage flows		
Drought defences, including but not limited to:	• Using pumps to transfer waters to or from natural aquifers	■	■

• aquifer or groundwater storage (pumped) • recharge zone management • wetland storage • snowpack management • evaporation reduction efforts	• Using metering or monitoring systems to detect and warn of issues with flow, snowpack, or groundwater systems, to inform water management and drought warnings		
	• Planting or removing vegetation explicitly to modify water temperatures, evaporation rates, runoff patterns		
Water treatment, including but not limited to: • natural filtration or recycling systems (e.g., wetlands, watersheds, forests) • engineered natural filtration or settling systems • forest and forest fire management for management of water quality or quantity	• Using wetland with native plants for water filtration, nutrient management	■	■
	• Explicitly integrating existing natural features and ecosystems for water quality treatment, including land cover management		
Storm water management, including but not limited to: • permeable surfaces (parks, roads, etc.) and evapotranspiration systems • groundwater recharge • rainwater harvesting • constructed ecological retention ponds • forests for water quality management • erosion control systems	• Removing pavement, creating new substrate to improve groundwater absorption and reduce runoff	■	■
	• Creating wetland retention ponds		
Ecological restoration and management • erosion control systems • hydrological restoration	• Developing an environmental flows regime	■	■
	• Restoring hydrological function, aquatic species or communities		
	• Using sediment transport to reduce or restore downstream deposition		

Table A 3. Assets covered by the Water Infrastructure Criteria under Climate Bonds Resilience Taxonomy

Assets	Investments in the CBRT (all projects are conventional or engineered unless specified)	Climate hazard	DNSH to Mitigation	Adaptation and resilience
Flood management	• Building sand dams	Flood damage	🟡	🟡
	• Constructing physical barriers to flooding, such as levees and dikes		🟡	🟡
	• Reconnecting floodplains by removing physical barriers such as levees or dikes		🟡	🟡
	• Creating infiltration ponds **(hybrid)**		🟡	🟡
	• Creating or expanding combined sewer overflow storage capacity		🟡	🟡
	• Increasing flood drainage capacity		🟡	🟡
	• Installing floodgates		🟡	🟡
	• Installing pumps		🟡	🟡
	• Constructing, expanding, operating or upgrading flood management systems		🟡	🟡
	• Expanding multi-purpose flood retention areas **(NBS)**		🟡	🟡
Wastewater collection and treatment	• Implementing stormwater separation	Flood damage	🟢	🟢
	• Constructing, expanding, operating, upgrading or managing wastewater treatment systems		🟡	🟡
	• Expanding wastewater recycling to enhance water supply portfolio	Water stress	🟡	🟡
	• Constructing, upgrading or managing wastewater infrastructure	Multi-hazard	🟡	🟡

Water supplies	• Installing water metering	Water stress	🟢	🟢
	• Installing and implementing automated water control systems (e.g., digital twins)	Multi-hazard	🟢	🟢
	• Constructing, expanding, operating, upgrading or managing desalination facilities	Water stress	🟡	🟡
	• Establishing forecast-informed reservoir operations system and operational practices	Multi-hazard	🟢	🟢
	• Establishing and/or expanding managed aquifer recharge facilities and/or operational practices **(hybrid)**	Water stress	🟡	🟡
	• Installing water resource monitoring equipment	Multi-hazard	🟢	🟢
	• Constructing, expanding, operating or upgrading water supplies	Water stress	🟡	🟡
	• Expanding water storage, transmission and distribution networks	Water stress	🟡	🟡
	• Constructing, upgrading or managing drinking water infrastructure	Multi-hazard	🟡	🟡
	• Installing leak detection equipment	Water stress	🟢	🟢
	• Implementing demand management and water conservation programmes	Water stress	🟢	🟡
	• Installing rainwater harvesting systems	Multi-hazard	🟡	🟡

Appendix B: Members of Technical Working Group and Industry Working Group

Climate Bonds Coordinator	
Aishwarya Sankar	Senior Sustainability Analyst and Climate Bonds Resilience Taxonomy Coordinator, Climate Bonds Initiative
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Industry Working Group Members **Members of the following organisations have participated in IWG meetings and provided critical and useability focused consultation and feedback on the Criteria, but this does not automatically reflect endorsement of the Criteria by all members.**	
Eugene Karl Montaya	Treasurer, Board of Directors, Waterfront Alliance, Global
William Wallock	Analyst, Climate Policy Initiative, US
Mahesh Krishnamoorthy	Senior Manager, Morningstar Sustainalytics, India

Dr Bradley Todd Hiller	Lead Climate Change Specialist, Islamic Development Bank, Saudi Arabia
Monica Reid	CEO and Founder, Kestrel, US
Jude Cobbing	Senior Program Manager, Daugherty Water for Food Global Institute, University of Nebraska, US
Joel Kolker	Independent Advisor; Lead Water & Sanitation Specialist, Global Water Security & Sanitation Program, World Bank, US
Raja Varadan	Independent Advisor and Water Specialist, India
Sujatha Srikumar	Independent Advisor, India

[1] Climate Bonds Initiative. https://www.climatebonds.net
[2] Climate Bonds Initiative. Climate Bonds Standard and Certification Scheme. https://www.climatebonds.net/files/documents/publications/CBI-certification-brochure.pdf
[3] Climate Bonds Initiative. Climate Bonds Standard. https://www.climatebonds.net/our-expertise/standard-sector-criteria-certification/the-standard
[4] Climate Bonds Initiative. Water Infrastructure. https://www.climatebonds.net/our-expertise/climate-bonds-standard-and-certification-scheme/sector-criteria/water-infrastructure
[5] Climate Bonds Initiative. 2022. Water Infrastructure Criteria under the Climate Bonds Standard. Criteria Document. https://www.climatebonds.net/files/documents/Water_Criteria_Document_August-2022.pdf
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[7] See the Electrical Grids and Storage Criteria for acceptable sources or methodology for grid factor. https://www.climatebonds.net/files/documents/Climate-Bonds_Electrical-Grids-Storage_Criteria-document_November-2021.pdf
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