

The GBP Impact Reporting Working Group

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Suggested Impact Reporting Metrics for Green Building Projects

March 2019

The preparation of this material was **led by an informal Technical Working Group comprising EBRD, International Finance Corporation, KfW, NIB and The World Bank, and kindly co-ordinated by EBRD**. Special thanks are extended to this Technical Working Group, for their detailed work, that drove the preparation of this document. **The material also benefited from generous input from members of the Impact Reporting Working Group, coordinated by EBRD and KfW**, with support from ICMA.

The GBP Impact Reporting Working Group currently consists of the following organisations:

Working Group Coordinators:

EBRD
KfW

Working Group Members:

Actiam	Luxembourg Stock Exchange
Amundi	Mainstreet Partners
Anglian Water	Mirova
Ashurst	Mizuho
Axa IM	Moody’s
Bank of America Merrill Lynch	Morgan Stanley
Blackrock	Natixis
BNP Paribas	Nordea
Crédit Agricole CIB	Nordic Investment Bank (NIB)
Carbone4	Skandinaviska Enskilda Banken (SEB)
Climate Bond Initiative	SNCF Reseau
Ceres	Société Générale
CICERO	South Pole
EDF	The Nature Conservancy
ICADE	TIAA Investments
I-Care & Consult	Vasakronan
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International Finance Corporation (IFC)	World Wild Fund for Nature (WWF)
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Green Bonds

Working Towards a Harmonised Framework for Impact Reporting for Green Building Projects

February 2019
Introduction

The overall goal of the green bond market is to promote and amplify the important role that financial markets can play in helping to address environmental issues. By explicitly specifying the environmentally beneficial projects to which the bond proceeds are directed, Green Bonds allow investors to assess and direct capital to environmentally sustainable investments. It is assumed that the green bonds referred to in this document are aligned with the Green Bond Principles (“GBPs”)¹. The GBP help enhance the integrity and transparency of environmental finance, including through recommending impact reporting.

In December 2015, a working group of eleven International Financial Institutions (IFIs) published a “Harmonized Framework for Impact Reporting”². The framework outlined core principles and recommendations for impact reporting in order to provide issuers with reference and guidance for the development of their own reporting and provided core indicators and reporting templates for energy efficiency and renewable energy projects.

In common with the release of harmonised frameworks for impact reporting on sustainable water and wastewater management projects (in June 2017), for sustainable waste management and resource-efficiency projects³ (in February 2018) and for clean transportation projects (in June 2018), **this document builds on the earlier framework and outlines a harmonised framework for impact reporting on green building projects.** This is one of the ten broad categories of eligibility for Green Projects under the GBP 2018. The GBP category for Green Buildings is understood to address broad considerations such as water usage and waste management in addition to energy consumption, whereas a focus solely on energy-efficiency and low carbon in buildings would come under the GBP category “energy efficiency (such as in new and refurbished buildings...)”, and it is therefore recommended that these projects be reported using the relevant indicators and templates provided by the aforementioned “Harmonized Framework for Impact Reporting”.

This document summarises the conclusions of an informal technical working group,⁴ which has received broader input through the Impact Reporting Working Group convened by the GBP Executive Committee. It has been requested by many in the investor community, as reflected both in the GBP and in the responses to the formal consultations conducted by the GBP in 2016 and 2017.

The GBP recommend the use of both qualitative performance indicators and, where feasible, quantitative performance measures with the disclosure of the key underlying methodology and/or assumptions used in the quantitative determination. This document provides **core quantitative indicators for green building projects as well as reference reporting templates** that issuers can adapt to their own circumstances. These templates make reference to the most commonly used indicators, however, the working group acknowledges that other indicators might be relevant as well.

¹ See: <http://www.icmagroup.org/Regulatory-Policy-and-Market-Practice/green-bonds/>

² See: <http://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/20151202-0530-FINALRevised-Proposal.pdf>

³ <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Water-Wastewater-Impact-Reporting-Final-8-June-2017-130617.pdf> and <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Waste-Management-Reporting-Metrics-and-Templates-Final-230218.pdf> and <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Clean-Transportation-Reporting-Metrics-4-June-2018.pdf>

⁴ Participants: European Bank for Reconstruction and Development (EBRD), International Bank for Reconstruction and Development (IBRD), International Finance Corporation (IFC), Kreditanstalt für Wiederaufbau (KfW), and Nordic Investment Bank (NIB).

All recommendations, indicators and templates need to be compatible with different approaches to the management of proceeds, which can be based on allocations to either individual projects or project portfolios.

This document does not cover impact reporting on projects focussed specifically on resilience to climate change, which may be deemed to fall under another GBP category: “climate change adaptation”. The authors of this document acknowledge the importance of developing harmonised indicators for such projects as well as for projects pursuant to the remaining GBP categories.

Suggested Impact Reporting Metrics for Green Building Projects:

Introduction:

The indicators proposed herein aim to capture and illustrate the environmental and sustainability benefits of projects relating to green buildings, which are recognised by the GBP (2018) for Green Projects under one of the ten broad categories of eligibility for Green Projects:

“green buildings which meet regional, national or internationally recognised standards or certifications”.

The GBP category for Green Buildings is understood to address broad considerations such as water usage and waste management in addition to energy consumption, whereas a focus solely on energy-efficiency and low carbon in buildings would come under the GBP category “energy efficiency (such as in new and refurbished buildings...)”, and it is therefore recommended that these projects be reported using the relevant indicators and templates provided by the aforementioned “Harmonized Framework for Impact Reporting”.

This document builds on the previous work published by the GBP Impact Reporting Working Group in June 2017 entitled “Suggested Impact Reporting Metrics for Sustainable Water and Wastewater Projects”, in February 2018 of “Suggested Impact Reporting Metrics for Sustainable Waste Management and Resource-Efficiency Projects”, and in June 2018 of “Suggested Impact Reporting Metrics for Clean Transportation Projects”.

While this document proposes certain quantitative impact reporting metrics, the GBP also encourages issuers to provide qualitative information in relation to their green building projects, whether they be for new buildings or the retrofitting of existing buildings. Such qualitative information is also encouraged to provide for a meaningful contextualisation of the baseline situation and the improvement as a result of the project. For green building projects, as is highlighted in the aforementioned wording of this GBP category, regional, national or (optimally) internationally recognised standards or certifications are key, providing important baselines against which the green building project can be benchmarked. Other salient information such as the siting of the building and its purpose may be critical to understanding the design of the project, and its benefits in managing resources and protecting the environment. Indeed, while, as aforementioned, this document does not cover impact reporting on projects focussed specifically on resilience to climate change, which may be deemed to fall under the GBP category of “climate change adaptation” for which specific metrics are yet to be proposed, the reporting of pertinent information on building resiliency to address such risks as flood prevention, heat stress and water shortages is nevertheless strongly encouraged.

While the GBP category, as noted above, uses the term “green buildings”, the Green Bond market aims to finance projects that make a significant contribution to environmental sustainability. This therefore may be deemed to encompass all ambitious “sustainable” building projects that represent meaningful progress towards this goal across all core dimensions. Although the highest potential to reduce energy consumption will result from improvements made to the existing building stock, we recognise that the needs of society and the economy will continue to drive demand for new buildings. While the construction phase will have a significant impact on the environment, including the climate, and few if any new buildings are, in reality, “zero energy buildings”, we nonetheless understand the GBP’s Green Building category to encompass any new building that minimises the impact of both its construction and life-cycle use on the environment in line with ambitious regulatory requirements and best industry practice.

Furthermore, in keeping with the aforementioned work published by the GBP Impact Reporting Working Group, this document provides examples of benchmarks developed by internationally recognised conventions and initiatives. These should not be seen as baselines for the determination of green building projects: in certain jurisdictions, meeting an internationally recognised standard may require a significant improvement beyond “business as usual”, whereas in other geographies the same standard may represent a mandatory baseline. In such cases, an eligible green building project may be expected to drive for a meaningful outperformance of the benchmark.

The proposed core and other sustainability indicators are designed to facilitate quantitative reporting at a project and/or at a portfolio level across geographies. The importance of the geographic context in the assessment of solutions reinforces the benefit of additional disclosures, such as the national, regional and local context, information on the population served, pollution levels, and specific CO₂ electricity grid baselines. Where fossil fuels are used on-site, it will be important to understand whether these are lower carbon content fuels and how the project promotes the transition to “Zero Net Carbon”. While the Core Indicators proposed focus on the construction, development and refurbishment of Green Buildings, and are thus also relevant to their purchase, several Other Sustainability Indicators are relevant to the management of Green Buildings over time.

For a meaningful assessment of the aggregate impact of projects, consistency in the methods of calculation, baselines and benchmarks is necessary. Thus for the purpose of data quality, issuers are encouraged to disclose additional technical reports and/or data verification protocols where additional information could be provided as well as links to the sources of such data and methods of calculation. The robustness of disclosures and/or the underlying methodology may be enhanced by making available any independent assessment from consultants, verification bodies and/or institutions with recognised expertise in environmental sustainability such as LEED, BREEAM and BEAM. We note, however, that many of these assessments and standards incorporate evaluations that extend beyond environmental factors, and thus issuers should seek to provide greater transparency on their scores against the “green” requirements.

Guidance and Definitions:

New Buildings:	New construction and the development of buildings must take account of their impact on ecosystems and biodiversity. Where no certification standard is available or where the certification standard referenced does not provide an analysis of location considerations, these should be highlighted in reporting in particular to demonstrate how construction activities have avoided building on land that should be protected, how access to public transportation is incorporated, and any measures taken to offset negative impacts on biodiversity.
Retrofitted Buildings:	<p>The retrofit, upgrade or renovation of an existing building, building unit, or any building component or system should take into consideration all efforts to improve energy performance (or reduce energy use for comparable quality of enabling environment and for comparable services) in order to meet some minimum energy efficiency criteria whenever this is technically, functionally and economically feasible.</p> <p>Where both the purpose of the building and its use remain unchanged, the improved performance of the building can be reported against that attained prior to the project. Where the purpose and/or use of the building has been altered, the improved performance should be measured against baselines and benchmarks applicable to new buildings.</p>
Energy Use:	The annual energy input to the building in order to satisfy the energy needs associated with a typical use of the building and by the building services that provide an enabling environment in the building. It encompasses the amount of energy needed to meet the energy demand associated with, inter alia, energy used for heating, cooling, air-conditioning, ventilation, hot water and lighting.
Primary Energy Use:	Energy from renewable and non-renewable sources used in buildings and which has not undergone any conversion or transformation process. For further guidance on calculation of Primary Energy Use including renewable energy generated on site, ISO EN standards or applicable national methodologies for energy and carbon performance assessment in buildings.
Final Energy Use:	The total energy consumed by end-users in their building assets. It is the energy which reaches the final user's asset and excludes the energy used by the energy sector itself.
Gross Building Area (GBA):	Gross Building Area, also named Gross Floor Area ("GFA") corresponds to the total floor area contained in a building measured to the external walls. The physical environmental impact comes from the entire building, and therefore Gross Building Area is more relevant than Gross Letting Area, which is the amount of floor space available to be rented.
Certification Schemes:	While the importance of international certification schemes as industry benchmarks is highlighted by their prime position in the proposed Core Indicators, the associated costs and processes may be deemed prohibitive for small local players, or large portfolios of very small assets. Locally applicable proxies may therefore provide a relevant baseline when compatible with the major international certification schemes.

Core Indicators for Green Building Projects⁵:

A. Energy Performance

#1 Final and/or Primary Energy Use - in new buildings or retrofitted buildings

Indicators:

- kWh/m² of GBA p.a.; and
% of energy use reduced/avoided vs local baseline/building code; and, if relevant % of renewable energy (RE) generated on site (specifying the relevant RE form)

B. Carbon Performance

#2 Carbon reductions - in new buildings or retrofitted buildings

Indicators:

- kgCO₂/m² of GBA p.a; and
Annual GHG emissions reduced/avoided⁶ in tonnes of CO₂ equiv. vs local baseline/baseline certification level; and/or % of carbon emissions reduced/avoided vs local baseline/baseline certification level

C. Water Efficiency and Savings

#3 Water efficiency - in new buildings or retrofitted buildings

Indicators:

- m³/m² of GBA p.a ; and Annual absolute (gross) water use before and after the project in m³/a (for retrofitted buildings) and/or
% of water reduced/avoided vs local baseline/baseline certification level/IGCC /International Plumbing Code

D. Waste Management

#4 Waste management in the construction/demolition/refurbishment process in new or retrofitted buildings

Indicators:

- Amount p.a. of waste minimised, reused or recycled in % of total waste and/or in absolute (gross) amount in tonnes p.a.
- Waste removed in tonnes

⁵ Issuers that report on energy-efficient buildings are recommended to refer to core indicators and reporting templates of the energy efficiency section in the "Harmonized Framework for Impact Reporting" published in December 2015.

⁶ International guidelines for the calculation of emissions avoided, such as the GHG Protocol may provide further guidance for calculations.

E. Certification Standard, if available

#5 Type of scheme, certification level and m² GBA

Benchmarks:

- ❖ *Internationally and nationally recognised standards for Green Buildings such as LEED (Leadership in Energy and Environmental Design), BREEAM (Building Research Establishment Environmental Assessment Method), ANSI/ASHRAE/IES/USGBC Standard 189.1 Standard for the Design of High-Performance Green Buildings and/or the International Green Construction Code; other standards for Green Buildings widely known and/or used in the industry locally, such as CEEQUAL, DGNB, EDGE, the International Energy Conservation Code (IECC), the US Property Assessed Clean Energy Programs (PACE), Passive House or Swiss Minergie, when compatible with the aforementioned standards; National Minimum Requirements for Energy Efficiency in Buildings in EU states (based on the EU Energy Efficiency Directive) and Energy Performance Certificates (EPCs), or national certification schemes.*

Other Sustainability Indicators for Green Building Projects:

#1) Use of materials with lower environmental footprint - for both new buildings and retrofitted buildings

- *Indicators:*
- *Embodied energy (and carbon) over life-cycle (“cradle to grave”), in tons CO₂*
- *% of embodied energy (and carbon) reduced over life-cycle (“cradle to grave”), vs local benchmark/baseline*

#2) Land Use and Biodiversity – for new buildings

- *Indicators:*
- *Land remediated/decontaminated/regenerated, in ha or m²*
- *% of unadulterated Green spaces before and after the project*

#3) Water Efficiency - for both new buildings and retrofitted buildings

- *Indicators:*
- *Amount of rainwater harvested and reused in m³/a*
- *Recharge to groundwater in mm/d, mm/a*

#4) Waste Management - in the use of both new buildings or retrofitted buildings

- *Indicators:*
- *Recycling, re-use or composting of non-hazardous waste in %*

#5) Indoor Air Quality - for both new buildings and retrofitted buildings

- *Indicators:*
- *Reduction of particulate matter vs local baseline: sulphur oxides (SO_x), and nitrogen oxides (NO_x) carbon monoxide (CO), (PM_{2.5}/PM₁₀) and non-methane volatile organic compounds (NMVOCs)*

#6) Light quality and energy efficiency - for both new buildings and retrofitted buildings

- *Indicators:*
- *Number of LED or SSL lighting fixtures with lumen/watt (Lm/W)*
- *Energy efficiency from installation of motion detectors (kWh) vs baseline/previous equipment*
- *Energy efficiency from installation of low-E window glass panels vs baseline/previous equipment*

#7) Transport connectivity and clean transportation infrastructure - for both new buildings and retrofitted buildings

- *Indicators:*
- *Land use density including ‘transit oriented development’ (people and jobs per unit of land area)*
- *Number of Electric vehicle charging stations as a % of total parking and/or number of bicycle facilities provided*
- *Distance (in Km) to public transportation (thereby reducing the scope 3 emissions of the building).*

Illustrative Core Indicator Summary Template for Project-by-Project Report⁷:

Green Building Projects	Signed Amount a/	Share of Total Project Financing b/	Eligibility for green bonds	Green Building component	Allocated Amount c/	Project lifetime d/	Gross Building Area (GBA)	#1) Final and/or Primary Energy Use e/			#2) Carbon reductions e/			#3) Water efficiency e/		#4) Waste management e/		#5) Certification Standard	
								kWh/m ² of GBA p.a.	% of energy use reduced/avoided	% of renewable energy generated on site	kgCO ₂ /m ² of GBA p.a.	tonnes of CO ₂ equiv. reduced/avoided p.a.	% of carbon emissions reduced/avoided	m ³ /m ² of GBA p.a.	annual water savings in m ³ /a and/or in %	waste minimised, reused, recycled in % of total waste and/or in tonnes p.a.	waste removed in tonnes	type	certification level
Project name f/	currency	%	% of signed amount	% of signed amount	currency	in years	in m ²												
e.g. Project 1	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX

Illustrative Core Indicator Summary Template for Portfolio-based Report⁷:

Green Building Portfolios	Signed Amount a/	Share of Total Project Financing b/	Eligibility for green bonds	Green Building component	Allocated Amount c/	Average Portfolio lifetime d/	Gross Building Area (GBA)	#1) Final and/or Primary Energy Use e/			#2) Carbon reductions e/			#3) Water efficiency e/		#4) Waste management e/		#5) Certification Standard	
								kWh/m ² of GBA p.a.	% of energy use reduced/avoided	% of renewable energy generated on site	kgCO ₂ /m ² of GBA p.a.	tonnes of CO ₂ equiv. reduced/avoided p.a.	% of carbon emissions reduced/avoided	m ³ /m ² of GBA p.a.	annual water savings in m ³ /a and/or in %	waste minimised, reused, recycled in % of total waste and/or in tonnes p.a.	waste removed in tonnes	type	certification level
Portfolio name	currency	%	% of signed amount	% of signed amount	currency	in years	in m ²												
e.g. Portfolio 1	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX

Notes:

- a/ Signed amount represents the amount legally committed by the issuer for the project, a portfolio of projects or component that is/are eligible for green bond financing.
- b/ This is the share of the total project cost that is financed by the issuer. Issuers may also report the total project cost. When aggregating impact metrics only the pro-rated share should be included in the total.
- c/ This represents the amount of green bond proceeds that has been allocated for disbursements to the project/portfolio.
- d/ Based on either the expected economic life or financial life of the project(s), if applicable. Issuers should disclose the reporting basis used.
- e/ The methodology and assumptions used should be disclosed for calculations in quantitative reporting.
- f/ Confidentiality considerations may restrict the project level detail that can be disclosed, but issuers should aim to report the list of projects and either project level or aggregate level committed and allocated amounts and core indicator amounts.

⁷ Please add other indicators (see page 8) as applicable.