A World Bank Guide for Public Sector Issuers

THE WORLD BANK
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GREEN BOND PROCEEDS MANAGEMENT & REPORTING

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CONTENTS

FOREWORD

A green bond is a financial instrument that taps the capital markets to support investments addressing environmental challenges, including climate change. The growth of the green bond market has sparked interest from decision-makers in treasury departments in many countries. Issuance in 2017 reached USD 165 billion and by June 2018 there were about USD 335 billion in outstanding green bonds.

The World Bank is a key promoter of green bonds as a means to raise awareness about today's pressing environmental challenges and the value of increased transparency on the use of proceeds for social and environmentally oriented investments. The Bank has issued over 140 green bonds in 19 currencies totalling USD 11 billion (as of July 2018). Building on its experience as a pioneer in the green bond market, the World Bank is honored to provide advisory services to governments and sub-sovereign entities as they build expertise in issuing green bonds with the potential to attract new investors to climate and environmental investments. A common question from issuers is how to meet the additional proceeds management and reporting requirements that make green bonds unique. We hope this Guide will become the "go to" source that helps demystify these requirements. This practical Guide takes the approach of working with the existing capacity and systems of issuers and gradually aiming at higher levels of reporting. It offers examples, answers to frequently asked questions, and a sample reporting template to guide users as they work through these tasks. We hope the pages that follow will be helpful as more new issuers move forward in issuing green bonds. We welcome suggestions to improve this Guide as it evolves. Please send comments and queries to **fhussain@worldbank.org**.

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The content benefited from the helpful contributions of green bond issuers in Fiji, Indonesia and Malaysia, who answered a questionnaire about existing systems and practices for financial management and results monitoring of their development investments, as well as the French Tresor. Investors and observers of the green bond market also provided informal feedback.

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INTRODUCTION

The green bond market has seen growing participation from sovereign, sub-sovereign, and other issuers in the public sector. In the initial phase of the market, multilateral banks such as the World Bank led the way, followed by corporate issuers, and more recently, public sector issuers from several countries, including Belgium, Fiji, France, Indonesia, Lithuania, Nigeria, and Poland. Many local/city governments have issued or have expressed an interest in issuing green bonds. The World Bank is engaged with several developing countries requesting guidance in setting up their green bond programs to raise awareness and contribute to expanding the sources of funding for environmental and climate investments. In 2017 alone, through its advisory services, the World Bank facilitated the issuance of the first green Islamic bonds (sukuk) in Malaysia and the first sovereign green bonds issued by the Republic of Fiji and Nigeria. The Bank also supported the development of the ASEAN Green Bond Standards and the Indonesian Green Bond Regulations as well as green bond guidelines in a number of countries.

Compared to a regular bond, a green bond carries the issuer's commitment to raise proceeds to support defined "green" purposes, to track results, and to communicate this information to investors. This enhanced transparency around the use of proceeds and their expected impact often comes with the expectation that the issuer is prepared to have a third party provide a second opinion or other verification of its internal processes. These features mean that prospective issuers need to adapt and improve existing systems to meet these requirements. This Guide aims to facilitate this task, focusing on the needs of an issuer in the public sector. The guiding principle followed is to use existing systems and capacities to meet the core requirements while building the flexibility to improve practice over time.

PURPOSE AND SCOPE

More specifically, the objective of this Guide is to clarify the processes issuers in the public sector can follow to meet two of the four elements of the Green Bond Principles (GBP): proceeds management and reporting (see Box 1 for a summary of the GBP's four elements). The advice provided is based on feedback from international green bond investors, which shows a range of opinions, just as could be expected from different views from domestic investors. Issuers should, therefore, calibrate own practices with feedback received from target investors.

The Guide assumes that issuers will define separately the categories and internal process to declare eligibility of green projects; and thus, offers only broad considerations for defining eligibility. The Guide directs users to sources of additional technical information.

The intended audience for this publication are Treasury departments in charge of green bond issuance, units or agencies in charge of financial management and results monitoring within the issuer's structure, and line agencies accountable for implementation or oversight of green projects. The content benefits from the helpful contribution of public sector issuers in Fiji, Indonesia and Malaysia, who answered a questionnaire about existing systems and practices for financial management and results monitoring of their development investments. The Guide is organized in four sections: 1. Guide to Proceeds Management; 2. Impact Reporting Template; 3. Notes to Impact Reports; and 4. References. Parts 1 and 2 contain frequently asked questions (FAQs) anticipating areas of interest to readers.

Part 1

GUIDE TO PROCEEDS MANAGEMENT

ELIGIBILITY

The overarching goal of the green bond market is to support financing of projects aimed at environmental sustainability. Issuers follow their own framework based on national or regional green bond standards/ guidelines[1] (when available) or the Green Bond Principles (see Box 1, steps 1 and 2), define the specific categories of environmental projects considered eligible, and set up an internal process to declare eligibility. Since treasury or debt management staff are normally less familiar with the government's environmental goals and programs, committees or working groups composed of environment and other line agency staff are often set up to help determine the profile of the environmental projects deemed eligible for green bond financing. Key investors and other stakeholders are also often consulted as part of this process. When a national green bond framework or regulation exists, such as in China or Indonesia, specific environmental priority areas are identified and roles defined in terms of who participates in declaring eligibility. Examples include climate change mitigation and adaptation priority areas in support of the country's Nationally Determined Contributions under the UN Paris Climate Accord, and/or other relevant national priorities, such as pollution abatement and green cities. The participation of environmental and technical staff from line ministries helps in obtaining more detailed information about the eligible projects which will be useful for preparing the green bond's impact report. This initial step is, therefore, relatively straightforward once the roles of treasury and technical teams are clarified in reviewing the prospective portfolio of green projects.

As shown in Box 1, step 2 also mentions disclosure of the issuer's overall sustainability policy and the broader framework for managing environmental and social risks in public investments. This aspect responds to investor interest in knowing more about the issuer's broader sustainability strategy as well as its regulations and practices; thus, a section describing these topics is recommended as introduction to impact reports. Step 3 relates to how the net proceeds from the green bonds, or an amount equal to these net proceeds, will be tracked against disbursements for these projects.

[1] The World Bank works with governments and regional entities to help them develop green bond standards and guidelines aligned with the ICMA Green Bond Principles and international best practices.

BOX 1 Summary of Green Bond Principles*

The Green Bond Principles (GBP) are voluntary process guidelines developed by market participants to help the green bond market develop with integrity. They have been used as a basis for countries and regional bodies that have issued their own green bond framework guidelines, such as China, Indonesia, and ASEAN. Four core elements of the GBPs with key recommendations are:

1 • **USE OF PROCEEDS.** Green bond proceeds are to be applied for environmental (or "green") projects with an indicative list of eligible project categories. Refinancing is allowed and recommends disclosing share of refinancing and look-back period for refinanced projects.

2 • **PROCESS FOR PROJECT EVALUATION AND SELECTION.** Recommends issuers to **disclose their overall sustainability objectives, the process used to determine eligibility of green projects, and the process to manage environmental and social risks of these projects**. Recommends an issuer's process for project evaluation and selection be supplemented by an external review.

3 • **MANAGEMENT OF PROCEEDS.** *"The net proceeds of the Green Bond, or an amount equal to these net proceeds, 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 the issuer in a formal internal process linked to the issuer's lending and investment operations for Green Projects."* Recommends that so long as the green bond is outstanding the issuer should disclose periodic reconciliation of the green account against project expenditures and how the unallocated balance is placed. Encourages use of auditor or third party to verify internal tracking and allocation process.

4 • **REPORTING.** Recommends annual reporting of the amounts allocated and results of the eligible green projects until *"full allocation, and as necessary thereafter in the event of material developments."* Also recommends the use of qualitative, and **when feasible, quantitative performance measures/ indicators.**

(Direct quotes in Italics and emphasis added in bold)

TRACKING GREEN BOND PROCEEDS

In step 3, an issuer is asked to track the flow of funds from the moment the green bond is issued until funds are reconciled against expenditures of the eligible green projects. The main purpose of "segregating" green flows – the defining characteristic of green bonds - is that investors care not just about the financial return, e.g., bond coupon payments and/or value at maturity, but about their association with the specific green portfolio declared by the issuer as eligible. This is particularly relevant for public issuers that may manage many investment areas such as infrastructure, military, among other expenditures, which green bond investors may prefer not to be associated with. While money is fungible, these investors welcome increased transparency around the use of proceeds and support issuers who are able to invest equivalent amounts in green projects within a reasonable amount of time after bond issuance (typically six months to a year).

BOND PROCEEDS TRACKING APPROACHES

For the purposes of tracking net proceeds of a green bond, issuers may use any one of the following: 1) separate green account; 2) sub-account; 3) virtual green account/cash account.

1 • **The separate green account** applies when the issuer creates a separate bank account to deposit the bond proceeds, and subsequently, debits such account as green projects require funding.

2 • **The sub-account** approach applies when the issuer credits the green bond proceeds to a general account where all other funding is deposited, but simultaneously sets up a green sub-account to transfer funds only when the green projects require funding.

3 • **In the "virtual" green account/cash account** approach, the green bond proceeds are treated exactly the same way as all other bonds and funding, e.g., transferred to a general account, and the green proceeds and project expenditures are tracked "virtually", i.e., as an accounting entry initially credited with the bond amount and gradually debited as projects require funding. The actual transfers to the projects take place through the issuer's own financial management system, with the virtual green account reconciling equivalent debits to the original bond amount.

Photo © Quantum Solar Park Malaysia

BOX 2 Green Bond Proceeds Tracking Approaches Used by Sovereign Issuers

Poland: All proceeds from the green bond are set aside in a designated account for funding projects defined in the eligible sectors disclosed in Poland's green bond framework. The proceeds are credited to a separate "Green Cash Account" and disbursed to green bond eligible projects. Disbursements are often made over a period of time, depending on a project's amortization schedule. As green bond proceeds are disbursed, corresponding amounts are adjusted from the "Green Cash Account" accordingly on a regular basis. See Poland's green bond framework here: http://www.finanse.mf.gov.pl/documents/766655/c7ef4509-80ee-41e6-8dca-084250f63b6b.

France: The French Tresor pools green bond proceeds in the general account of the French State with other bond proceeds, but is fully transparent with the allocation of proceeds and ensures that the funds raised are allocated for a notional equivalent amount to green projects. At the end of the fiscal year, the budget is audited by the Court of Auditors ("Cour des Comptes") and presented to the Parliament in the form of a "settlement finance bill". Based on the settlement finance bill, a report on the green eligible expenditure is prepared, reviewed by an external audit firm and made public. See France's green bond framework here: http://www.aft.gouv.fr/documents/%7BC3BAF1F0-F068-4305-821D-B8B2BF4F9AF6%7D/publication/attachments/25562.pdf.

Fiji: The Ministry of Economy opened a designated "ring-fenced" sub-account to receive proceeds from the green bond issuances and is responsible for tracking eligible expenditures. See Fiji's green bond framework here: https://rbf.gov.fj/getattachment/b19a81cf-4179-49c7-8667-579b7c7bf166/Fiji-s-Green-Bond-Framework-October-2017.pdf?lang=en-US.

Indonesia: The proceeds of each green bond or green sukuk are managed within the Government's general account in accordance with sound and prudent treasury management policies. Upon request from the line ministries, the green bond and green sukuk proceeds are credited to a designated account of the relevant ministries for funding projects as defined in the green bond framework. See Indonesia's green bond framework here: http://www.djppr.kemenkeu.go.id/page/loadViewer?idViewer=7625&action=download.

For the purposes of illustration, this Guide uses a hypothetical portfolio of 12 eligible projects to demonstrate the sample flow of funds. It is also assumed that the profile of disbursements or expenditures for the eligible projects throughout the bond maturity is as shown in the worksheet (Figure 1). Issuers should be prepared to account for the proceeds raised in internal accounting systems to track these flows periodically, shown here as quarterly. An accounting entry or "green account" should be credited with the amount raised, USD 60 million, as shown in Figure 1 which uses a hypothetical date of January 1, 2018. It is assumed that this is a 2-year bond maturing January 1, 2020.

FIGURE 1 • DISBURSEMENT/EXPENDITURE FOR ELIGIBLE PROJECTS (FIGURES IN THOUSANDS USD)

Worksheet		Actual Disbursements Y1					Actual Disbursements Y2				
Project Name	Approved Amount	Q1	Q2	Q3	Q4	Total Y1	Q1	Q2	Q3	Q4	Total Y2
Solar Farm	4,000	300	1,000	1,000	1,000	3,300	700	0	0	0	700
Wind Farm	5,000	400	500	1,000	1,000	2,900	800	700	600	0	2,100
Industrial Efficiency	5,000	500	400	1,000	1,000	2,900	800	600	400	300	2,100
Lighting Efficiency	3,000	300	700	1,000	1,000	3,000	0	0	0	0	0
Mass Transit	10,000	1,000	2,000	2,000	1,000	6,000	1,000	1,000	1,000	1,000	4,000
Light Train	15,000	1,500	2,000	3,000	3,000	9,500	1,500	1,500	1,500	1,000	5,500
Sustainable Agriculture	3,000	300	700	800	800	2,600	300	100	0	0	400
Afforestation	4,000	400	800	800	800	2,800	800	400	0	0	1,200
Waste Management	2,000	2,000	0	0	0	2,000	0	0	0	0	0
Water Management	4,000	4,000	0	0	0	4,000	0	0	0	0	0
Coastal Protection	3,000	500	700	500	500	2,200	500	300	0	0	800
Flood Disaster Prevention	2,000	200	200	200	200	800	200	300	300	400	1,200
Total	**60,000**	**11,400**	**9,000**	**11,300**	**10,300**	**42,000**	**6,600**	**4,900**	**3,800**	**2,700**	**18,000**

A green bond ledger shown in Figure 2 shows the equivalent amounts for each quarter. The annual report to investors can include this level of aggregate flow of funds since project-by-project detail is unnecessary.

FIGURE 2 • GREEN BOND LEDGER ACCOUNT (FIGURES IN THOUSANDS USD)

	Credit	Debit	Balance
January 1st, 2018	**60,000**		
Y1-Q1		11,400	48,600
Y1-Q2		9,000	39,600
Y1-Q3		11,300	28,300
Y1-Q4		10,300	18,000
Y2-Q1		6,600	11,400
Y2-Q2		4,900	6,500
Y2-Q3		3,800	2,700
Y2-Q4		2,700	0

FAQs

Q1. Since eligible green projects may not be quite ready to receive funding, how can an issuer invest or otherwise use green bond proceeds before green projects require funding?

Whether invested in short-term instruments, held in cash or other, the issuer should be transparent in their communication to investors about how it plans to manage the green bond proceeds before green projects require funding.

Q2. What form of funds tracking is more suitable to public sector issuers?

The answers to the questionnaire mentioned earlier reveal that public entities may find it difficult to create a separate account or sub-account (options 1 and 2 in page 3) to show how they are separately tracking proceeds from green bonds from other funding sources. Likewise, separating the application of these funds within the often much larger budget would be difficult. However, it is possible to track equivalent amounts applied against disbursements for the eligible green projects on a periodic basis using the "virtual" approach (option 3).

Q3. How long can proceeds be kept in liquidity or otherwise be invested before utilization for green projects?

There isn't a norm for this, but the general practice is six months to a year. Investors expect to know how the proceeds are managed before application towards eligible green projects. When funds are invested before application, disclosure of the investment policies or eligible instruments is recommended.

The issuer accounts for the expenditures/disbursements against the eligible projects at least every quarter and tracks the sum. In our example, disbursements for Q1 were USD 11.4 million and are shown as a debit to the initial credit of USD 60 million on issue date.

Q4. Is it a requirement to disclose the flow of funds on a quarterly or project-by- project basis?

There isn't a norm for this, but most issuers only report the aggregate flows on an annual basis, even if they keep track quarterly. They may keep internal records for fund management and auditing purposes. The World Bank reports committed and allocated loan amounts on project-by-project basis and annually.

Q5. How should an issuer report the application of green bond proceeds for refinancing?

The GBPs recommend reporting the share of the total bond that is used for refinancing. Some investors may have a preference for a higher proportion of "new" projects, meaning new investments being made as opposed to improving the financing costs of past projects. Likewise, when refinanced projects are included, reporting the length of time in the past that such projects were completed is also recommended (look-back period).

Q6. In the case of two or more green bonds issued, can the tracking of funds be co-mingled or should each be handled separately?

Some issuers issue more than one green bond at the same time or within the period it takes for the green projects to disburse. Most issuers manage such flows as a "program" in a single account and do not distinguish the flows from individual bonds. The bond documentation will refer to eligible projects which can receive allocations from one or all of the green bonds issued.

Q7. Until when should an issuer report the flow of funds?

Generally speaking, until bonds mature. The exception could be a situation where the financial or physical completion of some of the green projects may take longer and the issuer wishes to continue reporting until completion (Section 2 below expands on this aspect).

Q7. What level of auditing or third-party review of the financial flows is expected?

Refer to country green bond guidelines or the GBPs. The latter recommend "the use of an auditor, or other third party, to verify the internal tracking method". The Fiji Government commits to appointing a third-party auditor to provide an annual assurance report, ***"confirming that an amount equal to the net proceeds of the green bonds has been allocated in compliance with all material respects of the eligible projects criteria and use of proceeds section set forth in the framework."***

(Direct quotes in bold Italics)

Part 2

IMPACT REPORTING TEMPLATE

A unique aspect of green bonds is the requirement to provide investors insight about the expected environmental benefits of the projects the issuer declares as "green." The growing share of investors that seek this kind of "impact" information about these projects makes it necessary for issuers to define how and at what level of detail they plan to disclose information about the green projects or portfolio. As treasury staff in capital markets functions are normally not engaged or are not familiar with the technical details of projects, the coordination needed with line agencies and operational units overseeing or closer to the investments may make this step challenging. In addition, line agencies may not collect this information systematically, may only gather limited data about projects (e.g., goods and services purchased and direct production or construction results) and may not be familiar with estimating expected environmental and social outcomes of projects (e.g., how projects impact emissions, water and soil quality, livelihoods, etc.).

To accomplish this task, this Guide recommends using and building from existing reporting systems regardless of their stage of development. The bulk of the effort is required initially to assess the existing information systems and how to adapt to a green bond reporting report. In addition, defining how and who will develop or transfer information to the staff responsible for reporting is also a necessary initial task. The chances of sustaining a reporting function are higher if the requirements are commensurate to the existing capacity and systems in place. Each issuer will need to tailor the information flow to its own circumstances.

The Reporting Template shown in Figures 3A, 3B, and 4 offer a format to consider at two levels of detail: condensed and expanded. For simplicity, the Guide uses 12 hypothetical projects in the sectors typically supported by green bonds and it is assumed that issuers can access data at the project level. The indicators used in the templates are based on previously published sources (as of May 2018) such as the international financial institutions' Proposed Harmonized Framework for Impact Reporting on Renewable Energy and Energy Efficiency projects and other sources applicable to the sectors and type of projects. Each issuer should attempt to start producing a condensed report and assess whether it can aim higher based on the institution's capacity to report more detail along the lines of the suggested indicators in the template. If the effort needed to aim higher is deemed excessive due to time required to get the information or other institutional impediments, the Guide suggests working at the level that is feasible for the first impact report (after a year of green bond issuance) and seek to report more information over time. As mentioned earlier, investor feedback on the initial impact report is always a good way to gauge satisfaction with the degree of detail and clarity.

The annual reporting exercise should continue until the bond matures and until the green projects are completed, whichever is latest. The rationale for reporting until all projects are completed is that investors will want to be informed whether there was any significant deviation from the information provided in previous reports since the results were the expected results normally at the time of approval. Issuers may choose to indicate in the last report that all projects have been completed with results in line with previous reports.

REPORTING AT A CONDENSED LEVEL OF DETAIL: QUALITATIVE INFORMATION WITH FEW QUANTITATIVE INDICATORS

Figure 3A illustrates an annual impact report in a condensed format. The information reported is relatively simple, concise, and should be available to most issuers who have worked through a green bond framework. The date of preparation of this report is assumed to be some time in Q1 of 2019. The contents of the template by column are described below:

Column 1: Project name or designation of eligible expenditure.

Column 2: Amount of green bond financing approved. Below is the share of total financing accounted for by the green bond in case other financiers participate in funding the project. As illustration, project No. 6 and 10 in Table 1 assume other private sector financiers.

Column 3: Amount allocated or spent through December 31, 2018.

Column 4: Percent of allocation disbursed to date.

Column 5: Brief description of the project including information that helps appreciate the scale of the project and the main items being built or developed. This information is typically available from the agencies or sponsors building or contracting the work. The description could be expanded to a short paragraph to provide the reader with a sense of context, such as whether it is part of a larger program, the specific project goals, and its location. For example, energy efficiency projects could add whether there is a larger program within which the project fits, such as the country's long-term efficiency goals.

Photo © Dominic Sansoni / World Bank

Column 6: Progress to date in qualitative (when projects are at early stage) or quantitative terms.

Of note is that the portfolio includes two refinanced projects ("Waste Management" and "Water Efficiency") which account for 10% of the total green bond amount and whose look-back period is 1.5 years or less. This information should be included in the introductory text of the impact report.

The resulting report would provide investors a minimum level of information about the green portfolio being supported and their status a year after bond issuance.

FIGURE 3A • REPORTING IN CONDENSED FORMAT

Column #	1	2	3	4	5	6
	Name	Approved Amount in Thousands USD % Financed by Green Bond	Allocated to Date in Thousands USD	% Disbursed	Brief Description	Progress to Date
Eligible Sector: Energy						
1	Solar Farm	4,000 (100%)	3,300	83%	20 MW solar farm to replace diesel generators in industrial park	80% of solar panels installed
2	Wind Farm	5,000 (100%)	2,900	58%	30 MW wind farm to supply electricity to off-grid community	40% of equipment installed
3	Industrial Efficiency	5,000 (100%)	2,900	58%	Energy efficiency incentives for 50 industries	50% of projects implemented
4	Lighting Efficiency	3,000 (100%)	3,000	100%	Replacement of 15,000 streetlamps in city XYZ	100% of streetlamps replaced
Sector: Transportation						
5	Mass Transit	10,000 (100%)	6,000	60%	Construction of 3 segregated bus lanes and passenger stations	two lanes constructed; third lane 50% completed
6	Light Rail	15,000 (60%)	9,500	63%	Completion of last 30 kilometers of rails for light train	asphalt laid and rolling stock purchased
Sector: Land Use						
7	Sustainable Agriculture	3,000 (100%)	2,600	87%	Support soil and water retention in 35,000 hectares total farmland	80% of farm projects completed
8	Afforestation	4,000 (100%)	2,800	70%	Replant native tree and shrub species in 200,000 hectares	70% of land re-cultivated
Sector: Other						
9	Waste Management	2,000 (100%)	2,000	100%	Refinancing: Upgrade of 3 sanitary landfills with biogas capture and use	Project completed 1 year ago
10	Water Treatment	4,000 (80%)	4,000	100%	Refinancing: Upgrade facility to reduce losses and collect methane emissions.	Projects completed 1.5 years ago.
11	Coastal Protection	3,000 (100%)	2,200	73%	Protect shoreline against storm surges and sea level rise	About 75% of target coastal area replanted
12	Flood Disaster Prevention	2,000 (100%)	800	40%	Improvement drainage and reduce erosion in flood prone areas	Terracing and drainage works underway in 30% of land area
		60,000	42,000			

Note: The above projects are hypothetical. The figures are hypothetical and may not reflect correct orders of magnitude in the relevant sectors.

The above project-by-project detail may be challenging for some issuers to disclose either because of confidentiality reasons or because the available data is not as granular from the sponsoring agency. In these cases, aggregating projects by sector or category is accepted with the proper justification. In such case, the above portfolio could be reported as shown in Figure 3B.

FIGURE 3B • REPORTING IN CONDENSED FORMAT WITH SECTOR AGGREGATION

Column #	1	2	3	4	5	6
	Name	Approved Amount in Thousands USD % Financed by Green Bond	Allocated to Date in Thousands USD	% Disbursed	Brief Description	Progress to Date
Eligible Sector: Energy						
	Renewable Energy and Efficiency	17,000 (100%)	12,100	71%	20 MW solar and wind capacity built; efficiency investments in 50 industries; efficient streetlamps in city XYZ.	60% overall
Sector: Transportation						
	Public Transit Systems	25,000 (100%)	15,500	62%	Construction of segregated bus lanes, passenger stations, and light rail	40% overall
Sector: Land Use						
	Sustainable Agriculture and Afforestation	7,000 (100%)	5,400	77%	35,000 hectares total farmland improved and 200,000 hectares reforested	75% overall
Sector: Other						
	Waste and Water Management and Climate Adaptation	11,000 (100%)	9,000	82%	biogas capture and use; water efficiency; coastal protection; and flood prevention investments	Includes refinanced projects; rest 50% completed
		60,000	42,000			

Note: The above projects are hypothetical. The figures are hypothetical and may not reflect correct orders of magnitude in the relevant sectors.

REPORTING IN EXPANDED DETAIL: CHARACTERIZING IMPACT FOR AT LEAST PART OF THE PORTFOLIO

As shown in Figure 4, the next level of reporting adds additional information and detail about the nature and expected results of the 12 green projects chosen for illustration. The brief description includes the project goals and the number and/or type of beneficiaries.

The capacity or coverage of the investments help the investor appreciate their scale and size. The expected results are normally those estimated ex-ante at the time of project approval and are expressed in units relevant to the corresponding sectors. For example, projects in the renewable energy and energy efficiency areas will report the amount in units of electricity estimated to be produced or saved, respectively. Sustainable transport will typically report kilometers of mass transit systems built and an estimate of the increased volume of passengers served. There is an increasing number of sources at the sector and subsector level that are publishing indicators and other metrics, such as those reported in Section 4. It is also useful to consult reports published by other issuers, such as banks, utilities, local governments, etc.

When quantitative estimates of target results are not available, the template can report the nature and direction of expected results, such as reducing water and pesticide use in agriculture, reducing the vulnerability of an area to flood damage.

Whenever possible, project outputs should translate into expected environmental and social benefits or "impact." The methodologies needed to develop these estimates vary in degree of complexity and require data and assumptions about the baseline situation estimated for a reference year from which improvements are estimated once the project is in full operation. In particular, environmental benefits require estimates of how a project positively affects the level of environmental quality, either by reducing pollutant flows to air, water, soil or improves the climate vulnerability of an area (such as in the case of reforestation or coastal restoration). The regulatory agencies of each sector may provide guidelines of how baselines should be chosen and methodologies for computing the improvements of each type of technology or process.

For the particular case of mitigation projects addressing climate change, a key indicator is the estimated annual reduction of emissions of greenhouse gases (carbon dioxide, methane, sulfur oxides, etc.) with respect to a base year. This metric is often expressed as tons of CO_2 equivalent avoided per year. Estimates of emissions avoided for energy sector projects tend to be more readily available than the other sectors because governments have published standard approaches to computing emission reductions for power generation and certain efficiency investments. These are typically based on an "emission factor," which is the estimated amount of CO_2 produced by each unit of power in the entire country or region. This amount of CO_2 per unit of power is based on the proportion of fossil fuels used for electricity generation and other factors. Issuers should refer to the country's national climate change mitigation plans and guidelines for computing emission reductions for mitigation projects.

In the template, estimates of emission reductions in energy sector projects are based on world averages and are explained in endnotes to the template. Endnotes to results indicators for the other non-energy sector projects also provide the basis for quantification.

For social benefits, qualitative description of the communities or population being targeted is useful and when feasible, include as indicator number of people benefiting from the project. If possible, provide more detail about the kind of benefit expected (e.g., higher value for crops, less travel time, more women receiving services, reduced flood losses, new jobs created).

The figures provided in the template are hypothetical and are not intended to illustrate the correct proportions and scale of results for the amount of financing allotted to each hypothetical project. That is, the financing amount per project could render much higher or lower results. Rather, the intention is to illustrate the type of indicator and format of a more detailed impact report.

For additional information on the nature of impacts in the sectors covered, Section 4 provides a list of relevant references and websites that can be consulted to learn more about results indicators and methodologies. In particular, the Resource Centre of the Green Bond Principles (**https://www.icmagroup.org/green-social-and-sustainability-bonds/resource-centre**) and the Climate Bonds Initiative sector criteria (**https://www.climatebonds.net/standard/sector-criteria**) are excellent sources of additional information that are continually updated.

FIGURE 4 • FULL DETAILED REPORTING

Project #	Name	Eligible Amount	Allocated Amount to Date in Thousands USD	% Disbursed	Goals and Key Beneficiaries	Project Lifetime (years)	Capacity or Coverage	Units	Expected Production or Improvement from Baseline	Units	Emissions Reduced Tons of CO_2 equiv.	Progress to Date	Notes (below)
Sector: Energy													
1	Solar Farm	4,000	3,300	83%	Replace diesel in industrial park	20	20	MW	22,434	GWh	10,800,000	80%	1
2	Wind Farm	5,000	2,900	58%	Supply power to off-grid community of 15,000	20	30	MW	14,821	GWh	7,114,000	40%	2
3	Industrial Efficiency	5,000	2,900	58%	Provide loans for energy efficiency	15	50	Industries	5,000,000	MWh	1,517,000	50%	3
4	Lighting Efficiency	3,000	3,000	100%	Replace inefficient street lamps in city XYZ	15	15000	Streetlamps	21,000	MWh	10,080	100%	4
Sector: Transportation													
5	Mass Transit	10,000	6,000	60%	Exclusive bus lanes (3), stations, and traffic management	30	20	Kilometers	50,000	New riders (15% increase)	n/a	50%	5
6	Light Rail	15,000	9,500	63%	Completion of last 30 Kms of light train	30	30	Kilometers	200,000	New riders (10% increase)	n/a	20%	6
Sector: Land Use													
7	Sustainable Agriculture	3,000	2,600	87%	Soil and water retention works; materials to 20,000 farmers	20	35,000	Hectares	15%	Crop yield	n/a	80%	7
8	Afforestation	4,000	2,800	70%	Replant native trees and shrubs restoring soil; 2000 farmers	25	200,000	Hectares	n/a	n/a	n/a	70%	8
Sector: Other													
9	Waste Management	2,000	2,000	100% Refinanced	Upgrade landfills for biogas capture and use in near-by industry	15	3 landfills	Landfill Gas	4,000,000	m3/year	100,000	100% Completed 1 year ago	9

Project #	Name	Eligible Amount	Allocated Amount to Date in Thousands USD	% Disbursed	Goals and Key Beneficiaries	Project Lifetime (years)	Capacity or Coverage	Units	Expected Production or Improvement from Baseline	Units	Emissions Reduced Tons of CO_2 equiv.	Progress to Date	Notes (below)
10	Water Efficiency	4,000	4,000	100%	Upgrade water treatment to reduce losses and reuse biogas	15	1	Plant	4	m3/sec	2,000	100% Completed 1.5 years ago	1
11	Coastal Protection	3,000	2,200	73%	Replanting program to reduce damage from storms; 1,000 in community	20	800	Hectares	800	Hectares	n/a	75%	11
12	Flood Disaster Prevention	2,000	800	40%	Improve drainage and reduce erosion in flood prone areas inhabited by 20,000 people	20	5,000	Hectares	5,000	Hectares	n/a	30%	12
	TOTAL	**60,000**	**42,000**										

NOTES:

1. Assumes that 1 GW produces 1,122 GWh of electricity using the world average ratio of solar photovoltaic electricity capacity to production in 2015, i.e., 220.2 GW produced 247 TWh (IEA 2017). For emissions, estimate assumes an average world emission factor of 480 grams of CO_2 eq. per kWh electricity produced based on World Bank 2014.
2. Assumes that 1 GW produces 494 GWh using the world average ratio of wind electricity capacity and production in 2015, i.e., 414 GW produced 838 TWh (IEA 2017). For emissions, the estimate assumes an average world emission factor of 480 grams of CO_2 eq. per kWh of electricity produced (World Bank 2014).
3. Assumes an emissions factor for industry of 303 grams of CO_2 eq. per MWh, i.e., each MWh saved reduces 303 grams of CO_2.
4. Assumes replacement with LED lamps achieving 50% electricity savings in the order of magnitude reported in World Bank 2016. For emissions, the estimate assumes an average world emission factor of 480 grams of CO_2 eq. per kWh of electricity produced (World Bank 2014).
5. Reduction of CO_2 emissions by Bus Rapid Transport projects can be simulated. Refer to TEEMP models available from https://www.itdp.org/ and GEF 2011.
6. The simulation of emissions reductions in light rail and other transport projects is complex. For relevant literature, see GEF 2011 and 2015.
7. In addition to improving crop yield and increasing water use efficiency, sustainable agriculture projects may contribute to reducing GHG emissions. See references section.
8. Afforestation contributes to carbon sinks and reduces soil erosion. See references section.
9. Landfills assumed to be retrofitted to capture landfill gas for use in nearby industries. The figures are not based on real projects.
10. Wastewater treatment plant assumed to be retrofitted to avoid discharges to nearby waterway and to capture methane emissions.
11. Coastal protection is assumed to include replanting of mangroves, sea grasses and other species to restore nature's ability to mitigate the impact of severe weather events.
12. Structural risk prevention assumed to improve conditions in an area of 5,000 hectares.

FAQS

Q1. How frequently does an issuer need to report impact information?

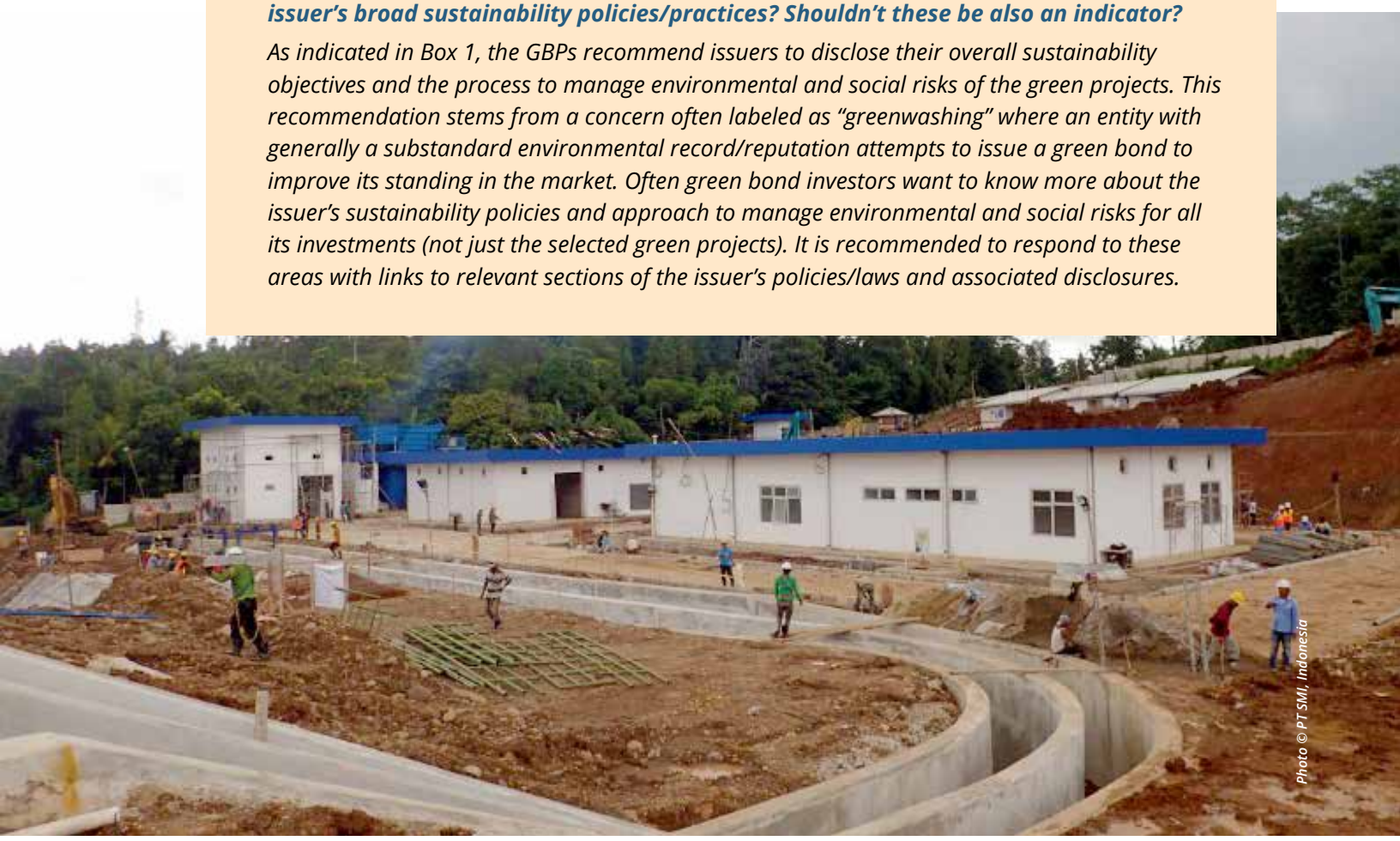
GBPs encourage reporting annually until all proceeds are fully allocated, "and as necessary thereafter in the event of material developments." Here the developments referred to could include situations where the results reported before no longer hold because of various reasons (e.g., projects financed were stopped or ran into difficulties, estimates of outcomes were adjusted, or other causes).

Q2. The issuer has granular information about green projects but would prefer not to disclose so much detail to protect the privacy/confidentiality of clients (such in the case of a bank with borrowing clients). Similarly, an issuer has a portfolio of many very small projects. Can the issuer aggregate information in its impact report?

Yes, when confidentiality or practicality prevents an issuer from reporting at individual project level, the issuer can aggregate the projects by categories according to its eligibility framework or other meaningful way to aggregate results. If this approach is chosen, the issuer is encouraged to provide more qualitative information about the portfolio as a whole, and where feasible supply quantitative results measures (e.g., in renewable energy describe the track record of financing in the country, the total capacity of all solar, wind, etc. projects, and if possible the estimated amount of electricity to be produced by these projects).

Q3. What about the Environmental and Social Risks associated with the projects and the issuer's broad sustainability policies/practices? Shouldn't these be also an indicator?

As indicated in Box 1, the GBPs recommend issuers to disclose their overall sustainability objectives and the process to manage environmental and social risks of the green projects. This recommendation stems from a concern often labeled as "greenwashing" where an entity with generally a substandard environmental record/reputation attempts to issue a green bond to improve its standing in the market. Often green bond investors want to know more about the issuer's sustainability policies and approach to manage environmental and social risks for all its investments (not just the selected green projects). It is recommended to respond to these areas with links to relevant sections of the issuer's policies/laws and associated disclosures.



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Part 3

NOTES TO IMPACT REPORTS

Whenever possible, impact reports should contain explanatory notes for qualitative and quantitative estimates of results that are derived or calculated using determined assumptions and methodologies. These estimates would normally be provided by the agencies in charge of implementing the projects and knowledgeable about technical aspects.

Providing the references and other sources of information (such as a national development report containing key performance indicators, sectoral performance evaluation reports, and the National Intended Contribution under the Paris Climate Accord and the associated emissions reduction targets by sector, etc.) can also be helpful to provide the context for the report. Whenever quantification of environmental results is provided, relevant sources and methodologies should be provided to validate a calculation approach.

The issuer is also advised to provide investors cautionary notes about known and unknown uncertainties about the information provided, including but not limited to, whether expected results are based on ex-ante estimates to be updated at project completion, whether results of projects in the same sector can be compared with one another, and other material aspects that help interpret the impact report.

The World Bank provides technical assistance to issuers—sovereign, sub-sovereign and state-owned enterprises—to help them develop green bond impact reports.

Part 4

REFERENCES

General

Green Bond Principles 2018. https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GreenBondsBrochure-JUNE2017.pdf

Greenhouse Gas Accounting. Framework agreed among International Financial Institutions:

http://www.worldbank.org/content/dam/Worldbank/document/IFI_Framework_for_Harmonized_Approach%20to_Greenhouse_Gas_Accounting.pdf

UK Pension Fund Service. http://treasury.worldbank.org/cmd/Sustainable-Investing-UK-Pension-Service-Green-Bonds-and-Beyond.pdf

World Bank Green Bonds. https://www.worldbank.org/en/about/unit/treasury/ibrd/ibrd-green-bonds

World Bank Green Bond Impact Report. http://treasury.worldbank.org/cmd/htm/WorldBankGreenBondImpactReports.html

World Bank Green Bond Toolkit. http://treasury.worldbank.org/cmd/htm/What-are-Green-Bonds-Home.html

Energy

Proposal for a Harmonized Framework for Impact Reporting on Renewable Energy/Energy Efficiency Projects. ICMA Resource Centre. https://www.icmagroup.org/green-social-and-sustainability-bonds/resource-centre/

International Energy Agency. 2017. Key World Energy Statistics. http://www.iea.org/publications/freepublications/publication/KeyWorld2017.pdf

International Energy Agency. Statistics. Final electricity consumption is defined as production net of imports and exports. www.iea.org/statistics/statisticssearch/report

World Bank 2014. "Understanding Emissions from the Global Energy Sector", Figure 6. May 2014. The calculation assumes a mid-point world emissions factor of 480 grams of CO_2 per kWh for electricity generation.

World Bank 2016. Proven Delivery Models for LED Public Lighting : ESCO Delivery Model in Central and Northwestern India. ESMAP Knowledge Serie; Makumbe, Pedzisayi; Weyl, Debbie K.; Eil, Andrew; Li, Jie.; No. 026/16. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/25347.

http://documents.worldbank.org/curated/en/893531467991051828/pdf/101531-WP-P143154-PUBLIC-Box394816B-Joint-IFI-EE-GHG-Accounting-Approach-clean-final-11-30.pdf

Transportation

ICMA 2018. Suggested Impact Reporting Metrics for Clean Transportation Projects. https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Clean-Transportation-Reporting-Metrics-4-June-2018.pdf

Kopp, Andreas. 2015. Reducing Greenhouse Gases : GHG Analysis in Transport. Transport and ICT connections, no. 8;. World Bank Group, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/22304

GEF 2011 and 2015. Manual for Calculating GHG Benefits from Global Environment Facility Transportation Projects. Revision Memo 2015: http://www.thegef.org/publications/manual-calculating-ghg-benefits-gef-transportation-projects

Agriculture and Land-Use

Guide to Climate Smart Agriculture. https://csa.guide/. Including tools for impact estimates at: https://csa.guide/csa/tools

Methodologies for estimating greenhouse gas reductions at landscape level. http://www.biocarbonfund-isfl.org/methodology

Waste Management

ICMA 2018. Green Bond Principles. Suggested Impact Reporting Metrics for Waste Management and Resource Efficiency Projects. https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Waste-Management-Reporting-Metrics-and-Templates-Final-230218.pdf

Markgraf, Claire; Kaza, Silpa. 2016. Financing Landfill Gas Projects in Developing Countries. Urban Development Series Knowledge Papers, no. 23;. World Bank, Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/26302

Water Management

ICMA 2017. Green Bond Principles. Suggested Impact Reporting Metrics for Sustainable Water and Wastewater Management Projects. June 2017. https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Water%20Wastewater%20Impact%20Reporting%20Final%208%20June%202017%20130617.pdf

World Bank 2016. High and Dry. Climate Change, Water and the Economy. https://openknowledge.worldbank.org/handle/10986/23665

Resilience/Adapting to Climate Change

World Bank 2015. Investing in Urban Resilience. https://openknowledge.worldbank.org/handle/10986/25219

World Bank Group; Global Facility for Disaster Reduction and Recovery. 2017. World Bank Resilience M&E: Good Practice Case Studies. World Bank, Washington, DC. https://openknowledge.worldbank.org/handle/10986/28387

About the World Bank

The World Bank comprises the **International Bank for Reconstruction and Development (IBRD) and the International Development Association** (IDA). The organization's mission is to end extreme poverty and boost shared prosperity in a sustainable way. With a unique global reach and a commitment to work with partners over the long-term, the World Bank provides financing, technical knowledge, and convening services to help its clients achieve their development priorities.

The World Bank is a vital source of financial and technical assistance to developing countries around the world and a pioneer in developing the green bond market. The World Bank issued the first labeled green bond in the world in 2008. Since then, it has issued almost USD 11 billion (USDeq.) through 140 green bonds in 19 currencies (as of July, 2018).

The Bank is leading efforts to support the integrity of the market as it expands. This includes supporting transparency and harmonized impact reporting as members of the executive committee of the Green Bonds Principles coordinated by the International Capital Market Association. These efforts build the foundation for developing sustainable capital markets.

The World Bank is supporting new green bond issuers. The Bank leverages its experience as a key issuer of green bonds to help issuers in developing countries issue green bonds and develop green bond markets. Its work in this area has resulted in:

- **The issuance of the first green sukuk (Islamic bond) in the world:** Tadau Energy, a solar energy company in Malaysia, issued the first green sukuk in the world on July 27, 2017, raising USD 59 million to finance a 50MW solar photovoltaic power plant.
- **The issuance of the first sovereign green bond by an emerging market:** With technical assistance from the World Bank and IFC, Fiji issued a USD 50 million sovereign green bond on October 17, 2017.
- **The first African sovereign green bond:** Nigeria issued a green bond with technical assistance from the World Bank on December 21, 2017.
- **The first corporate green bond in Indonesia:** PT Sarana Multi Infrastruktur (Persero) ("PT SMI"), an Indonesian state-owned enterprise, issued an IDR 3 trillion green program bond on July 9, 2018.

Technical Assistance for Green Bond Issuers

The multi-disciplinary World Bank team:

- Shares hands-on experience and international best practices
- Supports policy-makers and regulators on the development of green bond guidelines or regulations
- Helps consider policy incentives to support the development of local green bond markets
- Advises on targeted awareness raising and communications strategies on the relevant policies, regulatory framework, incentives
- Facilitates demonstration issuances by
  - Providing training on the green bond process
  - Developing a roadmap for the issuance
  - Developing a green bond framework
  - Helping to identify eligible green projects
  - Facilitating the delivery of second opinions/verifications/certification of the green bond framework by an independent third party reviewer
  - Advising on reporting commitment and communication strategy
  - Developing use of proceeds and impact report

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