Transparency & Reporting in the GSS Bond Market

Climate Bonds Initiative

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Prepared by Climate Bonds Initiative.

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Introduction

Reporting: an expectation

Post-issuance reporting is a fundamental expectation for sustainable finance instruments while impact reporting is currently only required for certain projects and recommended for others. While post-issuance reporting is not mandatory, it is required to meet the conditions of many frameworks and standards and most investors consider reporting to be critical, therefore if issuers fail to report there could be consequences.[1,2]

In the case of green, social, and sustainability (GSS) bonds, reporting provides transparency around the use of proceeds (UoP) or allocations, and the sustainability-related impact of the financing. Additional information is often provided, such as links with the issuer's entity-level activities.

GSS bond reporting frameworks and standards

Reporting is one of the four pillars of the International Capital Markets Association (ICMA) Green Bond Principles, Social Bond Principles, and Sustainability Bond Guidelines (GBP, SBP, and SBG, respectively), collectively known as the ICMA Principles, which almost all issuers adhere to.[3,4]

The ICMA Principles require post-issuance reporting of both allocations and impacts. ICMA's harmonised framework for impact reporting states, 'Reporting is a core component of the GBP, and green bond issuers are required to report on both the use of green bond proceeds, as well as their expected environmental impacts at least on an annual basis.'[5] The same guidelines can be found in ICMA's harmonised framework for impact reporting for social bonds.[6]

While Chinese GSS bond issuers faced local reporting requirements for several years, with rules for each issuer type set by different regulators, China's Green Bond Principles, which reflect ICMA Principles, have now harmonised the Chinese regulations for GSS bonds.[7,8] In the EU, the proposed and voluntary Green Bond Standard (EU GBS) sets requirements for bonds to align with the EU's sustainability objectives, a critical feature being the need for projects to align with the EU Taxonomy.[9] The EU GBS includes reporting requirements, such as annual allocation reports until full allocation of proceeds, after which issuers must publish an impact report and at least one impact report during the bond's lifetime. Additionally, under the EU GBS post-issuance external reviews are mandatory for allocation reports and voluntary for impact reports.

Post-issuance reporting is also a requirement under the Climate Bonds Standard (CBS) which underpins the Climate Bonds Certification Scheme.[10,11] Issuers of Certified Climate Bonds must report allocations annually until full allocation through post-issuance verification, while update reports are required until maturity.[12]

In short, under the CBS, impact reporting is only required for certain projects and recommended for others. Regular reporting and external review are required for all sectors that include pathways (i.e., emissions reduction trajectories) such as the buildings, shipping, and industrial sectors. More specifically, for UoP Certification impact reporting must include any metrics and thresholds necessary to align with the Climate Bonds Sector Criteria.

About this report

This report is part of Climate Bonds' post-issuance reporting research series, supported by the Inter-American Development Bank (IDB), International Finance Corporation (IFC), Singapore Exchange (SGX Group), The Global Methane Hub, and reviewed by S&P Global Ratings.

The report is a comprehensive study of post-issuance reporting in the GSS bond market aimed at enabling a healthy and transparent market. Its key objectives include:

- Assessing the share of post-issuance reporting in the GSS bond market given this is a core component of issuance and a pillar of ICMA Principles.
- Analysing the many different features of reporting to understand how much of the market is reporting in line with market guidance (e.g., ICMA), and by extension the effectiveness of available guidance.
- Providing examples of best practice across virtually all features of reporting to support issuers, investors, lenders, standard-setters, regulators, and other market participants.
- Overall, improving the quality and harmonisation of reporting practices, including by recommending approaches to reporting that can complement and potentially clarify existing frameworks/standards.

Analytical approach

Climate Bonds included analysis across GSS themes for the first time in this report. Previous studies on this topic predominantly covered green bonds, while one in March 2024 focused on sustainability-linked bonds (SLBs).[13,14,15]

The approach to reporting is very similar across GSS themes, with the same core components of allocation and impact reporting. The main difference lies in the projects financed and the use of impact indicators for impact reporting. The results of the analysis were therefore aggregated except in the analysis of impact indicators, which is segregated by project category. Overall, more attention was placed on differences between issuer types throughout the report.

The analysis mostly comprises aspects covered in ICMA's harmonised frameworks for impact reporting, as well as a few other relevant topics. While reporting occurs post-issuance, some aspects of pre-issuance disclosure were also analysed.

Sources of disclosure mainly include issuer websites and documents, complemented by several other sources including EMMA (US Munis), WIND (China), Green Bond Transparency Platform (GBTP, Latin America), and stock exchanges.[16,17,18,19] All results are shown in terms of number of issuers, with some also including amount issued.

Several charts and tables have been included to illustrate the findings but there are differences in the number of issuers, and total issuers versus individual issuers, displayed in charts and tables due to: 1. differences in the reported information between issuers and between bonds from the same issuers and, 2. overlaps between subsections whereby an issuer can fall into more than one category.

Issuer sample

GSS deals priced from 2020–2023 involving 75 entities were analysed, totalling USD1.4tn in amount issued. All the bonds assessed are aligned with Climate Bonds Green and Social & Sustainability Bond Database Methodologies (aligned) which can be found on Climate Bonds website.[20,21]

The sample represented 42% of the aligned GSS volume issued during the 2020–2023 period. Of the deals analysed, 48% of them were green bonds, 37% socials bonds and the remaining 15% sustainability bonds.[22] The selected issuers broadly encompassed the largest issuers from each issuer type and GSS theme from 2020–2023.[23] While a few adjustments were made to ensure issuer representation across regions, issuers from developed markets (DM) still dominated; 51 of the 75 entities were classified as issuers from DM and 24 issuers are from emerging markets (EM).[24] More substantial adjustments were made in the case of sovereigns and non-financial corporates to ensure representation a) across sovereigns from DM and EM, and b) across non-financial corporates from a variety of sectors (see appendix). The regional split of the issuers surveyed was Africa (6), Asia (14), Europe (31), LAC (5), North America (17), Oceania, in this case Australia, (2).

Of the issuers sampled three were by far the largest, each having issued over USD100bn: **EU** (USD167.8bn), **World Bank (IBRD)** (USD153.2bn), and **Caisse d'Amortissement de la Dette Sociale** (**CADES**) (USD130.6bn).

Contents

Issuer types sampled[26]

Issuer type	Number of issuers	Amount issued (USDbn)	DM	EM
Development Bank	15	402.8	10	5
Financial Corporate	14	140.7	7	4
Government-Backed Entity	12	499.3	7	4
Local Government	13	63.8	13	0
Non-Financial Corporate	12	76.5	9	3
Not-for-Profit	1	1.0	1	0
Sovereign	12	234.3	4	8
Total	**75**	**1,418.4**	**51**	**24**

Definitions/acronyms

GSS: Green, social and sustainability
GSS+: GSS and SLB bonds
S&S: Social and sustainability
CBS: Climate Bonds Standard
GBDB: Green Bond Database
SSBDB: Social and Sustainability Bond Database
Bond programme: collection of bonds from a given issuer (also referred to as bond portfolio)
DNSH: Do no significant harm
A&R: Adaptation and resilience
GHG: Greenhouse gas
Raw impact indicator: Original terminology, as reported by issuers
Final impact indicator: Impact indicator following consolidation/mapping of raw impact indicators; final impact indicators are aligned with ICMA harmonised frameworks where possible
SPO: Second-party opinion
DM: Developed market
EM: Emerging market
MDB: Multilateral development bank
ICMA harmonised frameworks: Harmonised frameworks for green and social bond impact reporting
GBP: ICMA Green Bond Principles
SBP: ICMA Social Bond Principles
ICMA Principles: GBP, SBP, SBG
SDG: Sustainable development goal
SBTi: Science Based Targets Initiative
SLB: Sustainability-linked bond
SLL: Sustainability-linked loan
UoP: Use of proceeds
SFDR: Sustainable Finance Disclosure Regulation (EU)
CSRD: Corporate Sustainability Reporting Directive (EU)
ESRS: European Sustainability Reporting Standards (EU)
SDR: Sustainability Disclosure Requirements (UK)
ISSB: International Sustainability Standards Board
GRI: Global Reporting Initiative
GBTP: Green Bond Transparency Platform (developed by the IDB)

About the Climate Bonds Initiative

Climate Bonds is an international organisation working to mobilise global capital for climate action. It promotes investment in projects and assets needed for a rapid transition to a low-carbon, climate-resilient, and fair economy. The mission focus is to help drive down the cost of capital for large-scale climate and infrastructure projects and to support governments seeking increased capital markets investment to meet climate and greenhouse gas (GHG) emission reduction goals. Climate Bonds conducts market analysis and policy research; undertakes market development activities; advises governments and regulators; and administers a global Standard and Certification scheme. Green finance instruments are screened to determine alignment versus the Climate Bonds Taxonomy, and the information is shared with partners. Climate Bonds has also expanded its analysis to other thematic areas, such as social and sustainability (S&S) bonds via the development of screening methodologies for investments that give rise to positive social impacts and added resilience. Certification against the Climate Bonds Standard (CBS) represents about 10% of global green bond market volumes. The scheme is underpinned by rigorous scientific sector-specific Criteria to ensure that Certified bonds and issuers are consistent with the well-below 2°C target of the Paris Agreement. Obtaining and maintaining Certification requires initial and ongoing third-party verification to ensure the assets meet Sector Criteria metrics.

Climate Bonds Certification Scheme

Certification under the Climate Bonds Standard V4.2 (CBS v4.2) goes beyond use of proceeds (UoP) instruments to include non-financial corporate entities and SLBs.25 Launched in April 2023, CBS v4.2 leverages Climate Bonds transparent science-based Criteria for non-financial corporate entities, credible SLBs and similar instruments, and provides assurance for investors that sustainability requirements have been met in respect of any Certified issuance. This work goes beyond sectoral transition pathways and includes key governance elements that indicate a company's preparedness to transition to net zero. Certification can be obtained by corporates with emissions already near zero as well as those with activities in high-emitting sectors, providing the corporate has suitably ambitious performance targets and credible transition plans. CBS v4.2 enables corporates aligned with 1.5°C pathways, or those that will be aligned by 2030, to obtain Certification. SLBs issued by and in respect of the activities of qualifying non-financial corporates can also be Certified under the CBS v4.2.

Report findings

The results of the analysis pointed to GSS bond reporting being widespread and generally of good quality but needing improvements in some key areas. The implementation of relatively small changes could deliver substantial enhancements to the clarity and quality of post-issuance disclosures, enabling a more transparent market. The creation and use of tools to facilitate this process is essential.

Recommendations for high-quality and standardised reporting are included in the final section; Climate Bonds proposes that reporting should incorporate the following four elements as a minimum:

1. Scope – report allocations and impacts.

2. Bond identification – clearly state the scope of reports in terms of instruments and period covered, percentage of proceeds allocated and relevant impact.

3. Accessibility – make disclosure easy to find, publish clearly identified, dedicated GSS bond reports.

4. Frequency and timing – report annually, consistency, and clarity is key.

Key findings: generally positive but several areas of improvement remain

Reporting was widespread: 88% of 2020–2022 issuers reported allocations with 83% reporting allocations and impacts. The shares were higher by amount issued (97% and 85%, respectively) and were similar to the findings in the last study by Climate Bonds on this topic in 2021.[27]

- **Timing:** while the analysis conducted for this report found that a lack of reporting was rare, many issuers (35%) did not report within 365 days of issuance for at least one of their deals. This approximates to 70% of 2023 issuers and 82% of the amount issued reported, almost all of which covered both allocations and impacts.
- **Meeting commitments:** most of the sample reported in line with pre-issuance commitments, but about 30% of reporting issuers failed to meet at least one component to which they had committed (e.g., not reporting within one year of issuance, not obtaining an external review, or not providing refinancing shares).

The quality of reporting varies widely but is generally high and has improved since Climate Bonds 2021 study:[28,29]

- Sovereigns were the leading group overall, with local governments also demonstrating several examples of best practice.
- Of the issuers assessed, 76% provided the core components of allocation and impact data along with some information on entity-level linkages in post-issuance reports.
- The clarity, granularity, and accessibility of disclosure, which are three key aspects of high-quality reporting, had all improved.
- More issuers were disclosing the use of taxonomies to determine project eligibility, although this still represented a minority (33%).
- Impact reporting was clearer and increasingly standardised, but much work remains to be done to ensure methodologies are fully disclosed and the data can be reliably compared across issuers.
- Entity-level linkages were more frequently disclosed (including pre-issuance) but often lacked detail and few issuers provided quantitative links between the instrument- and entity-level dimensions.

There are still opportunities to strengthen reporting in multiple areas:

- Use of ICMA harmonised frameworks or alternative guidance.
- Dedicated sustainable finance webpages with documents clearly listed on entity web sites.
- Project-level disclosure so that a greater number of issuers can identify individual projects.
- Disclosure of project lifetimes/stages for contextualisation and lifetime impact assessment.
- Reference to taxonomies, including to determine project eligibility.
- Detailed disclosure of linkages between GSS bonds and entity-level strategies, including through quantitative links between instrument-level data and entity-level targets.
- Disclosure of cumulative/historical data, especially relating to allocations.
- Clarity on the description of impact indicators and impact assessment methodologies, including the baselines selected for several important impact indicators such as GHG emissions avoided.
- Use of external reviews.

The quality and harmonisation of reporting practices requires improvement, which could be achieved by:

- Increased application of guidance and the introduction of regulation.
- An official reporting platform to facilitate reporting and data access.[30]

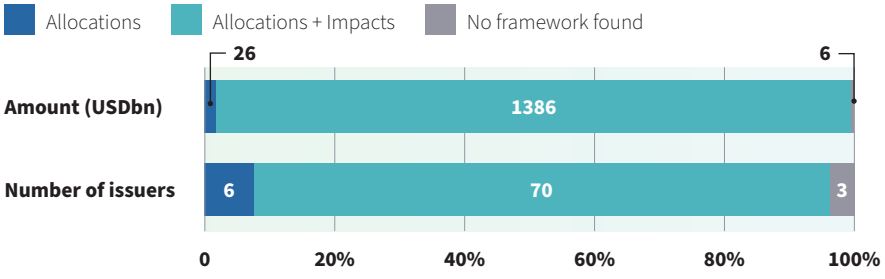
Pre-issuance: all frameworks included post-issuance reporting commitments

In line with the components of the ICMA Principles, GSS bond frameworks available pre-issuance should provide information on the issuer's intention and approach to post-issuance reporting. If projects are already known pre-issuance, allocations and even impact data may be disclosed at this stage. While the provision of this is rare pre-issuance, post-issuance disclosure should still confirm the data remains valid or provide updates.

All frameworks sampled included information on whether allocation and impact data would be reported post-issuance, most of which detailed specific data points and whether these would be provided at project level.

Representing 98% of the amount issued, 70 of the 75 issuers committed to report both allocations and impacts.[31] The higher share by amount issued reflected the fact that larger issuers were more likely to fall into this group. While six issuers committed to allocations only, publicly available frameworks were not found for three of them. No issuer committed to impacts only.

Almost all issuers committed to both allocation and impact reporting



Source: Climate Bonds Initiative

Committing to report until full allocation was most common

Just over half of the issuers sampled committed to report until the proceeds were fully allocated.

Of those committed to reporting, the second most common result was reporting until maturity, which is often later than full allocation. Development banks were the issuer type most likely to commit to this timeline. Ford Foundation was an outlier, being the only issuer sampled to commit to one-off reporting upon full allocation. A third of the 75 issuers did not disclose this information in their frameworks.

These results represented baseline expectations. About two-thirds of the issuers with timeline disclosure additionally claimed they would report beyond these deadlines in case of relevant material developments (e.g., material changes to allocations or impact data), although this is rare in practice. Both ICMA's harmonised frameworks and the Climate Bonds Standard require reporting until full allocation and later in case of any material developments.

Disclosing the frequency of reporting was more common, almost 90% of issuers used public frameworks which committed to annual reporting. About 30% added that they would report within one year of issuance, of which a few failed to disclose details regarding the point until which they committed to report (i.e., 'Not disclosed' in the table above).

Post-issuance: issuers generally reported in line with commitments

Reporting was widespread

Of the 66 issuers of 2020–2022 bonds that reported both allocations and impacts, ten were found to lack reporting, and four reported only allocations. This resulted in a reporting share of 87.5%, which was an estimate as some issuers had a mix of reporting and non-reporting bonds.[32] Of the ten issuers in the non-reporting group, only six did not report for any bond; two of which claimed to report privately to investors.[33,34]

The share of reporting was higher by amount issued (97%) as larger issuers were more likely to report. The difference in share was particularly large for the four issuers reporting allocations only, since the social bonds issued by the **EU** fell into this group.

While reporting was lower among bonds issued in 2023, it still represented a healthy majority. About 70% of 2023 issuers and 82% of the amount issued had reported, almost all of which reported on both allocations and impacts.

One-third failed to disclose the point at which they will cease reporting.

Reporting will cease	Number of issuers	Amount issued (USDbn)
Full allocation	39	574.6
Upon full allocation	1	1.0
Maturity	12	136.2
Not disclosed	25	700.2
No framework found	3	6.5
Total	**75**	**1,418.4**

Some aspects to take into consideration

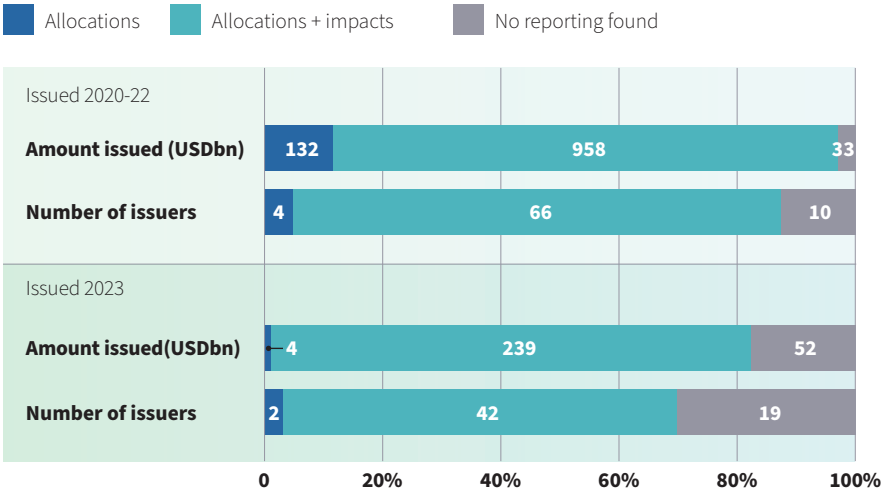
Assessing the share of post-issuance reporting is not as trivial as it sounds.

Firstly, repeat issuers may not have reported for all of their bonds yet the results are primarily shown by number of issuers, which means the shares by issuer count are an approximation.

Furthermore, assessing the share of reporting is an exercise conducted at a point in time, which if conducted later, would capture more bonds and issuers. Since the assessment was largely conducted in Q2 2024 and issuers are generally expected to report one year from issuance, many bonds issued in 2023 would not be expected to have reported within this period. Results for 2023 bonds should therefore be viewed differently from the results of 2020–2022 bonds.

While Climate Bonds checked multiple sources extensively, it is also possible that existing post-issuance reporting was not found, which would indicate a transparency problem. Furthermore, some issuers report privately to investors or put their disclosure behind a paywall, which for the purpose of this report equate to no reporting. In some cases, it is unclear whether reporting is private or public since there is nothing to indicate one or the other in frameworks nor on the issuer's website.

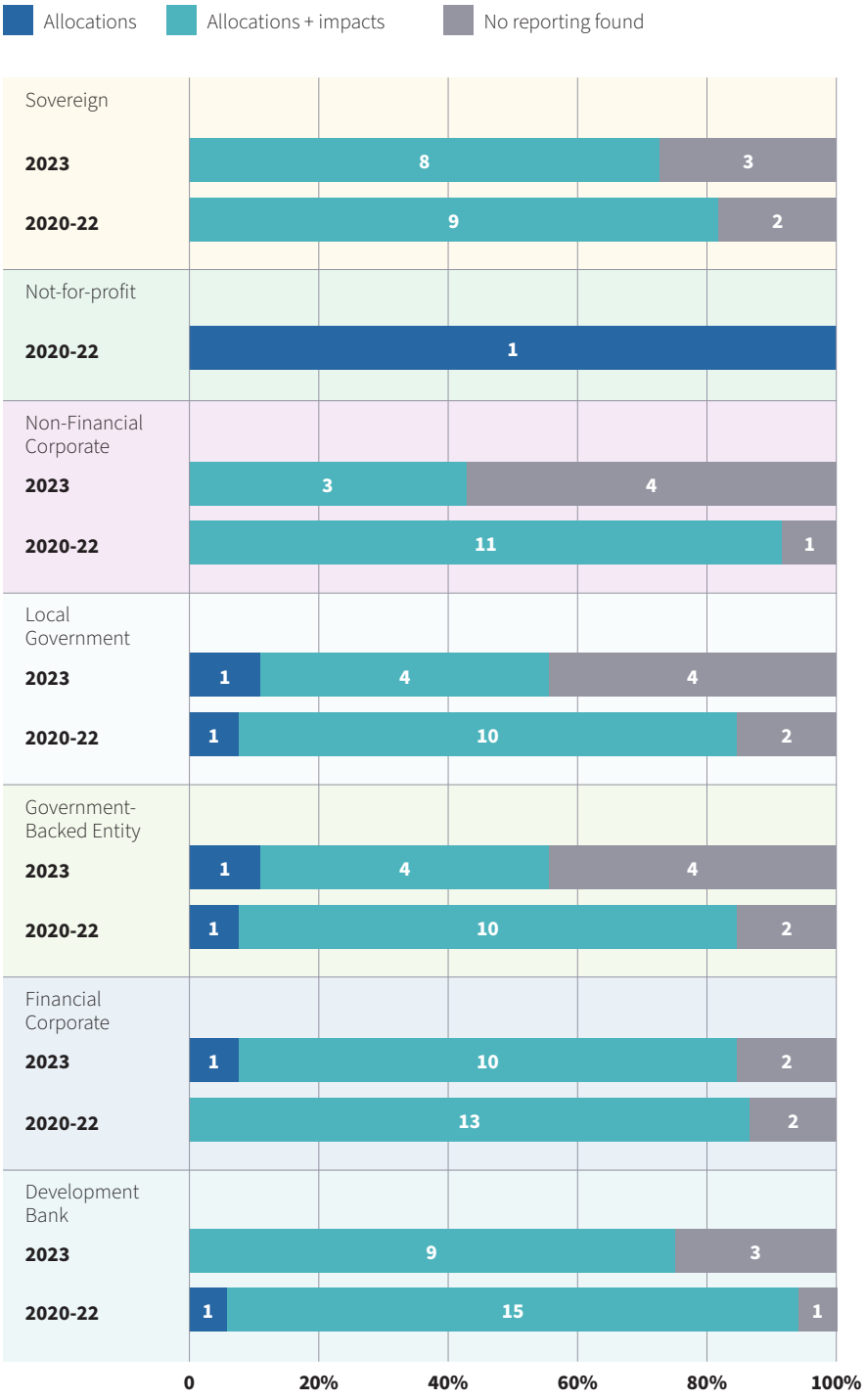
The majority of issuers reported allocations and impacts



Source: Climate Bonds Initiative

Limited differences existed between issuer types, but development banks and financial corporates were the most likely to report. Bonds issued by development banks in 2020–2022 displayed the highest reporting share (94%), while non-financial corporates issuing in 2023 had the lowest share (43%).[35] Across all issuer types, 2023 bonds had a lower reporting share versus those issued in 2020–2022.

Development banks and financial corporates were most likely to report



Figures refer to number of issuers with bonds issued in each period.

Source: Climate Bonds Initiative

The subsequent analysis refers to various features of post-issuance reporting. Non-reporting bonds were therefore excluded, yielding a universe of 69 issuers totalling USD1.3tn (compared to 75 issuers and USD1.4tn overall).

Frequency: typically annual, however that did not always equate to within 365 days

The ICMA Principles require post-issuance reporting at least on an annual basis, which almost all issuers adhered to.

Annual reporting was employed by 90% of reporting issuers. Quarterly reporting was rarer than in Climate Bonds previous rounds of research conducted for the 2021 post-issuance report, which was only used by two issuers sampled (**EBRD** and **ICBC**). It is most common in China.

Almost all issuers report allocations and impacts with the same frequency with three exceptions. One Chinese issuer reported allocations quarterly and impacts annually. Two issuers, including the **UK Government**, reported allocations annually and impacts biennially.[36]

The two issuers that made one-off reports did so upon full allocation. In three cases, the frequency of reports was not apparent given the issuers did not disclose publication dates in the reports or information on their websites to clarify this.

35% do not report within 365 days of issuance

While ICMA guidance is not explicit, the expectation of annual reporting implies the first report should be published within a year post-issuance. This was often not the case, with 35% of issuers failing to report within the first 365 days of at least one of their bonds. However, all issuers reported within one calendar year of issuance, e.g., a bond issued in March 2022 with a report published in September 2023.

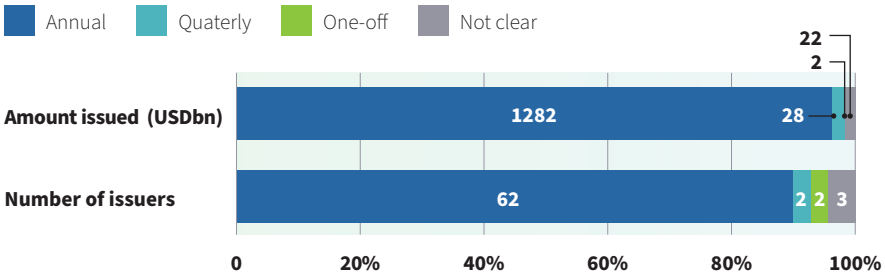
For repeat issuers, which generally report at programme (or bond portfolio) level, it may be practicable to report in line with annual reporting cycles, especially when proceeds take several months or more to allocate. In such cases, for transparency it is best to confirm within a year of issuance when a report for a given bond can be expected.

Of the issuers sampled, 91% had their latest report published in 2023 or 2024. Of the six that published their latest report in 2021 or 2022, all had fully allocated funds although one had originally committed to report until bond maturity.

Accessibility: most reports were easy to find

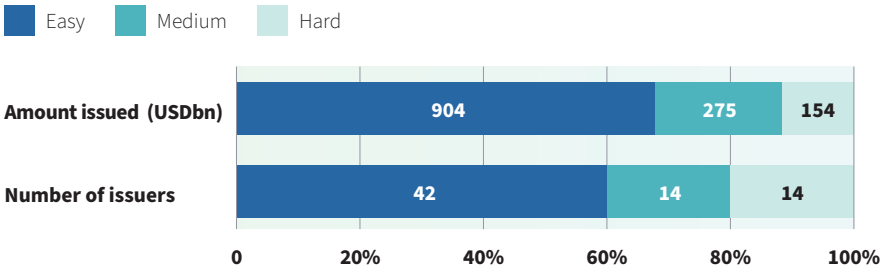
Climate Bonds conducted a qualitative assessment of the ease of finding post-issuance reports within a given website/source: up to two minutes or three clicks was considered easy, two to five minutes or three to six clicks was considered medium, and more than five minutes or six clicks was considered hard. If reports cannot be found directly on the issuer's website and only found via a Google search, they were automatically considered hard to find.

Annual reporting was the norm



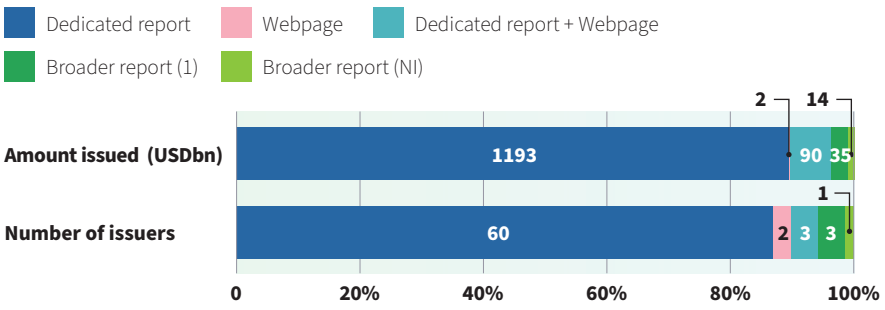
Source: Climate Bonds Initiative

Ease of locating reports



Source: Climate Bonds Initiative

91% of issuers published dedicated GSS reports



NB: Broader report (I) refers to clearly identified/dedicated sections within broader entity-level reports (e.g., annual or sustainability reports); Broader report (NI) refers to providing disclosure within broader reports but not through clearly identified/dedicated sections.

Source: Climate Bonds Initiative

The results were generally good, with 60% of reporting issuers having easy-to-find reports, typically in the investor relations section of their website. The share was higher by amount issued (68%).

While this was an improvement versus Climate Bonds' 2021 study, issuers could have improved accessibility by housing all documentation relevant to sustainable finance on a dedicated and clearly labelled webpage, ordered by subject and/or chronologically with historical documents (e.g., reports from previous years or older versions of frameworks). Such practices would benefit public sector issuers, especially governments (including US Munis), the most.

Report format: dedicated reports were increasingly common

Existing guidance and rules do not specify the format of reporting documentation, i.e., issuers are free to choose how to disclose the information.

Dedicated documents for GSS bond reporting were by far the most common, as observed in previous studies conducted by Climate Bonds, this however appeared to have become even more accentuated. Logically, fewer issuers provided GSS bond disclosure in broader reports (e.g., annual, sustainability, or CSR reports).

Direct reporting via a webpage was chosen by only two issuers, with a further three having used both separate dedicated reports and webpages. The latter only referred to cases where distinct information was provided under each format, e.g., the **African Development Bank** provided allocations by project category and project-level impacts in a dedicated report, plus project-level allocations on a webpage.

Separate reports typically included allocations and impacts in dedicated reports; by way of example the **Federal Republic of Germany** and the **African Development Bank** both reported allocations and impacts in two different reports.

For repeat issuers, separate allocation and impact reports generally covered all relevant bonds (typically those outstanding and/or not fully allocated), this included multiple GSS themes where applicable. Only **CaixaBank** had separate reports for green and social bonds.

Constructively, 15–20% of issuers provided Excel files with data (typically allocations and impacts), which is useful for many data users and represents a substantial increase versus the 5–10% observed in previous studies.

Language: non-English disclosure was rare

Reporting in English is considered best practice.

Representing 96% of the amount issued, 93% of issuers reported in English, two of which also provided a local language version. Reports that were only available in a local language were most likely to come from China. The other cases observed in the sample were Korean and Spanish (although the latter included a post-issuance second party opinion (SPO) in English).

Assurance was the most common post-issuance external review

External reviews obtained post-issuance are a recommended way of adding reliability and robustness to GSS bond reporting and the overall issuance process.

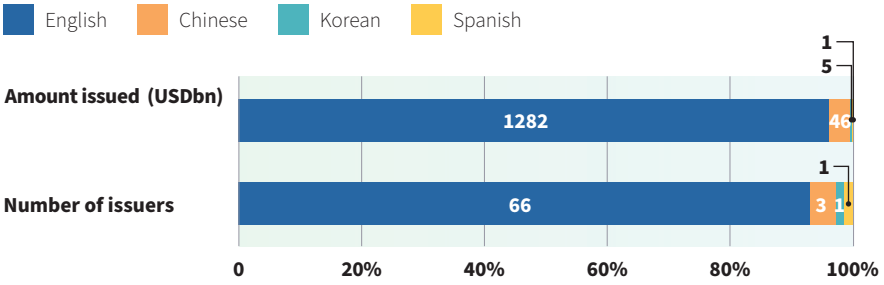
Almost two-thirds (63%) of issuers obtained some form of post-issuance external review, with assurance being the most relied upon (unlike pre-issuance, where SPOs dominate heavily). Assurance provides increased confidence that the data reported by issuers is accurate, although 76% of assurances were limited assurance rather than reasonable assurance.

Post-issuance SPOs are typically used to confirm the issuer has reported in line with the commitments set out in its framework, and by extension ICMA Principles, 13 issuers obtained a post-issuance SPO.

In two cases, multiple reviews were obtained: one combining an SPO with a reasonable assurance, another combining Climate Bonds Certification (which requires post-issuance verification) with an assurance of unknown level (only provided to bondholders).

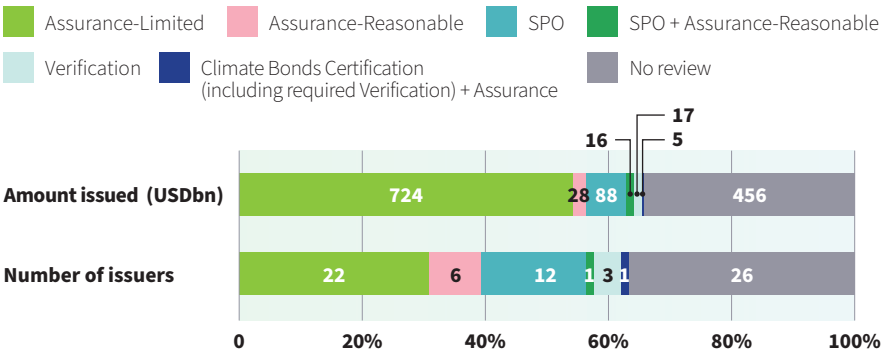
Of the 69 reporting issuers, 26 had bonds without a post-issuance review. In their frameworks, about 15% of the 26 claimed they would (or would aim to) obtain a review, but none explained why they did not obtain one, which is a clear example of misalignment with market practices and standards. In addition, social bonds were less likely to provide external reviews than sustainability and particularly green bonds.

English remained the most dominant reporting language



Source: Climate Bonds Initiative

Post-issuance review by type



Source: Climate Bonds Initiative

Five of 29 assurances covered both allocations and impacts

	Number of issuers	Amount issued (USDbn)
Allocations	22	608.8
Impacts	1	1.8
Both	5	110.6
Not disclosed	1	5.4
Total assurance	**29**	**726.6**

In three cases, reviews provided in 2023 referred to 2022 data, i.e., the review lagged reporting by one year.

A mix of reviews was used across all issuer types. Sovereigns were the only group to obtain some form of review for all reporting bonds, while local governments and non-financial corporates were the next most likely to engage an external reviewer.

Most post-issuance assurances only covered allocations

Assurance usually only covered allocations, i.e., assurance that the proceeds were allocated as reported by the issuer. For five out of 29 issuers, the assurance also covered impacts, a further one only covered impacts. The proportion which covered impacts (21%) was slightly higher than in Climate Bonds 2021 study (15%).

One assurance statement did not specify which information reported by the issuer was assured.

On average, 91% of proceeds were allocated, with most being fully allocated by the first report.

The average share of proceeds allocated was similar to the last report at 91%, this was only slightly lower for more recent deals (86% for 2022-2023 bonds), with about 70% of reporting issuers having fully allocated proceeds by their first report.

Of the 69 issuers reporting, 58 had at least one bond with 100% of proceeds allocated, including all bonds issued in 2020. However, about 15% also had at least one bond with less than 100% allocated.

Three issuers did not provide enough information to determine the share of proceeds allocated (e.g., only the share to each category is disclosed without the amount, and there is no statement that 'X% of proceeds have been allocated'). In many other cases, issuers did not clearly state the share allocated overall, requiring a manual exercise of adding amounts across categories or worse, individual projects. This aspect of disclosure can be easily improved.

Public sector issuers were better at disclosing cumulative allocations

Almost all reports referred to a specific (typically annual) period. To avoid having to check multiple documents, it is helpful when issuers provide cumulative or historical data, although current market guidance does not mention this.[37]

Curiously, public sector issuers (comprising sovereigns, local governments, government-backed entities, and development banks) disclosed historical allocations considerably more often than corporates. About 75% of public sector issuers did so, including eight out of the nine reporting sovereigns. This contrasted with about 40% of non-financial corporates and financial corporates.

The quality of historical disclosure in each report also tended to be better among public sector issuers, with many having provided detailed information about allocations in previous years, including visually (e.g., timeline). Examples included the **Province of Ontario**, **IFC**, **UK Government**, and **Unédic**. The reliance on taxpayer funds and frequent need to engage multiple state departments might suggest more pressure to provide this level and clarity of data.

Many issuers did not disclose cumulative/historical allocations. The results in the table suggest most disclosed this, but several of these cases refer to bonds fully allocated within the first report and/or bonds which have only had one post-issuance report (i.e., where cumulative allocations are not needed). In practice, an estimated 60-70% of issuers failed to provide this when relevant.

Refinancing disclosure can be improved

Proceeds from GSS bonds can be used to finance both new projects/assets as well as refinance previous expenses. While not a requirement, it is best practice to disclose the share of each.

The market was split on this aspect of disclosure, with almost 50% having provided the share of refinancing and a similar share failing to. A further six issuers confirmed they had refinanced but did not clarify what share of the proceeds or allocations.

The individual issuer count added up to 95 despite the actual total being 69, meaning that a high number of issuers disclose refinancing for some bonds but not others. A quarter of the issuers that did not disclose refinancing shares confirmed they would in pre-issuance frameworks.

Among issuers that disclosed the share of refinancing, only about one-third did so for each project or project category, 10% provided it for some but not all projects, and the remainder only disclosed an overall figure. In addition, 14% disclosed refinancing at bond level (within those that reported allocations at programme level).

Historical allocations often not disclosed

Are cumulative allocations disclosed?	Number of issuers	Amount issued (USDbn)
Yes	41	1,002.0
No	26	311.7
Not clear	3	19.8
Total	**69**	**1,333.4**

Some issuers confirmed refinancing but did not provide share

Refinancing share	Number of issuers	Amount issued (USDbn)
Disclosed	44	343.9
Partial but unknown %	6	43.6
Not disclosed	45	945.9
Total	**69**	**1,333.4**

Overall, more issuers should state the share of refinancing and do so clearly, e.g., 'X% of proceeds/allocations have been used for refinancing'. Ideally, refinancing shares would also be provided at project or at least project category level.

In terms of lookback period for refinancing of expenses, about 30% of reporting issuers disclosed this in their post-issuance reports. Among those that did, the lookback period was usually two years but none had lookback periods beyond three years.

Average refinancing estimated at 39%; weighted at 72%

The average refinancing share among issuers that disclosed this was 39%: however, the average weighted by amount issued was 72% due to the effect of a few large issuers.[38] French issuer **CADES**, the third largest issuer sampled and the largest overall in the social bond market, refinances 100% of its eligible expenses. The EU stated a 67% refinancing share for its green bond programme (not disclosed for its social bonds).

Sovereigns were the issuer type most likely to disclose the share of refinancing (67%), followed by non-financial corporates (50%).

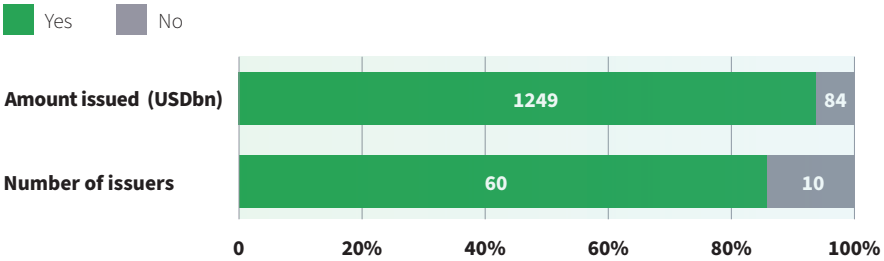
When disclosed, the share of refinancing was quite low among sovereign bonds, the top share being 50% (**Dutch State Treasury Agency**). This compared with 72% for development banks (**Inter-American Development Bank Group**) and 100% for local governments (**North Rhine-Westphalia** and **San Francisco Public Utilities**), government-backed entities (**CADES**), non-financial corporates (**Iberdrola** and **Fujifilm**), and financial corporates (**Crédit Agricole Group** and **Helaba**).[39]

Bond identification: inclusion by issuers was seen to be improving

Bonds included within a given report were identified by 86% of issuers and 94% of the amount issued which is a vast improvement on Climate Bonds 2021 study where almost one-third of issuers failed to do so.

Identification can vary from providing a bond identifier (e.g., ISIN) to including the bond identifier along with the amount, issue and maturity date, and occasionally other details such as index inclusion and pricing information. Where enough information was provided to identify a particular bond, the result was considered a 'Yes'.

14% of issuers failed to identify relevant bonds



Source: Climate Bonds Initiative

Programme-level reporting was preferred among repeat issuers

All repeat issuers assessed and 90% of those sampled included multiple bonds within their report, i.e., none produce separate reports for each bond.[40] However, some disaggregated allocations and/or impacts for each bond. Climate Bonds assessed whether data was reported individually for each bond or collectively for the bond programme/portfolio (i.e., bond- versus programme-level reporting). Of those surveyed Chile stood out as one of the best reporting issuers from EM, providing annual reports across GSS themes with very clear descriptions of historical issuance/allocations, refinancing/financing split, plus amount to be allocated by eligible sector and projects (which was rare within the issuers surveyed).[41]

It is worth noting that 'bond level' reporting may simply be the result of only one bond being issued or only one remaining outstanding/being covered by the reporting. This was the case in about 20% of bond-level results.

Almost two-thirds of issuers reported allocations at programme level. Understandably, development banks and financial corporates were the most likely to do so as they are also the most likely to issue multiple (usually many) bonds.

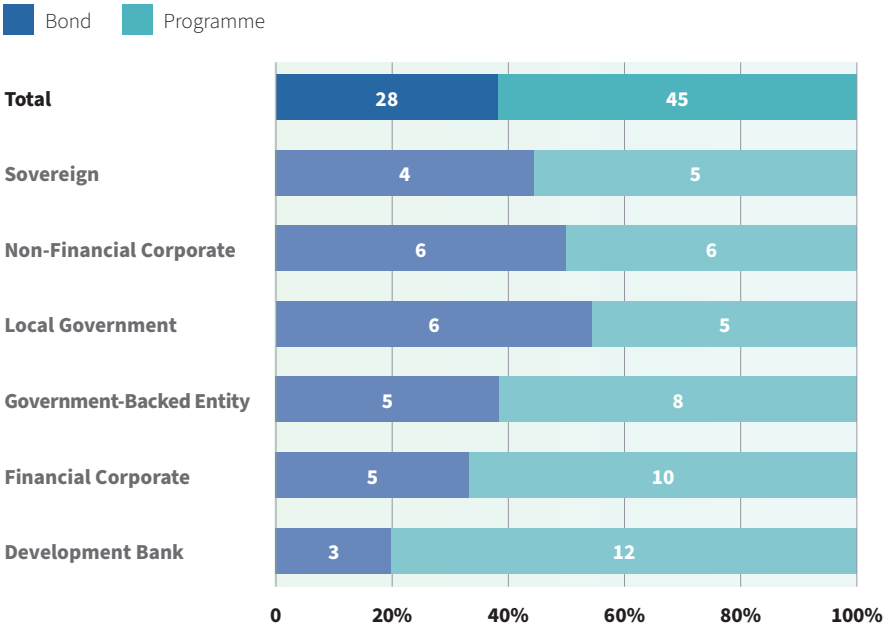
Two issuers reported category-level allocations for each bond but only disclosed project-level allocations at programme level. One issuer identified which bond(s) financed each project but did not provide corresponding allocations, so was considered to report allocations at programme level.

Crédit Agricole Group reported at programme level but disaggregated data by subsidiary, i.e., the data referred to the programme for each subsidiary.

Broadly similar results were observed for impact data, but biased towards programme level, i.e., it was more likely for impacts to be reported at programme level than allocations. This suggested some issuers track impacts at programme level but allocations at bond level; by contrast, it was very unlikely that impacts were tracked at bond level if allocations were not. There may also have been issuers that chose to report impacts at programme level for simplicity, despite having bond-level impact data.

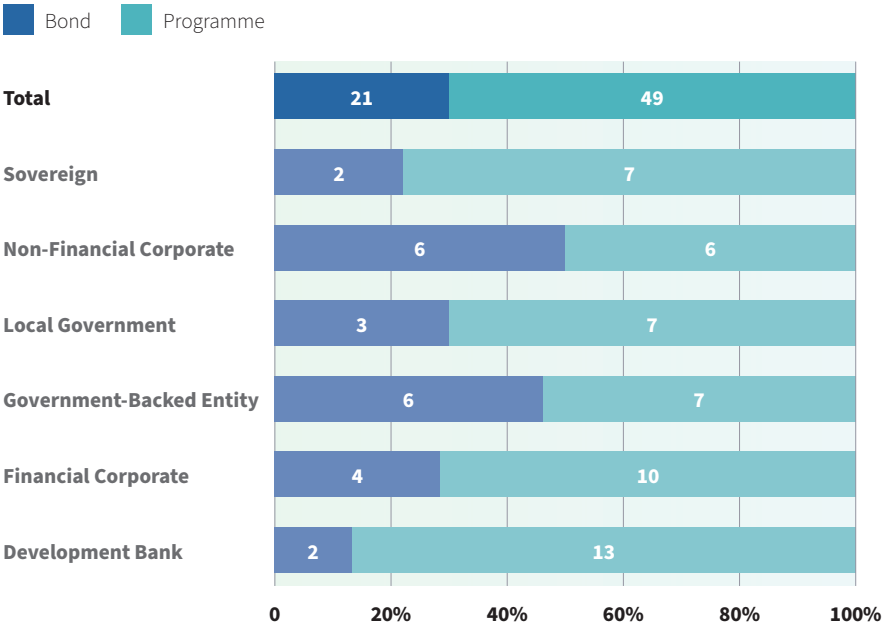
The largest difference was for local governments, with six having reported allocations at bond level but only three having done so for impacts. Government-backed entities was the only issuer type where no difference was observed.

Allocations were mostly reported at programme level



Source: Climate Bonds Initiative

Impacts were even more likely to be reported at programme level



NB: Excludes four issuers with no impact reporting.

Source: Climate Bonds Initiative

Project disclosure

Climate Bonds assessed the level of project disclosure, a crucial component of GSS bond disclosure, at the pre- and post-issuance stages. The assessment was based on the level of the most granular information provided (e.g., if both categories and project are disclosed, this was recorded as 'Project').

Pre-issuance: only 8% of issuers identified all projects

In pre-issuance documentation, the most common level of project disclosure was sub-category (80% of issuers). This referred to listing sub-categories of projects (e.g., solar energy, wind energy, rail transport, EVs, wastewater management, etc.) and/or providing qualitative descriptions or eligibility criteria (e.g., buildings meeting LEED Silver or the top 15% of energy performance in a particular country).

In many cases, issuers expanded and specified sub-categories with even greater granularity without referencing the specific project (e.g., EV charging stations in a region of the country).

Individual project case studies were sometimes also provided and about 15% of issuers with category/sub-category disclosure did this. However, identifying all individual projects ('Project' in the chart) pre-issuance was rare, since they were often not known.

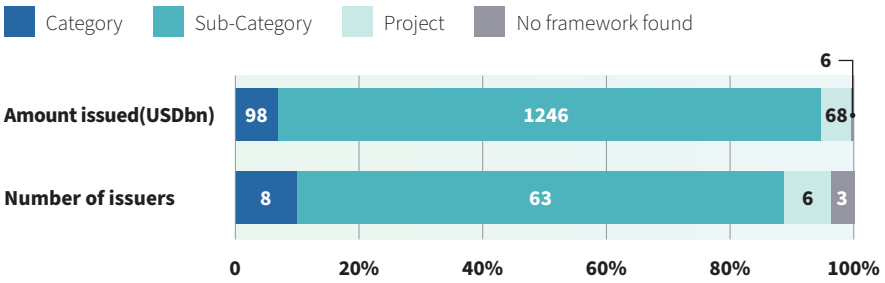
For those familiar with GSS bond frameworks, tables listing project categories and sub-categories are a common sight, and often also include SDG contributions. Defining project eligibility in terms of relevant taxonomies was still relatively rare but is becoming more common especially in the EU (see page 13).

Post-issuance: project disclosure was usually more granular

Project disclosure was more granular post-issuance, with 61% of issuers having identified all individual projects. The results were very similar by amount issued.

Disclosure was only considered at project level when all projects were identified. When disclosed, project-level information almost always included the project's name and description, often along with its location. The **Queensland Treasury Corporation** and **Province of Quebec** were examples of green bond issuers with detailed qualitative information for all projects.

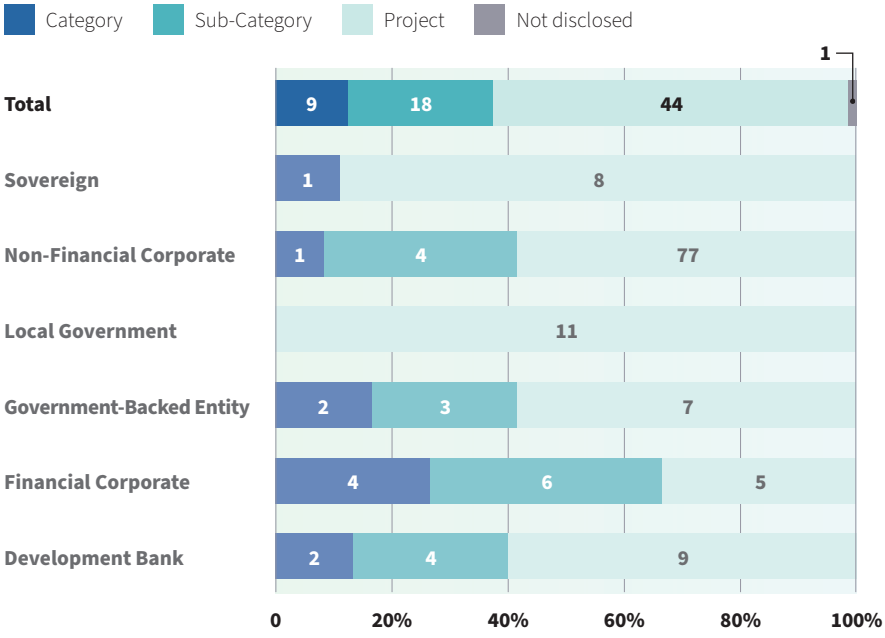
Sub-category disclosure was the norm pre-issuance



NB: 'Category' refers to broad project categories (e.g., energy, transport, etc.), 'Sub-category' to more granular project categories or descriptions (e.g., solar energy, wind energy, rail transport, EVs, etc.), and 'Project' to individual projects identified by at least a description and typically other details (e.g., name, location, beneficiary).

Source: Climate Bonds Initiative

Post-issuance project disclosure by issuer type



NB: 'Not disclosed' refers to the only not-for-profit assessed (Ford Foundation), which did not disclose the projects or categories financed with its social bonds.

Source: Climate Bonds Initiative

All local governments and eight out of nine sovereigns provided project-level disclosure; an example of public sector issuers having demonstrated best practice.

Ideally, projects/assets financed by GSS bonds would all be disclosed individually but the results here illustrated that much room for improvement remains. This level of granularity is considered unfeasible for some issuers (especially financial corporates), due to the quantity or for confidentiality reasons. Better tracking systems and excluding sensitive details such as project names and/or beneficiaries could enable greater project-level disclosure in such cases.

Development banks often finance dozens or hundreds of projects and provide substantial project-level data, e.g., **EIB**, **IFC**, **World Bank (IBRD)**. The **EU's** green bond reporting takes a slightly different approach, providing extensive qualitative information around the type of projects financed without disclosing individual projects.

About 30% of the issuers reporting at category or sub-category level provided case studies for some projects.

Project-level allocations are also quite common

Individual projects can be identified without providing allocations or impact data for each one. As well as project identification, Climate Bonds also assessed the level of project granularity specifically for allocations and impact data.

Allocations were found to be reported with slightly less project granularity, which was understandable given that projects can be identified without disclosing allocations to each, but not vice-versa.

The largest difference found was among financial corporates, with only three having provided allocations for each project compared to five for project details.

One local government, the **Autonomous Community of Madrid**, provided allocations at the project level for its sustainability bonds but only at the sub-category level for its green bonds.

In the case of one development bank, allocations were considered reported at project level despite having referred to loan commitments rather than actual GSS bond allocations.

49% of surveyed amount issued had project-level allocations

	Amount issued (USDbn)
Category	341
Sub-category	301
Project	690
Total	**1,332**

The results by amount issued were more skewed towards less project granularity than looking at number of issuers, since larger issuers were more likely than smaller ones to report allocations at category rather than project level.

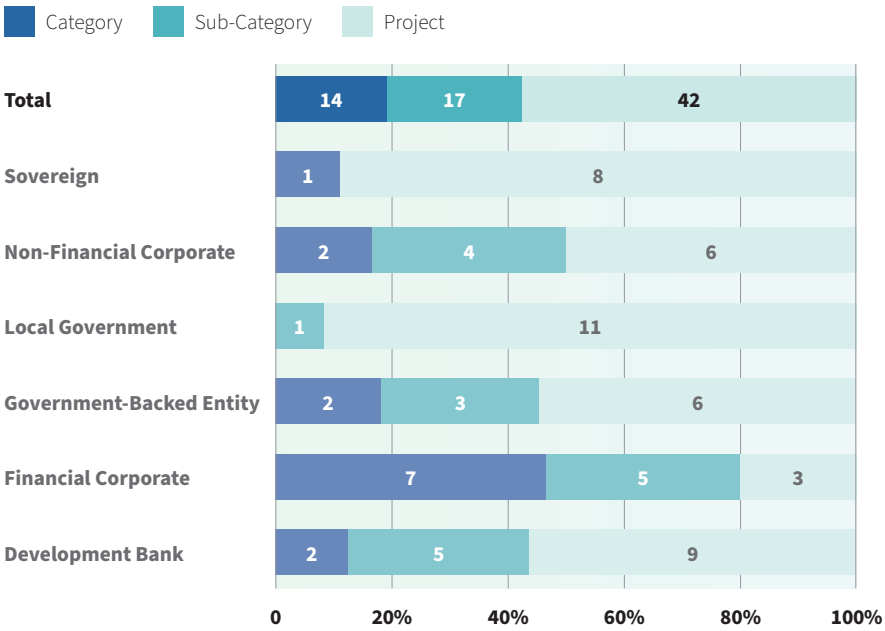
Impacts were reported with marginally less project granularity. Compared to project identification and allocations, impacts were disclosed with the least project granularity. However, despite fewer examples of project-level impact disclosure across all issuer types, the difference was not large.

Most issuers identifying individual projects report both project-level allocations and impacts.

A 'Bond/Programme' result was added as one issuer reported impacts for its overall bond programme only (i.e., not disaggregated by category nor project). Such cases generally imply a lack of clarity because many impact indicators can apply to multiple categories, making it unclear what the impact data refers to (this only applies if more than one category is financed). This can also happen in cases where impact data is reported at category/sub-category level, because a given impact indicator will not necessarily be relevant to all projects within each category/sub-category (especially the former). Issuers should strive to clarify this.

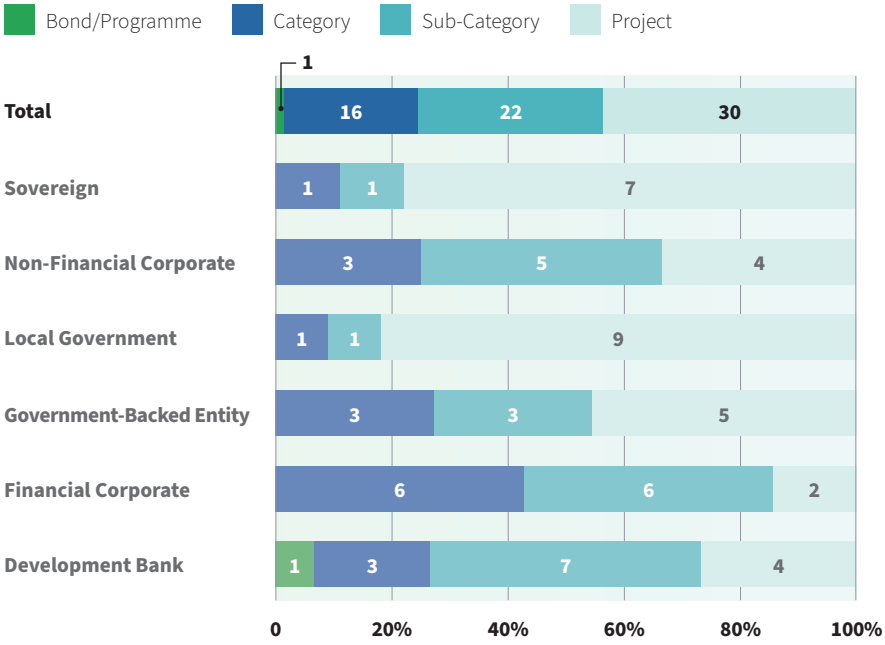
Similarly to allocations, larger issuers were more likely to report impacts at category rather than project level versus smaller issuers.

Post-issuance allocation disclosure by issuer type



Source: Climate Bonds Initiative

Impact disclosure by issuer type



NB: Excludes four issuers that did not report impacts.

Source: Climate Bonds Initiative

31% of surveyed amount issued had disclosed project-level impacts

	Amount issued (USDbn)
Bond/Programme	19
Category	398
Sub-category	338
Project	445
Total	**1,200**

Aggregation by category was more likely for allocations than impacts

Among issuers reporting allocations/impacts at project level, about one-third aggregated allocations data at category level, one-third aggregated both allocations and impact data at category level, and one-third did not aggregate the data by category.

Understandably, data aggregation by category was more common for allocations than impacts. Allocations were expressed as currency amounts which could easily be added up, while the methodology to assess impacts often differed between projects, preventing a straightforward aggregation.

Number of categories funded often fewer than eligible pre-issuance

Issuers can, and often do, identify more eligible project categories pre-issuance than they end up financing and reporting post-issuance. The matrix (right) compares these two dimensions.

About 40% of issuers funded fewer categories than those listed as eligible pre-issuance. In general, the more categories identified as eligible pre-issuance, the lower the share of these financed. Among the four issuers that identified 13 eligible categories in their framework, a maximum of four categories were used.

However, several bonds had not fully allocated proceeds, i.e., they may still have financed more project categories.

Project nomenclature: 55 out of 69 issuers referenced ICMA

ICMA's project classification was by far the most frequently used nomenclature to categorise projects. Of the 55 issuers using ICMA, ten additionally referred to the classification under the EU Taxonomy or the Climate Bonds Taxonomy.

Classifying projects according to regional taxonomies was still relatively uncommon and was only observed for green projects. Among the issuers sampled, nine European issuers used the EU Taxonomy while two Chinese issuers used the 2021 edition of the Chinese Green Bond Endorsed Projects Catalogue. Of the issuers analysed the two issuers that used the EU Taxonomy alone (the **EU** for its green bonds, and the **EIB**) were relatively large and thus represented a higher share by volume than issuer count.

A few other issuers, including those of social bonds, referred to taxonomies but in terms of project eligibility (see page 14).

Number of eligible project categories (pre-issuance)	Number of project categories financed (post-issuance)											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**Not disclosed**
1	15											1
2	1	7										1
3	1	1	3									
4		2	1	6								
5	1		4	2	4							
6		1		2	4	8						
7				2	2	4	2					
8				1	1	1		2				
9									1			
10		1	1		1		2		1			
11							1	1			1	
13		1	1	2								
No framework found	1											

NB: Figures in matrix refer to number of issuers (e.g., 15 issuers identified one category in the framework and financed one category). Darker shading indicates a higher number of issuers.

Nine issuers used the EU Taxonomy to classify projects

	Number of issuers	**Amount issued (USDbn)**
ICMA	45	831.0
Internal	9	75.8
EU Taxonomy	2	86.3
ICMA, EU Taxonomy	7	115.9
ICMA, Climate Bonds Initiative	3	44.1
Green Bond Endorsed Projects Catalogue (China, 2021 Edition)	2	39.8
Not used	5	140.5
Total reporting	**69**	**1,333.4**

'Internal' was used when the project classification was unspecified and could not be matched to known nomenclatures. The 'Not used' result referred to five issuers which listed projects without classifying them.

The UN SDGs were often used as part of project classification but were not recorded since they used more generic categories and referred to outcomes/benefits of projects rather than their type. About 50-60% of the issuers sampled were estimated to have disclosed the SDG contributions of projects.

Project eligibility against taxonomies

Determining the eligibility of projects to be financed is an essential step of GSS bond issuance.

While GSS bonds are typically self-labelled instruments, taxonomies provide a science-based classification system of projects/activities that are considered green/sustainable and are an important tool to assess whether bonds really are green/sustainable. This was the main driver for creating the Climate Bonds Taxonomy, the first version of which was originally released in 2013, and is the primary purpose behind Climate Bonds Green and Social & Sustainability Bond Databases, which classify bonds as aligned or not aligned accordingly.

With the development of many regional taxonomies in recent years ('taxomania'), Climate Bonds assessed the extent to which issuers referenced such taxonomies in the context of project eligibility, along with the share of projects considered eligible.

More issuers were assessing the eligibility of projects financed by GSS bonds against relevant taxonomies, but the share was still relatively small (33%).

Of the issuers sampled, two-thirds did not reference taxonomies. Among the third that did, 60% disclosed the eligibility of their GSS bonds/projects, which was determined either by the issuer or an external reviewer. The following issuers stated 100% alignment.

- EU Taxonomy: **Autonomous Community of Madrid**, **CaixaBank**, **Dutch State Treasury Agency**, **EDP**, **Helaba**, **Intesa Sanpaolo Spa**, and **Volkswagen.**
- EU Social Taxonomy: **Council of Europe Development Bank** (based on a preliminary, high-level assessment).
- Catalogue of Projects Supported by Green Bonds (2021): **Bank of China**, **China Three Gorges Corporation.**
- Common Ground Taxonomy: **China Bank** (for one bond issued in 2022).

The other issuers that disclosed an alignment share did so against the EU Taxonomy: **EIB** (91%), **Iberdrola** (90%), **EU** (57.5% for green bonds), and the German state of **North Rhine-Westphalia** (17.1% for green projects, 34 out of 41 social projects).

Only a few regional taxonomies referenced in sample

Regional taxonomies	Number of issuers	Amount issued (USDbn)
EU Green Taxonomy	18	287.6
EU Social Taxonomy	2	10.0
EU Green Taxonomy, EU Social Taxonomy	1	12.9
Catalogue of Projects Supported by Green Bonds (2021) (China)	2	26.9
Common Ground Taxonomy	1	9.6
Korean Green Taxonomy	1	5.0
Not stated	50	981.5
Total	**69**	**1333.4**

North Rhine-Westphalia provided the most detail

North Rhine-Westphalia was additionally identified as the issuer that provided the most information overall regarding taxonomy eligibility, including assessment against the EU Taxonomy's technical screening criteria as well as DNSH and minimum social safeguard requirements, all at project level. It provided the same level of detail for social projects against the proposed EU Social Taxonomy.

Additional cases

Two other issuers stated partial alignment without giving an amount; one by stating partial or full alignment for each category (**Nordea Bank**), and the other stating expected alignment (yes or no) for each project (**City of Gothenburg**).

In a few cases, pre-issuance frameworks mentioned green bonds would align (or 'intend to align') 100% with the EU Taxonomy, but this was not mentioned in post-issuance reports. In addition, three post-issuance reports stated future alignment with the EU Taxonomy, but no more details were given.

The **Kingdom of Thailand** referred to Thailand's Green Taxonomy in its sustainability bond reporting, but this was not linked to the projects financed and therefore was excluded from the table above.

Increase expected

As taxonomies in some regions were only launched within the last year or two (i.e., since 2022), and others being in development, the share of issuers referencing regional taxonomies is expected to increase considerably in the years ahead. Since many countries with GSS bond issuers were not included in the sample, there are also likely to be others mentioned in the overall market.

Additionally, as SPO providers are still developing methodologies to carry out alignment evaluation with local taxonomies it is likely that this type of disclosure will continue to grow.

Impact reporting

Impact reporting is the most nuanced and complex aspect of GSS bond reporting given the range of impact indicators and assessment methodologies that can be used. Climate Bonds assessed several features of impact reporting, with the data in this section only including issuers that reported impacts (67 of 75).[42]

Most issuers do not clarify whether the impact assessment was conducted internally or by an external reviewer/consultant, but both cases are common.

Impact reporting frameworks were often not referenced

Frameworks focusing on impact reporting among GSS bonds aim to standardise and improve the quality of impact disclosure in the GSS bond market by recommending approaches to reporting and which impact indicators to use. Climate Bonds did not assess alignment with GSS bond reporting frameworks, i.e., the results are only based on issuer statements within post-issuance disclosure.

The most common is the **Harmonised Framework for Green Bond Impact Reporting**, which is governed through a working group of many different stakeholders chaired by ICMA and working group coordinators. An equivalent framework for social bonds has existed for a few years but is referenced less frequently by GSS bond issuers. Issuers of sustainability bonds are expected to use both.

Only three issuers reported in line with, and explicitly mentioned, the **EU GBS**: **CaixaBank**, the **Dutch State Treasury Agency**, and the **EU**.

About 50% of issuers did not reference a reporting framework, although some may have used one without referencing it. Almost 40% of these mentioned ICMA's harmonised frameworks (typically the green one) in pre-issuance frameworks so may have used them but failed to confirm this post-issuance. Two other issuers mentioned their reporting is aligned with ICMA but this was taken to mean the GBP rather than the harmonised frameworks, so they were considered not stated.

Climate Bonds' view: impact reporting

Climate Bonds' view is that a) reporting impact data is only required for some projects/assets and recommended for others, and b) when it exists, impact reporting must be transparent, especially regarding the methodological aspects of impact assessment.

Impact reporting is a requirement to comply with ICMA Principles as well as the EU Green Bond Standard (although only once during a bond's lifetime in the EU GBS). Climate Bonds' view on impact reporting, reflected in the CBS and Certification Scheme, is slightly more nuanced. The CBS encourages impact reporting stating that it must include, at a minimum, any metrics required for confirming compliance with specific Climate Bonds Sector Criteria. In essence, Climate Bonds Sector Criteria determine what is a 'future fit' asset or investment against which reporting is necessary to demonstrate compliance.

Reporting impact data is generally recommended but only required for a few project types to demonstrate their continued eligibility against the Climate Bonds Sector Criteria (e.g., energy efficiency improvements on a yearly basis). For most project types, such as renewable energy generation and low-carbon transport systems, the eligibility of projects does not depend on impact data such as how many MWh are generated or GHG emissions are avoided. It could also be that the impact data needed is disclosed pre-issuance. The only requirement in both cases is therefore to report allocations.

On the other hand, Climate Bonds recognises that impact reporting is becoming more common and understands that it increasingly supports investors which may need the data for their own disclosures (e.g., under SFDR and the UK's SDR). In addition, the usability of impact data could increase exponentially as the market develops and the harmonisation of impact reporting grows, especially if reliable impacts per unit of investment can be calculated and compared between projects and/or issuers. This can support the direction of capital to where it is most impactful. While reporting quantitative impacts is assigned the same level of importance as reporting allocations by many, it is worth noting that what is meant by, understood by or expected from impact reporting can vary. Consequently, what qualifies as impact reporting for one investor, or indeed when it is deemed necessary, may not be the same for another.

Harmonised Framework for Green Bonds was by far most used

GSS bond reporting frameworks/standards	Number of issuers	Amount issued (USDbn)
ICMA Harmonised Framework for Green Bond Impact Reporting (ICMA HF)	24	464.1
ICMA Harmonised Framework for Social Bond Impact Reporting (ICMA SHF)	4	31.1
ICMA HF + ICMA SHF	4	27.4
ICMA HF + Nordic Public Sector Issuers Position Paper	2	11.7
EU Green Bond Standard (EU GBS)	2	67.4
ICMA HF + EU GBS	1	10.9
ICMA SHF + Harmonized Indicators for Private Sector Operations (HIPSO)	1	5.1
Green Bonds Working Towards a Harmonized Framework for Impact Reporting (2015)	1	34.8
NAFMII Guidelines on Ongoing Information Disclosure During the Life of Green Bonds	1	13.5
Not stated	38	542.3
Total	**67**	**1197.7**

Five impact indicators reported on average

The issuers sampled used between one and 34 impact indicators to communicate the impacts of the projects they financed with the average being 5.1. Impact indicators may or may not apply to all projects an issuer has financed in each category.

While there was a positive correlation between the number of impact indicators reported and the number of project categories financed, it was not very strong (0.27). For example:

- Between one and 13 impact indicators were used among issuers financing one category.
- Three to 15 in the case of three categories.
- Five to 20 in the case of five.
- Six to 26 in the case of eight.
- The maximum of 34 impact indicators were used in the **UK's** sovereign green bond, which financed six categories.

Issuers used a wide range of impact indicators, the analysis of which was found to be the most time-consuming and complex part of the research conducted, due to the lack of harmonisation and clarity which still characterises impact reporting practices despite the increasing use of ICMA harmonised frameworks. This is an issue which Climate Bonds and others have highlighted before.

The main objective was to identify the impact indicators used in each category of projects, along with their relative frequency. Among other uses, this can support the harmonisation efforts of ICMA's impact reporting working groups.

Between one and 34 impact indicators used by issuers sampled

Number of (final) impact indicators	Number of issuers	Amount issued (USDbn)	Number of (final) impact indicators	Number of issuers	Amount issued (USDbn)
1	1	0.1	**13**	9	131.7
2	4	52.6	**14**	2	75.4
3	8	71.6	**15**	6	31.7
4	9	173.3	**16**	2	8.1
5	9	122.1	**17**	2	18.5
6	5	21.9	**19**	2	7.3
7	5	37.0	**20**	1	1.7
8	4	52.1	**21**	1	14.2
9	4	147.2	**26**	1	51.5
10	5	23.2	**29**	1	5.1
11	1	2.2	**31**	1	3.2
12	4	41.6	**33**	1	34.8
			34	1	56.2
			Total	**67**	**1197.7**

NB: Darker shading = higher issuer count/amount issued.

An increasing number of issuers included a list of expected or potential impact indicators for each project category pre-issuance, with only a selection typically reported post-issuance.

A wide array of almost 700 impact indicators reported by issuers was collected, which often classified the same impact indicator while using different terminology, and occasionally lacking a clear description of the impact indicator's meaning. The level of specificity also varied considerably (e.g., 'number of projects funded/supported' versus 'retention rate of disabled customers'), as did the level of ambition, reflecting the rigour with which projects are deemed eligible (e.g., loans to businesses allocating a share of their turnover to support communities).

As the list of raw impact indicators is too long to show, it was condensed to a set of 237 final impact indicators. This process is explained in the appendix, along with the results table.[43]

Social impact indicators were highly biased towards the number of beneficiaries

The results in the impact indicator table (see appendix) were self-explanatory, but the following present a selection of key findings:

- The number of impact indicators in each category mainly depended on the number of issuers/projects in the category. However, some categories, especially green, had a more concentrated use of a few core impact indicators (e.g., GHG emissions avoided, renewable energy generation, and installed capacity in energy); whereas some categories, particularly social, had a more even distribution of impact indicator use.
- Impact indicators were usually related to climate benefits or number of beneficiaries, which reflected the bulk of projects financed. Issuers of such projects very rarely dedicated a portion of proceeds and impact indicators to other areas, such as biodiversity, circular economy, and just transition.
- Adaptation & resilience (A&R) projects used the highest share of impact indicators that are not contained within the harmonised frameworks.
- Quantitative impact reporting was less advanced in social categories versus green, however it was more likely to include qualitative information regarding project benefits. Impact indicator used in social categories was highly biased towards the use of 'number of beneficiaries', a straightforward output measure.
- 'Number/value of loans disbursed' was a common impact indicator, as was 'number of projects funded/supported', which were included for completeness but should not be considered as impact reporting unless accompanied with sufficient qualitative information, especially in green categories where more insightful impact indicators were likely to exist.
- Disaggregation of GHGs other than CO_2 was very rare and only three cases were found, of which two were from China.
  - Some issuers referred to CO_2 instead of GHG emissions. Typically, this was due to CO_2 being the only material GHG, but issuers ought to report all other contributing gases. However, this could have been attributable to human error.
  - No methane-specific impact indicators were observed.
- The use of units was standard, e.g., GHG emissions were always reported in tonnes of CO_2e. The norm was to report impacts as total figures rather than intensities, but many issuers also provided the latter, especially for GHG emissions avoided. When intensities are used, they were often expressed per relevant unit (e.g., per vehicle) or per unit of currency (e.g., per USD invested), but rarely both.

Outputs, outcomes, and impacts

The impact indicators reported by issuers reflected the positive and material impacts of projects financed by GSS bonds.

Many impact indicators technically refer to outputs and outcomes of projects rather than impacts. ICMA's Harmonised Framework for Social Bonds broadly defines outputs as products/services resulting directly from an organisation's activities (e.g., number of units produced), outcomes as changes/effects resulting from outputs (e.g., reduced rental cost for target population), and impacts as the attribution of an organisation's activities to broader/longer-term outcomes (e.g., reduction in homelessness rate). For the purposes of this research, the three concepts are collectively termed impacts.

Social projects were expected to make more use of outputs and outcomes, and these represented almost all the impact indicators observed in the sample. Reporting outputs/outcomes was also common practice among green projects, although to a lesser degree. The **EU** was very clear about the differences in its green bond reports.

Disclosure of impact assessment methodologies should improve

Methodologies to assess impacts differ from reporting frameworks by specifying how impacts should be calculated/assessed. Impact assessment methodologies are predominantly relevant for a few common impact indicators which require assessment against baselines: above all GHG emissions avoided (or saved/reduced), but also others such as energy and water savings. They are typically not specific to GSS bonds but rather focus on specific impact indicators and/or project types.

The most common methodologies were specific to and disclosed by the issuer, although some issuers used external methodologies without reference. The external methodologies referenced were for the most part widely known, which was not surprising given the sample consists of large issuers, but it could have been expected that niche methodologies might be more common among smaller issuers. Additionally, as found with reporting frameworks/standards, some issuers used multiple methodologies.

Approximately 55% of issuers did not state a methodology for any impact indicator, of which only about 30% did not need to due to using impact indicators for which a methodology usually would not be required (e.g., installed capacity, number of trees planted). It was less common for social impacts to be accompanied by methodology disclosure, as many social impact indicators simply referred to a number of beneficiaries.

Adaptation and resilience benefits are often harder to quantify

The benefits of A&R projects were often harder to quantify since they typically applied in response to future physical climate risks and therefore involve uncertainty. For example, the **Hong Kong Government** and the **Province of Ontario** provided detailed disclosure around their A&R projects, however this only included qualitative benefits.

The **European Bank for Reconstruction & Development (EBRD)** stood out as providing the most interesting detail around the A&R projects it financed, including indicators for each project via a matrix identifying relevant climate resilience outcomes (e.g., increased water availability, energy availability, etc.), as well as physical climate risks.

Overall, and despite progress in recent years, this pointed to an ongoing need for improvements in methodology disclosure.

Several issuers provided excellent disclosure of methodologies through clarity and detail, for example, the **UK Government**, **EU** (green bonds), **CaixaBank** (including for social projects), **Export-Import Bank of Korea**, **Intesa Sanpaolo** (including for social projects), **Motability Operations Group** (social bonds), and **Fannie Mae**.

Some issuers included methodological information in pre-issuance frameworks, however post-issuance reports should still included a statement confirming this remains valid. The **IFC** included a detailed methodology in its framework which was maintained as an appendix in post-issuance reports, and was the clearest approach.

Baselines were usually not disclosed

Existing guidance highlights the importance of disclosing baselines where relevant but about 60% of issuers lacked any such disclosure.

Baselines form a key component of impact assessment, allowing impact indicators to be judged against a reference point. While baselines are not a requirement for all impact indicators, some that are frequently used (e.g., GHG emissions avoided, energy and water savings) do require the use of a baseline. Comparable to methodology disclosure more broadly, this was a weak area of impact reporting which requires improvement and continued surveillance.

Baseline disclosure was most frequently found in relation to GHG emissions avoided, where it existed in about 70% of cases. It most commonly referred to country-specific grid emission factors, which were generally used in the case of GHG emissions avoided for energy projects. For other impact indicators, such as energy and water savings, the presence of baseline disclosure was lower at around 50%.

When calculating GHG emissions avoided, issuers should not assume that low-carbon projects, including renewable energy generation, produce

Almost two-thirds of issuers did not state methodology

Impact assessment methodologies	Number of issuers	Amount issued (USDbn)
EIB Carbon Footprint Methodology	3	49.3
GHG Protocol	6	243.4
IFI Framework for a Harmonised Approach to GHG Accounting (IFI)	1	10.4
GHG Protocol, EIB Carbon Footprint Methodology	1	5.9
GHG Protocol, IFI	1	0.1
GHG Protocol, PCAF, IFI	1	9.6
EIB Carbon Footprint Methodology, PCAF	1	2.1
UNFCCC	1	22.9
ISO	1	6.5
Internal	14	235.6
Internal, IFI	1	8.6
Internal, Harmonized Indicators for Private Sector Operations (HIPSO), IRIS+ (GIIN)	2	18.7
Not stated	41	584.7
Total	67	1197.7

NB: Darker shading = higher issuer count/amount issued.

zero emissions. The **Government of Hungary** was among the few that did not make this assumption and disclosed this transparently.

Data sources are often lacking

Impact assessments may require external sources for some data points, especially emission factors for GHG emissions avoided.

Only about 25% of issuers reporting GHG emissions avoided provided data sources for the emission factors used. These ranged from well-known sources, such as IEA and IRENA and some which were also assessment methodologies (e.g., EIB, PCAF, IFI GHG Accounting), to more niche sources which tended to be country and/or sector specific.

The **City of Gothenburg** included a simple table with emission factors and sources for each project type, which was rarely seen; however, in addition to the emission factors, the baselines could have been described for added clarity. The **Export-Import Bank of Korea** was also transparent about emission factors and data sources.

Ex-ante and ex-post assessments are both common

Impacts assessed before they materialise are defined as ex-ante, while those assessed after are considered ex-post. Ex-ante assessments are the default, and this is reflected in ICMA's harmonised frameworks, but just over 40% of issuers conducted ex-post assessments for at least one impact indicator. Both ex-ante and ex-post assessments for a given impact indicator can occur, but in practice this is rare. The 'Both' label (in the graph right) almost always referred to issuers that assessed some impact indicators ex-ante and some ex-post, mostly skewed towards ex-ante. 40% of issuers did not make the timing of impact assessments clear.

While the results were ideally based on issuer disclosure, some had to be inferred from the descriptions of methodologies since many issuers did not explicitly include ex-ante or ex-post terminology. Although Climate Bonds do not consider this a hugely important piece of information, fully disclosing impact reporting approaches, of which the timing of assessments is a part, constitutes best practice.

The **World Bank (IBRD)** had excellent disclosure on this aspect, clearly differentiating between achieved and projected impacts, and detailing the difference in its methodological section. The **EU** also distinguished clearly between already realised and expected impacts.

Assessment of adverse impacts were not commonly disclosed

Despite providing core sustainability-related benefits, some projects financed by GSS bonds such as large infrastructure projects, may lead to adverse or negative impacts on biodiversity and local communities.

About 25% of issuers reported an assessment of potential adverse impacts, almost half of which through DNSH assessments were linked to the EU Taxonomy. For most projects, material negative impacts were unlikely, consequently such assessments may have been deemed irrelevant by many issuers, while others may have conducted the assessment but did not disclose it if no negative impacts were identified.

Not all issuers assessing EU Taxonomy alignment undertook DNSH assessments, but most did. Among those that did, it was sometimes not clear whether the projects passed the assessment or not. Only one issuer clearly stated that some projects did not.

Among the three issuers that identified potential adverse impacts, only one did not provide an action plan for eliminating or mitigating these.

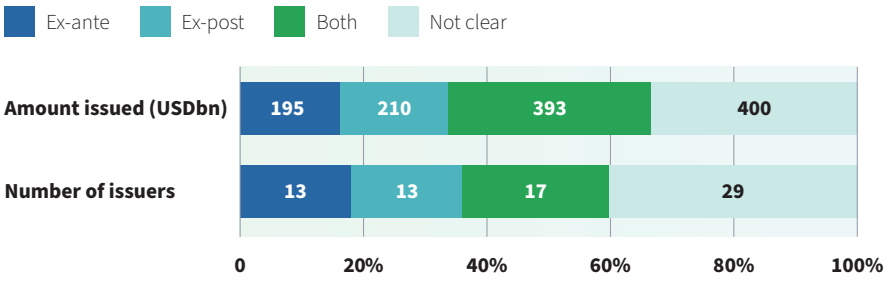
Some issuers demonstrated heightened transparency. The **Dutch State Treasury Agency** provided a very clear explanation of two adverse impacts identified (use of space by offshore wind parks and noise pollution of railways). The **San Francisco Public Utilities Commission** disclosed DNSH assessments via separate documents for many of its projects.

Of the issuers that disclosed who conducted the assessment of adverse impacts, approximately 50% were conducted internally. The remainder were conducted externally by reviewers or consultants.

Almost half were DNSH assessments as part of EU Taxonomy

Adverse impact disclosure	Number of issuers	Amount issued (USDbn)
Yes	10	290.0
Yes (DNSH as part of EU Taxonomy assessment)	7	131.8
No	54	775.9
Total	**67**	**1197.7**

40% of issuers were not clear on timing of impact assessments



Source: Climate Bonds Initiative

Estimating impacts was more common than measuring

Impacts could either be estimated or measured directly, sometimes referred to as real or recorded impacts.[44] Impacts assessed ex-ante were necessarily estimated, while those assessed ex-post could be either estimated or measured depending on the impact indicator and the issuer's data collection capabilities. For example, when assessed ex-post, 'renewable energy generation' or 'number of passenger trips completed' could be either estimated or measured depending on whether the issuer had access to precise measurements.

Estimating impacts was more common than directly measuring them. The chart shows a small difference between them, but the 'Both' result included more estimated than measured impact indicators (e.g., an issuer reporting eight impact indicators of which only one was measured was still classified as 'Both').

The 'Not clear' result was again the most common due to many issuers failing to specify data collection methods. When there was relevant disclosure, the most common case was 'Both' since most issuers used a range of impact indicators which were calculated in different ways.

Despite many impacts being estimated, it was rare for issuers to provide impact ranges to reflect uncertainty. The **Arab Republic of Egypt**, which estimated almost all its impacts ex-ante, demonstrated best practice by providing ranges depending on different scenarios of modal transfer.

Most impacts were attributable to GSS bonds

Most issuers (61%) reported the impact data attributable to the share of GSS bond financing, demonstrating best practice. Almost 90% of these did so directly, while a few provided the total impacts of projects along with the attributable share, enabling an easy calculation to determine attributable impacts. Two issuers provided both the attributable and total impact for all projects, which was the best-case scenario although not required.

Two issuers reported the attributable share of impacts except for a couple of impact indicators, explaining that their funding played a catalytic role and/or they did not have data on the total project, which while not ideal, was acceptable as the disclosure was transparent.

Perhaps the most striking finding was that for 21 issuers, it was not clear whether the impacts reported referred to attributable or total impacts. The most likely case was the former, but issuers should always clarify this to avoid confusion.

Issuers are recommended to report the impacts specifically attributable to GSS bond financing, i.e., prorating total project impacts if the projects received other sources of finance. The exception is project portfolios where the issuer's funding played a catalytic role, although the recommendation is to provide the attributable share alongside the total impact.

Cumulative impacts were slightly less common than cumulative allocations. Almost 50% of issuers representing 69% of the volume provided cumulative impacts for all impact indicators, slightly lower than for allocations data. However, it included issuers that had only reported once for a given bond (i.e., where there was not more than one period to accumulate).

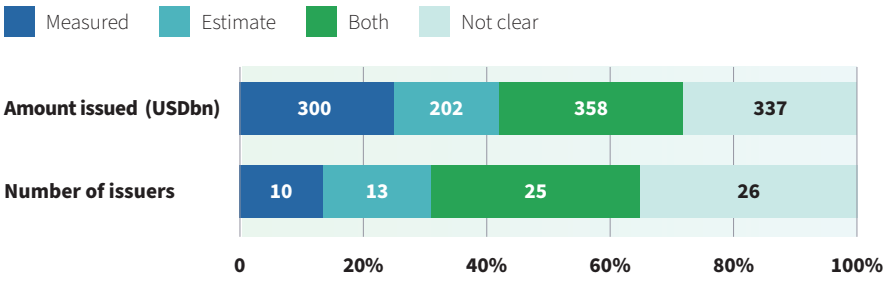
Since annual reports were the norm, impacts typically referred to the impacts achieved during that same year. Similarly to the disclosure of cumulative/historical allocations (see page 19), it was therefore helpful for issuers to also disclose the cumulative impacts of projects in their latest report.

This is only relevant for impacts referring to a period, such as GHG emissions avoided, or renewable energy generated. Others, such as installed capacity, refer to an impact happening only at a point in time and therefore do not accumulate from one period to the next for a given project.

One issuer demonstrated excellent practice by disclosing both annual and cumulative impacts, as well as the total impact expected by 2026 when its project is predicted to cease being operational. This constituted very clear reporting and was linked with the disclosure of project lifetimes (see page 20). Other issuers with clear disclosure around the relevant period of impacts included the **UK Government** and the **Government of Hungary**.

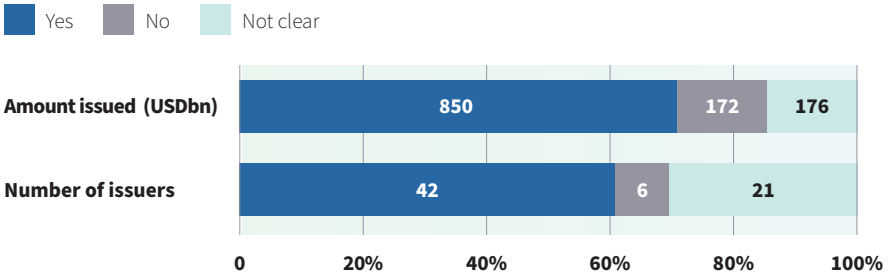
Seven issuers did not make it clear whether the impact data reported was annual or cumulative. One issuer only provided cumulative GHG emissions avoided instead of both cumulative and annual.

35% of issuers did not specify data collection methods



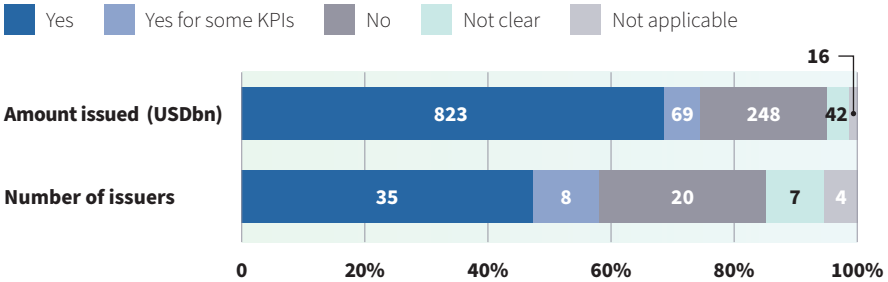
Source: Climate Bonds Initiative

Clarification of attribution



Source: Climate Bonds Initiative

Provision of cumulative impact data



Source: Climate Bonds Initiative

Project lifetimes were usually not disclosed

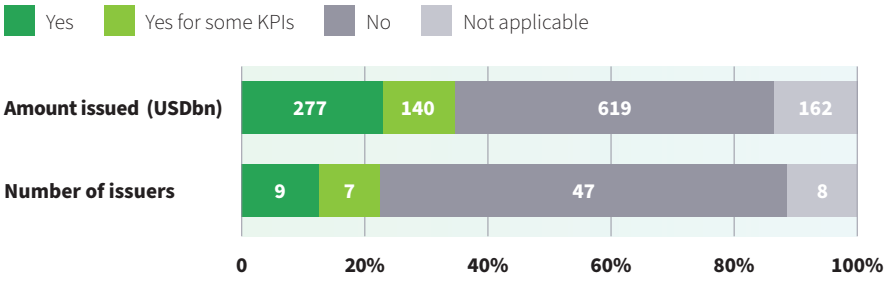
Disclosure of project lifetimes was an area which is in clear need of improvement, with 66% of issuers failing to report this for all their projects. For projects delivering and reporting periodic impacts (e.g., GHG emissions avoided), project lifetimes are typically needed to understand their lifetime impact. Another option is to directly provide the estimated lifetime impact of projects, clarifying extrapolation methodologies; for some projects it is not simply a matter of multiplying annual impacts by the number of years they are operational.

Some issuers demonstrated very clear disclosure around project lifetimes and included this for most or all projects, such as the **UK Government**, **Helaba**, **Province of Quebec**, **Thailand Government**, **Arab Republic of Egypt**, **World Bank (IBRD)**, and **Asian Development Bank**.

Only three issuers provided project start and operationalisation dates for all projects. The **Province of Ontario** stated when impacts were expected to start for transport projects (i.e., 2030), clarifying that lifetime impacts would be provided once the procurement process is completed.

ICMA's harmonised frameworks additionally recommend issuers 'to show additional information such as the year of signing (or other measures to describe the seasoning of a portfolio) or project stage from a financing point of view (such as signed, disbursed, repaying)'.[45] The **EBRD** provided detail on this, identifying projects in repayment versus disbursing/to be disbursed phases.

Provision of project lifetime



Source: Climate Bonds Initiative

Entity-level linkage

GSS bonds versus the entity level

The labelled sustainable finance market includes two main types of fixed income instruments:

- General purpose, performance-linked bonds/loans (SLBs and SLLs)[46]
- Use of proceeds (UoP) bonds/loans (GSS bonds)

While they differ in scope, both are intended to support an issuer's overall sustainability strategy and/or transition plan:

- Performance-linked instruments do so by setting forward-looking, entity-level targets that reflect expected improvements in sustainability performance at the entity level.
- UoP instruments do so by financing specific sustainable projects/assets, including those which enable entity transitions.

Coherence between GSS issuance and entity-level activities is essential to ensure a credible market.

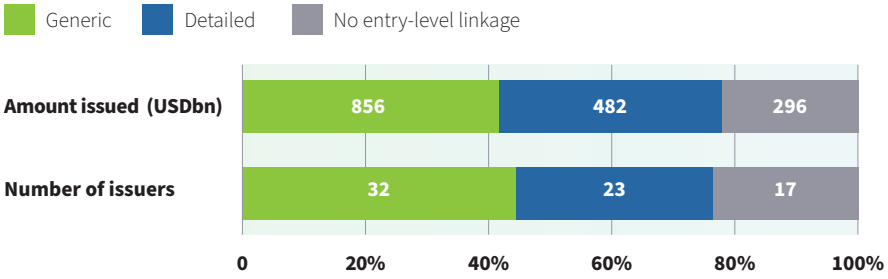
Existing GSS bond guidance and standards have started to reflect the entity-level dimension more explicitly, for example being recommended in the EU GBS and by ICMA (including through the Climate Transition Finance Handbook).[47] Climate Bonds highly recommends that GSS bond issuers explain entity-level linkages, however this in itself is not a specific requirement in either the CBS and Certification Scheme, or for alignment with the Climate Bonds Database Methodologies.

In terms of what constitutes a credible entity-level transition, issuers have access to a growing body of guidance. Climate Bonds has worked extensively on this topic, including setting the five hallmarks for a credible transition and expanding the Climate Bonds Standard to v4.2, enabling the Certification of entities and sustainability-linked instruments.[48,49] Various other relevant initiatives exist, many of which have been mapped by Climate Bonds.[50,51]

Indicative assessment

Many issuers included entity-level linkages in their GSS bond frameworks as opposed to, or in addition to, post-issuance reports. Climate Bonds' view is that, to showcase their vision, the priority is for issuers to include this information in pre-issuance documents, along with how the projects or assets tie into entity-level strategies or transition plans. However, since frameworks are often several years old and the exact projects financed by GSS bonds are typically only disclosed post-issuance, Climate Bonds' recommendation is to include an updated summary within post-issuance reports, or at least to clarify whether information in frameworks remains valid. Issuers can also indicate where more information exists, e.g., in entity-level documents.

Almost 80% of the issuers surveyed provided entity-level linkage



Source: Climate Bonds Initiative

As part of Climate Bonds' post-issuance research, issuers' entity-level framing was for the first time assessed in the context of GSS bond reporting. This was confined to an indicative and qualitative assessment based on GSS bond documents, not broader entity-level documents such as annual or sustainability reports, which generally include more detailed entity-level information. In addition, it is an assessment of the extent of disclosure, not the ambition of entity-level targets nor the credibility or success of implementation plans.

Most issuers linked GSS issuance with their entity-level strategy

The results were generally positive, although there was much room for improvement.

Only 24% of issuers did not frame their GSS issuance in the context of entity-level targets or strategy within post-issuance reports, of which about 30% provided this in pre-issuance frameworks. Almost half (44%) provided a generic description post-issuance, which typically consisted of one or two paragraphs giving an overview of their sustainability-related objectives and how issuing GSS bonds supports this.

One-third demonstrated best practice by giving a detailed account of all sustainability-related targets and implementation plans, clarifying how the projects financed by GSS bonds helped them deliver on these plans and targets. Depending on the complexity of the issuer and its activities, this information ranged from one to several pages in length.

The results were similar by amount issued but slightly skewed towards a greater level of detail, suggesting larger issuers were marginally more likely to provide such information in their GSS reports.

Non-financial corporates were most likely to lack entity-level framing

Local governments, sovereigns, and financial corporates were the most likely groups to explain links between the GSS and entity-level dimensions. Nederlandse Waterschapsbank (NWB Bank), a Dutch government-backed entity, provided highly detailed entity-level information within its GSS report. Other best practice examples included **CADES**, **Arab Republic of Egypt, UK Government** (especially pre-issuance), **Unédic**, and **Treasury Corp of Victoria**. Korean **Kookmin Bank** provided less detailed qualitative information but included various quantitative targets by sector, which was very useful.

Non-financial corporates were the least likely to include any entity-level link, with 5 out of the 12 issuers not disclosing this information. **Volkswagen** and **EDP** were the only non-financial corporates to provide a relatively detailed linkage. While Climate Bonds does not dissuade issuers from accessing the GSS bond market if they do not have a transition plan in place, this was an important area of improvement, especially among issuers from hard-to-abate sectors.

While an assessment was not formally conducted in Climate Bonds' last post-issuance research in 2021, the impression was there were considerably more issuers framing GSS issuance within entity-level strategies. A positive trend, this was likely the result of a variety of factors including the greater availability of relevant guidance, increased market pressure and investor expectation, reputational benefits for GSS issuers to disclose information in a cohesive and coherent manner, and mounting regulatory requirements. A key finding in a recent CDP report noted 'Over 1 in 4 companies (5906) disclosed through CDP that they have a 1.5°C-aligned climate transition plan in place – an increase of 44% since last year'.[52]

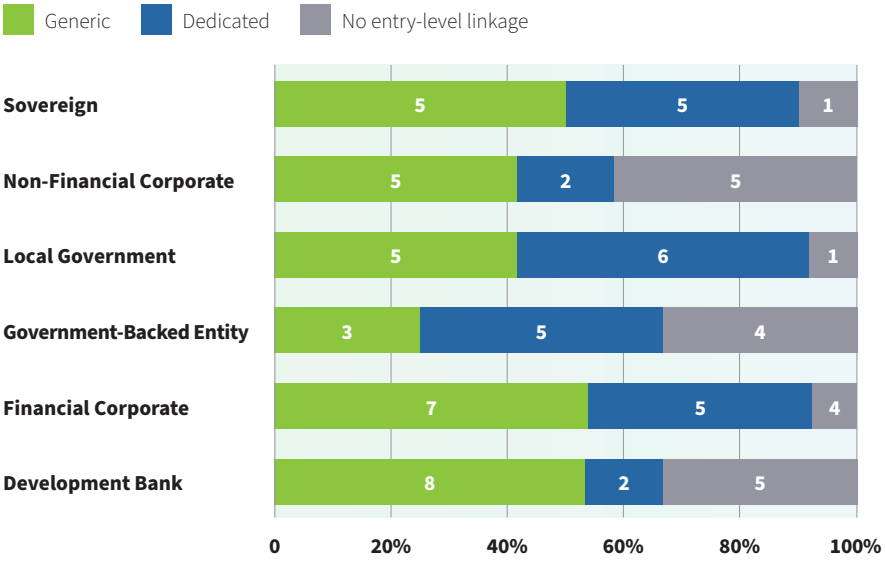
Few provided quantitative metrics linking the two dimensions

Ideally, issuers would have provided quantitative data on the extent to which GSS bonds contributed towards progress made at the entity-level targets, both in terms of sustainability performance/impact indicators (e.g., GHG emissions, renewable energy capacity, taxonomy alignment) and financing (e.g., investment needed to deliver targets). For added clarity, this could be provided as both absolute and percentage levels.

While qualitative explanations were common, relatively few issuers provided quantitative links between GSS bonds/projects and entity-level strategies/targets. Of the 55 or so issuers that provided some entity-level information within GSS reports, only seven provided quantitative data directly linking the two dimensions. Within these, five only did so for investment needs rather than sustainability impact indicators. While several issuers provided the taxonomy alignment of projects financed by GSS bonds (mentioned on page 13 and 14), none disclosed what this equated to in terms of their entity-level alignment.

The **EU's** disclosure was considered the most complete in this aspect, including the quantitative contribution of its green bonds towards regional GHG emission targets and financing needs over multiple time horizons.

Entity-level linkage by issuer type



Source: Climate Bonds Initiative

Best practice examples

One of the core objectives of this study is to highlight best practice. A few general examples of high-quality reporting are provided in this section, complementing the specific examples mentioned in previous sections.

Sovereigns found to be the best group overall in sample

The issuers selected were the best within the sample analysed. Examples from each issuer type were included, except for non-financial corporates which were generally weaker (the best non-financials overall were **Volkswagen**, **Alphabet Inc.**, **Fujifilm**, and **EDP**).

Excluding those EM sovereign issuers where no reporting was found, sovereigns were identified as the issuer type with the best quality of reporting overall within the context of the issuers surveyed, displaying several of the aspects within their reporting highlighted in the outlook and recommendations section below.[53] Several other countries not included in the sample, such as **Italy**, **France**, **New Zealand**, and **Ireland**, also reported well, although not all reported impacts.

The high quality of post-issuance reporting from sovereigns was due predominantly to the completeness and granularity of disclosure. This could perhaps be linked to greater resources available and dedicated to reporting processes, with many different people and departments often needing to engage in order to collect and report the data. It may also have emanated from increased pressure to report transparently and represent the country in a positive light.

Overall, the development banks surveyed also demonstrated a high-quality of reporting.[54] Several large multilateral development banks (MDBs) included were long-time issuers that helped to design best practice guidelines in the market's earlier stages and continue to do so. The same can broadly be said of commercial banks, although there was more variation within this group.

Highlighted in other sections of this paper, local governments stood out as having excellent disclosure across several aspects of reporting. They were generally the best at providing project-level information, clarity on cumulative allocations, and explanations framing GSS bond issuance within their overall activities and targets. However, it proved difficult to find reporting from some local governments, especially US Munis.

Other high-quality examples

Given the limited size of the sample, it is worth highlighting others. Scandinavian issuers have historically demonstrated excellent reporting. In the past, Climate Bonds has considered Danish **KommuneKredit** and Norwegian **Kommunalbanken**, both financing institutions for local governments, as having perhaps the best post-issuance reports overall.

General best practice examples (from sample)

Issuer type	Issuer	Comments
Sovereign 	**United Kingdom**	Perhaps the best quality overall sampled, although impacts are only reported biennially. Highly granular and comprehensive disclosure, including excellent level of detail around impact reporting methodologies and caveats. Detailed country-level linkages but mostly pre-issuance. It is not the simplest report to follow but that is due to the range of projects financed and the detail of information provided. Total share of proceeds allocated could be stated explicitly. Documents could be listed more clearly on webpage.
	Dutch State Treasury	Excellent overall. Clear and succinct with all key elements, including clear descriptions of each project category, representation of historical and expected future allocations by category (which is rare), methodologies, alignment with EU Taxonomy (incl. DNSH), and discussion of other relevant topics (e.g. future issuance, liquidity, investor feedback).
	Republic of Chile	One of the best reporting issuers from EM. Reports across GSS themes. Very clear description of historical issuance/allocations, plus amount to be allocated by category (which was rare within the issuers surveyed). Could provide more methodological info and country-level links.
	Arab Republic of Egypt	Very good overall. Extensive project detail and country-level linkages (also pre-issuance). Impact ranges provided (which is rare) with methodologies.
	Republic of Hungary	Relatively simple report including all core aspects. Clear explanation of time periods, allocation process (incl. lookback period), and impact methodologies. However, documents were only found through Google. Country-level links mainly disclosed pre-issuance.
Local government 	**Province of Quebec**[55]	Great overall. Good website structure. Projects explained, including with project lifetimes/stages. Helpful summary of additional info/FAQs provided via separate document. Disclosure of impact methodologies could improve.
	City of Gothenburg	All core aspects included clearly and succinctly .
	Treasury Corp of Victoria	Clear and succinct reporting with clear entity-level linkage. However, weaker on impact disclosure.
	North Rhine-Westphalia	All relevant documents listed on webpage. Granular project-level disclosure, including clear process for project selection and excellent detail regarding eligibility against the EU Taxonomy.

General best practice examples (from sample)

Issuer type	Issuer	Comments
Development bank	**European Investment Bank (EIB)**	Detail is given for each project, including which bonds were used to finance each project. Allocation/impact data provided via Excel files. Generic link with group level in sustainable finance webpage, much more detail in framework.
	AFD	Granular reporting. Extensive project-level info with helpful summaries, e.g., breakdown by loan theme by region and with co-financing shares, SDG contributions with number of loans and amount to each, scores of loans, etc.
	Export-Import Bank of Korea	Simple report with all core elements. Clear identification of methodologies and data sources by category. Includes which framework version applies to each bond (which is rare).
Financial corporate	**CaixaBank**	Excellent overall, although only published at the end of 2023 referring to 2022. High quality project breakdowns and methodological disclosure (including for social projects). Can be hard to follow due to the detailed information.
	Kookmin Bank	Simple and clear report covering all core aspects. Clear GHG impact methodology. Only a short description of entity-level links but includes several relevant targets by sector (which is not common).
	Nordea Bank	Very clear overall, but not that granular including no project-level info. Excel files are also provided with GSS data by subsidiary.
Government-backed entity	**Unédic**	Very good overall. Clear webpage with all documents listed with publishing dates. Report has clear explanations and presentation, including visual representation of historical allocations and overall eligible expenditures. Apart from impact metrics, extensive characterisation of entrants/ beneficiaries for different support schemes. Detailed entity-level framing (also pre-issuance).
	Caisse d'Amortissement de la Dette Sociale (CADES)	Very easy-to-find, with clear explanation of allocations to broader CADES programmes and inclusion of cumulative allocations. However, impact reporting limited as not separated from CADES' overall activities. Extensive framing of GSS versus entity-level financing provided in investor presentation.

Best practice example case study

FIRA – Leading LAC's development bank green bond reporting

Mexico's development bank FIRA (Mexico's Trust Funds for Rural Development) has set a benchmark in green bond reporting in Latin America. FIRA has been at the forefront of public green bond issuance in Mexico, particularly for protected agriculture assets and projects, adhering to robust GHG emissions accounting standards.

Background

FIRA worked with the Inter-American Development Bank (IDB) and Climate Bonds to develop its Green Bond Methodology. This alliance enabled FIRA to certify environmentally friendly technologies, supported by a study from the IDB technical assistance programme funded by the German Government. In addition, in collaboration with the European Union and the French Development Agency, FIRA developed a sustainability taxonomy that allowed the identification and classification of investments that contribute to both environmental and social outcomes.

In 2018, FIRA issued its first green bond, raising MXN2.5bn (USD129mn) to finance projects with environmental impacts. Of this amount, MXN2.4bn (USD124mn) was allocated to over 500 projects.

Methodology

The Protected Agriculture Methodology compared protected agriculture with traditional open-field agriculture across various criteria, including productivity, water use, chemical inputs, and GHG emissions. The analysis covered high-tech, medium-tech, and low-tech protected agriculture systems, as well as shade houses.

This methodology not only facilitated the first internationally certified agricultural green bond but was referenced in two additional deals issued in 2019 and 2020. These bonds aimed to transform traditional open-field agriculture into protected agriculture.

FIRA's disclosure via the GBTP enables users to identify the timings of the disbursements and the relevant project categories.[56]

Category	Subcategory	# of Projects	Amount (USDm)	Amount (MXNm)
Land-Use	Agriculture	406	119.9	254.4
Water	Treatment	1	1.1	26.2
Energy	Bioenergy	32	4.5	103.6
Energy	Solar	8	1.3	29.2
Energy	Transmission	3	2.3	53.2
Energy	Storage	5	1.6	37.7

FIRA has consistently reported its green bond impact metrics (tCO_2e) with clear calculation methodology and published its practices publicly on the IDB Green Bond Transparency Platform (GBTP) for its Fondo Especial para Financiamientos Agropecuarios (FEFA) FEFA 18V (ISIN MX95FE040186), FEFA 19V (ISIN MX95FE0401J4) and FEFA20V (ISIN MX95FE0401P1) bonds.

FIRA reported on its MXN3bn (USD131mn) green bond, FEFA 20V issued in 2020, via the GBTP from 2021 to 2023. The dedicated GBTP User Support Team provided bilateral sessions to guide issuer disclosure of its impact metrics and annual disbursements.

Main types of projects funded:

- Sustainable agriculture: protected agriculture, greenhouses, conservation tillage, macro tunnel and shade production (coffee) projects.
- Efficient use of water: efficient boilers, cogeneration of energy equipment, LED luminaires, cooling system modernization and efficient pumping systems projects, water purification equipment project.
- Renewable energy: biodigesters, solar energy equipment, and solar thermal systems projects.

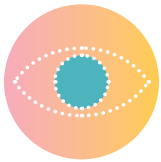
Annual estimates of the environmental impacts of the projects:

- Water savings: 64.29 mill. m^3
- Reduced emissions: 6,309.39 tCO_2e
- Energy saved: 9,702.67 MWh & 13,543,527.89 MJ
- Additional renewable energy capacity installed: 732.69 MWh & 15,611,653.28 MJ

Impact of the GBTP

The GBTP has facilitated FIRA's accountability for use of proceeds and project impacts, through the provision of detailed reports on fund allocation and outcomes. This transparency enhances investor and donor trust, encourages further investment in green bonds, and the mobilisation of resources to support the development of key sectors while also allowing the comparison of different green bond projects and methodologies. The use of standardised methodologies and transparent reporting platforms, as demonstrated by FIRA's agricultural green bond, is crucial for the ongoing development of the green bond market. These tools facilitate comparability for investors, enhance transparency and accountability, and incentivise further issuance. By promoting best practices and supporting policy goals, they ensure that green bonds genuinely contribute to their stated objectives.

Outlook and recommendations

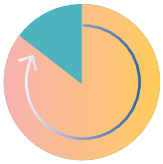


This section summarises where the GSS bond market is and what is likely to lie ahead in terms of reporting. It also includes a practical list of best-practice recommendations to improve and standardise the quality of reporting. This can help a range of market participants in their own activities and enhance existing guidance.

A standardised market with clear reporting guidelines has many potential benefits which include assisting issuers with their reporting requirements, guiding issuers on how to meet investor needs, managing and informing investor expectations, and facilitating the on-going development of a credible, robust and long-standing investment landscape.

Additionally, disclosure is relevant because, among many other benefits some of which have already been mentioned, it allows for greater consistency, completeness and comparability of information, while enabling more objective auditing practices.

Reporting could still be improved



High-quality reporting provides clarity around the allocations, impacts, and entity-level linkages of GSS bonds while ensuring project-level transparency and consideration of potential negative impacts.

This study found evidence of better post-issuance reporting than in previous studies. For example, more issuers were using reporting frameworks (namely ICMA harmonised frameworks), listing reports in easy-to-find places, providing project-level disclosure, explaining methodologies and referencing data sources used to assess impacts, and framing their GSS bond issuance within entity-level strategies and targets.

There is still ample room for improvement in almost all areas. Areas requiring most improvement include more clarity of disclosure in general, more information about lifetimes of projects/impacts and methodologies/baselines for several impact indicators, and quantitatively linking projects/impacts financed by GSS bonds and entity-level targets (i.e., GSS bonds as supporting the implementation of transition plans).

Standardisation of disclosure approaches is essential to enable comparability between projects and issuers. This is important for the market's continued development and increased transparency, which despite clear advances in recent years requires significant improvement.

Increasing the quality and standardisation of reporting

The goals of higher quality and standardisation of GSS bond reporting are interlinked and can be achieved by the following:

- **Increased application of guidance and introduction of regulation.**
- **An official reporting platform to facilitate reporting and data access.**

Increasing the use of guidance, and potential for regulation

Recognised since the earlier stages of the GSS bond market, guidance clarifying issuance processes and disclosures is vital to building transparency and trust. For many years, the ICMA principles, which are followed by virtually all issuers, have been instrumental in providing this.

ICMA harmonised frameworks, which focus on reporting, provide influential global guidance but seem to be used far less than the more generic principles, resulting in fewer standardised disclosures post- versus pre-issuance. Increased use of existing frameworks and standards is essential to support both the quality and harmonisation of reporting.

To date, most jurisdictions have stopped short of introducing mandatory regulatory reporting. There are many examples where reporting is suggested and strongly encouraged, some of which borrow from ICMA principles, e.g., China's Green Bond Principles and the EU GBS also set reporting requirements, but this remains voluntary and implementation challenges persist.

Climate Bonds supports the introduction of mandatory rules in principle but recognises the need for reporting to be as practical as possible. When executed skilfully, the stick of regulation can be an effective driver of high-quality and harmonised disclosures.

Evolution and integration of entity-level standards

Sustainability disclosure at the entity level has evolved considerably over recent years, with consolidation of voluntary standards through the International Sustainability Standards Board (ISSB), the increased interoperability of Global Reporting Initiative (GRI), and much more guidance focused on transition, including from Climate Bonds.

Of note are the many benefits of the ISSB's IFRS S1 and S2 standards:

- Such standards allow decision-makers to use comparable, standardised, consistent, and complete information on sustainability and climate-related risks and opportunities.
- These standards are cost effective because they enable companies to communicate globally comparable, comprehensive information about sustainability-related risks and opportunities to investors.
- The standards are interoperable: they can operate based on Integrated Reporting, SASB, CDSB, and TCFD standards.
- Another remarkable feature for the standards is that they can be adapted to meet jurisdiction-specific requirements. In fact, IFRS S1 applies TCFD structure to set out core content areas.
- Finally, the standards come with a taxonomy designed to be used as a global baseline, from which jurisdictions can develop and evolve, facilitating digital comparability.

Regulators could align to these standards to ease the transition toward standardised, common practices for disclosure, which in turn could provide information to investors, facilitating a key objective: valuation, and auditing for the purposes of financial instruments.

The EU's CSRD and SFDR underpinned by the ESRS and EU Taxonomy, represent significant progress in this respect, which have stimulated developments in other regions such as the UK and USA. The abundance of taxonomies and regulation linked to them is another testament to this trend.

Greater interoperability and harmonisation between instrument- and entity- level frameworks/standards would provide more clarity to investors. This should be encouraged by rule-setters (e.g., market associations, regulators, stock exchanges, lenders) to promote qualitative and quantitative links between GSS bond and entity-level reporting. Illustrating a clear connection between the allocation of proceeds (i.e., to assets/projects) via GSS deals and the entity level transition plan and targets (i.e., both qualitative and quantitative links) is deemed to be very constructive. Complementing this, impact data can be linked to entity-level targets using related impact indicators.[57] For example, the Sector Criteria under the Climate Bonds Standard apply to both projects and entities.

Addressing regional challenges: Amazonia bonds

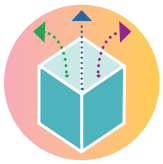
GSS bonds present an opportunity to align investments with regional needs that may not be easily identifiable by investors. This alignment is crucial for addressing financing gaps and directing and mobilising financing towards regions facing pressing challenges related to climate change, biodiversity conservation, human rights, and local communities.

In this context, Amazonia Bonds, emerge as a sub-label of GSS bonds providing an innovative financial instrument aiming at financing investments in projects that support the transition to net-zero deforestation and help improve livelihoods for the local population.

The IDB and World Bank are developing Amazonia Bonds Investment Guidelines (Guidelines), which are expected to be published by Q2 2025.[58] The Guidelines build on the ICMA Principles and comprise a set of recommendations for project selection and evaluation, measures to mitigate environmental and social risks, and relevant impact reporting metrics, providing standardization of Amazonia Bonds in the sustainable bond market. Amazonia Bonds are issued under frameworks aligned with the Guidelines.

Proceeds raised through the issuance of Amazonia Bonds are earmarked for environmental and social activities while preserving the ecosystem of the Amazon. Examples of eligible investments are education, urban infrastructure, agroforestry, nature-based solutions, and biodiversity restoration. The impact of Amazonia Bonds that follow the Guidelines will be measured by KPIs specific to Amazonia. Reporting transparently are encouraged, following adequate standards to enhance credibility of the Amazonia Bonds.

Recommendations for reporting and the broader market



Climate Bonds has summarised a list of recommendations for high-quality GSS bond post-issuance reporting, several of which have been mentioned or implied in previous sections. The recommendations are aligned with and add to existing guidance, namely the ICMA harmonised frameworks, Climate Bonds Standard, and EU GBS.

While not all the recommendations below are (currently) required by the Climate Bonds Standard some, such as entity-level linkage, are intended to guide issuers as to what would be recommended should it be included as a feature of reporting.

Compliance officers can use the recommendations directly. While full implementation may not be feasible, inclusion of the more important aspects should result in high-quality reporting.

Many other market participants can use the recommendations adapted to their respective contexts. These include investors as part of their bond or issuer assessments and own reporting processes; standard-setters such as guidance providers and regulators in setting and updating their guidance and rules; stock exchanges and lenders, including MDBs, as part of their reporting requirements for issuers and borrowers; external reviewers in their assessment methodologies; data providers in their product development; advisors and consultants in their support to issuers or others, etc. For example, SGX Group, via the SGX Sustainable Fixed Income initiative, recognises GSS bonds that meet recognised standards. To qualify and maintain recognition under the initiative, issuers must publish any post-issuance report required under the applicable standard.[59] The implementation of high-quality reporting can be further supported through templates embodying the recommendations or requirements.

Recommendations for high-quality GSS bond reporting

Aspect of disclosure	Recommendation(s)
Defining reporting at pre-issuance stage	Commit to post-issuance reporting and clarify this in pre-issuance documents (e.g., GSS bond frameworks). If there are multiple frameworks, clarify which applies to each bond. Disclose the expected location of reports (e.g., website pages/ sections, or other), their scope (allocations and/or impacts), frequency including start and end dates (where possible), external reviews, and ideally the level of project granularity. Link GSS bond issuance with entity-level activities/ strategies/targets.
Frequency and timings	Report annually, including within 365 days of issuance. Be clear about report publishing dates and the reporting period. If reporting will not occur within 365 days of issuance, release a statement clarifying this for transparency, and include when reporting can be expected. Report until at least full allocation , and in the case of any material developments thereafter. If impacts materialise after reporting ceases, enough information should be provided on lifetime impacts of relevant projects where available. If allocations are known and disclosed pre-issuance, a post-issuance confirmation should at least be provided. If other relevant aspects of post-issuance disclosure
Accessibility	Make disclosure easy to find, ideally on the issuer's website. Include all relevant documentation in a single page entitled 'sustainable finance' or similar. Build a historical list of documents ordered by topic and/or chronologically (ideally both). In each period, include all relevant disclosure (e.g., cover all bonds, project identification, allocation/impact data, entity-level linkages, assurance statement, etc.) in a single report. Alternatively, in multiple documents and/or webpages, but ensure these are clearly labelled and easily available through the main sustainable finance page.
Format	Publish dedicated GSS+ bond reports or identify relevant information clearly in broader entity-level documents (annual or sustainability reports being the most logical). Provide downloadable data files (e.g., Excel). Report in machine-readable format.
Structure/layout	Reports do not have to be long, but rather include all the relevant information with clarity. Provide clearly labelled contents so that reports are easy to follow. Include tables and other visual aids. Follow examples of best practice for guidance.
Scope	For best practice, report allocations and impacts along with other recommended disclosures in existing guidance (including those listed in this table).
Reporting frameworks/ standards	Report in line with an existing GSS bond reporting framework, namely the ICMA harmonised frameworks for green and social bond reporting, NPSI Position Paper on Green Bond Impact Reporting, Climate Bonds Standard, or EU GBS. Confirm their use post-issuance.
Bond identification	Clearly state the bond scope of reports (typically outstanding or yet-to-be fully allocated bonds in a given year). Identify the relevant bonds through details, including an identifier (e.g., ISIN), amount issued, and issue/maturity dates. Repeat issuers can use timelines to visually clarify their issuance and reporting over time.
Allocation of proceeds	State the total share (%) of proceeds allocated explicitly (ideally per bond for repeat issuers). Aim to allocate proceeds within the first two years, and ideally within one year. If refinancing assets/expenditures, disclose the lookback period and approach. For enhanced transparency, provide the refinanced share, ideally per bond and project if relevant.
Cumulative/ historical data	Where relevant, provide cumulative alongside annual data (especially for allocations) for transparency and to avoid multiple reports having to be checked. This approach also helps to clarify data restatements or changes in methodology. Disclosing cumulative impacts is also helpful although generally less important than allocations.
Bond-level data	Repeat issuers reporting for multiple bonds: provide bond-level data (i.e., bond specific identification) where possible, or clarify that proceeds are used from a combined pool indicating that programme-level results should be prorated by amount issued .
Project-level disclosure	Provide project-level disclosure (identification + allocation/impact data) where possible, or explain why this is not provided and disclose at project-category level. If viable and relevant, provide summaries aggregating project data by category and for the overall bond/programme. Provide qualitative information about the features and impacts of projects. Where relevant, disclose expected project lifetimes and stages. This is especially important for context and comprehensive impact reporting. To avoid double counting, disclose proceeds used to invest in or subscribe to other GSS bonds. Bonuses: • Provide contributions to SDGs. • Disclose number of projects by region/location and project categories, especially if there are numerous projects • Include the project's total cost/funding if different from the allocation from GSS bonds.
Taxonomy alignment/ eligibility	It is increasingly good practice to assess and ideally select projects against relevant science-based taxonomies. Disclose links with taxonomies and the share of eligible/aligned projects. If only indicative assessments are possible (e.g., versus the proposed EU Social Taxonomy), they are also useful.

Recommendations for high-quality GSS bond reporting

Aspect of disclosure	Recommendation(s)
Impact attribution	Report the impact attributable to each GSS bond. Where relevant, disclosing both the attributable and total impact for each project is the best scenario.
Impact methodology	Explain methodologies for impact assessment, including the use of external methodologies, baseline descriptions and values, data sources, ex-ante vs. ex-post and measured vs. estimated. Where possible, use common/well-known external methodologies relevant to each impact indicator/project category. Disclose external data sources used, e.g., for emission factors used as baselines. Baselines: describe baselines and their value. Where feasible, keep baselines the same across impact indicators/projects. If reporting changes versus a baseline, include the absolute figures (both the actual and baseline performance). This includes for GHG avoided, where it should additionally not be assumed that emissions are zero just because the project is low-carbon.
Impact indicators	Use impact indicators that reflect the material impacts of projects. Use core impact indicators from ICMA harmonised frameworks where possible, as they are widely used and can be more easily aggregated across projects/issuers – if not used, clarify why. Non-core impact indicators can be used when relevant, including impact indicators not currently listed in the harmonised frameworks. Along with disclosing methodologies, be accurate with impact indicator terminology/descriptions and use similar terminology where applicable. Clarify the projects that each impact indicator applies to. Units: provide core/standard units for each impact indicator. Provide at least total figures, ideally accompanied by production-based intensities and intensities per unit of investment. Only include equivalencies (e.g., equivalent number of trees planted, number of cars taken off the road) as a bonus, i.e., never replacing the need for core units.
Lifetime impacts	Provide expected lifetime impacts of projects where available. Link this with the information on project lifetimes/stages and clarify the extrapolation of annual impacts.
Adverse impacts	Assess and disclose material adverse impacts as well as attempts to mitigate these. Clarify relevant methodologies and the link with DNSH assessments (e.g., as part of the EU Taxonomy).
Entity-level linkage	Describe how GSS issuance fits within entity-level activities, strategies, and targets. To the extent this exists, it should ideally be included in pre-issuance frameworks, with post-issuance reports reaffirming the links and providing an update if needed. Quantitative links can more often be disclosed post-issuance, i.e., once allocations and impacts are confirmed. Disclose the key entity-level activities and targets supported by the projects/assets financed by GSS bonds. Provide qualitative and quantitative links between the two dimensions regarding both sustainability performance and financing needs (recognising that sustainability-related investments do not only need to be financed through GSS bonds, issuers could also clarify this point). For example,: • The UoP addresses the decarbonisation levers identified in the transition plan (e.g., energy efficiency). • The projects financed by GSS bonds in 2023 resulted in a 10% and 15% reduction in entity-level GHG emissions and GHG emissions intensity respectively, which represent 20% of the 2027 target set in 2022. • GSS bond issuance represented 20% of overall capex and 80% of green capex in 2023, with targets to increase this to 50% and 100% within three years. Transition plan targets should be benchmarked against recognised (sectoral) transition pathways (e.g., Climate Bonds, SBTi, TPI, IEA). Further to this the instrument level impact indicators should also reference the same pathway demonstrating a link between instrument- and entity-level impact indicators. Targets and transition plans should be externally reviewed (e.g., Certified by Climate Bonds, SBTi validated targets, assessed against TPI or ACT, etc.). Providing a short statement clarifying which entity-level standards/frameworks/regulations are followed (e.g., ISSB, GRI, CDP, EU CSRD/ESRS). Climate Bonds Certification does not require entity-level linkage for UoP instruments, however under the Climate Bonds Entity Certification the transition financing plan/strategies published by the entity are required to disclose the source of funding for key investments, creating an identifiable link between the financing and the entity.
Holistic transitions	To build resilience, issuers focused on climate-related and social projects could use and disclose the allocation of a portion of proceeds for 'less frequently cited' impacts/objectives such as biodiversity, circular economy, A&R, and just transition, as well as R&D.
External reviews	Obtain external reviews, preferably assurance or Climate Bonds Certification. In the case of assurance, the best scenario is reasonable assurance of both allocation and impact data. Acknowledging that the time taken to achieve this in complex cases is often onerous and, as noted previously, impact reports are not deemed necessary for all types of projects.
Contact details	Provide relevant contact details, e.g., Investor Relations email and phone.

Impact data aggregation

Preferably, the same methodological approach and data sources would be used across issuers for a given impact indicator, with the data reliably aggregated. While not currently feasible, Climate Bonds view that the aggregation of data is possible if the methodology for assessing performance is sound, which most seem to be when disclosed. This makes it crucial for issuers to clarify the methodologies and data sources used. Where possible, they should be widely used for their respective impact indicators/project types.

Global reporting platform would be a transformative breakthrough

Providing high-quality disclosure is often perceived as increasing complexity and resources spent on reporting. Issuers often cite challenges in knowing what and how to report, as well as gathering the data. This impacts first-time issuers and/or those financing many different projects that require coordination across several departments, which is particularly relevant for governments.[60] Yet reporting does not have to be that onerous.

Facilitating reporting and data use

Reporting platforms can greatly simplify the reporting process by standardising disclosure templates and clarifying the necessary and/or recommended data points; reducing compliance to data collection and entry. Templates should be based on existing guidance/standards.

As an official primary reporting tool (i.e., used directly by issuers for data input and reporting) this would provide high-quality disclosures that could eventually replace the need for issuers to spend resources producing their own reports. Support could be provided via the platform, for example from dedicated support teams or even other issuers using the platform.

In addition to facilitating issuer reporting, data use would be greatly enhanced through centralised access to reports under a common format and with harmonised data, to the greatest extent possible. Public access to the platform's data could be provided with paid add-ons and integrated with other providers, such as CDP, stock exchanges, etc.

Fragmented reporting platforms are very unlikely to work well unless they fully cover a particular geography. The ideal would be a globally endorsed platform used by the whole market, which is the principle behind the IDB's Green Bond Transparency Platform (GBTP).[61]

Green Bond Transparency Platform

IDB's innovative public solution was developed to cover LAC green and sustainable bonds issues promoting harmonisation and standardisation of these instrument's UoP and environmental impact reporting to increase investor confidence, contributing to attracting quality and long-term green investments to the region.

The GBTP facilitates free and first-hand granular, credible, and comparable data for evidence-based decisions, aligned to international standards set by Climate Bonds and ICMA, for example. Since its launch in April 2021, more than 100 issuers have reported on the platform covering approximately 230 issues.

In 2023, a joint declaration announced at the Finance in Common Summit (FICS) put forth the shared vision of four multilateral and bilateral development institutions to increase transparency, improve data quality and the application of best practice standards in the green and sustainable bond market, and to work collaboratively on the globalisation of the platform.[62]

In accordance with the IDB's efforts around the GBTP, Climate Bonds appeals to key global players such as multilateral and bi-lateral development institutions and other key global players in the sustainable investment environment to consider endorsing, funding, and promulgating a global transparency platform based on primary disclosure, at least for GSS bonds.

Suitability of GSS bond versus entity-level reporting

Being tied to specific projects/assets with well-defined data points and (usually) quantitative impact indicators, GSS bond reporting does not present the same complexities of entity-level sustainability reporting. This makes it well-placed to benefit from an effective reporting platform soon, which can be supported by the work of the **Future of Sustainable Data Alliance**, among other initiatives.

In parallel, and building on **CDP's** framework and experience, efforts should be made to develop a broader sustainability, and potentially financial, reporting platform which would house entity-level disclosures while possibly integrating instrument-level ones.

Government-led, the EU's **European Single Access Point (ESAP)** seems to be the most promising example of this vision, at least in terms of enabling centralised data access to all corporate disclosures. However, it will not be ready until 2027, and details of its scope and approach are still unclear.

Announced more recently and focused on geographies with sizeable development gaps, the **Impact Disclosure Taskforce**, which is led by a group of financial institutions and co-chaired by the J.P. Morgan Development Finance Institution and Natixis, has the objective of harmonising disclosures and creating a data utility to house data.

Exchanges also have their own platforms to support listed companies in the management and disclosure of entity-level data, for example SGX Group's SGXNet platform and the more recently launched ESGenome, a joint initiative between SGX Group and the Monetary Authority of Singapore (MAS), a digital portal to facilitate sustainability reporting for SGX-listed companies.[63,64]

The **Net-Zero Data Public Utility (NZDPU)** and Climate Arc's **TransitionArc** tool are other examples of centralised access to sustainability-related disclosures, although they are not used directly by issuers for reporting.

Transparency builds trust

While reporting is recognised as a crucial milestone to achieving a transparent, credible, and standardised sustainable finance market, it needs to be linked to stronger action and incentives at market and policy level. Climate Bonds has compiled a list of many policies that can be implemented to support and drive the global transition.[65]

Information is vital for markets to function healthily, facilitated and harmonised as a whole through effective guidance, rules, and tools. Reporting can be the enabler that unlocks the transition by providing the transparency it requires. Climate Bonds calls on all market participants to support this agenda and assist in turning it into a reality.

Appendix

Issuer sample

Issuer type	Issuer	Domicile	Theme*	Aligned amount issued (USDbn) 2020-2023
Development Bank	African Development Bank (AfDB)	Supranational	Green, Social	6.2
	Agence Francaise de Développement	France	Green, Sustainability	15.2
	Asian Development Bank (ADB)	Supranational	Social, Sustainability	16.5
	Asian Infrastructure Investment Bank (AIIB)	Supranational	Sustainability	19.8
	China Development Bank	China	Green, Social	25.2
	Council of Europe Development Bank	Supranational	Social	7.2
	European Investment Bank (EIB)	Supranational	Green, Sustainability	61.4
	European Bank for Reconstruction & Development (EBRD)	Supranational	Green, Social	8.6
	Export-Import Bank of Korea	South Korea	Green, Social	5.9
	IBRD	Supranational	Green, Sustainability	153.2
	IFC	Supranational	Green, Social	8.2
	Inter-American Development Bank Group	Supranational	Social, Sustainability	18.7
	International Finance Facility for Immunisation	Supranational	Social	2.0
	KfW	Germany	Green	52.5
	Landwirtschaftliche Rentenbank	Germany	Green	6.1
Financial Corporate	Bank of America Corp	USA	Green, Social, Sustainability	8.1
	Bank of China	China	Green, Social, Sustainability	36.0
	CaixaBank SA	Spain	Green, Social	10.9
	Citigroup	USA	Green, Social	9.5
	Crédit Agricole Group	France	Green, Social	7.1
	Helaba	Germany	Green	9.7
	ICBC	China	Green	19.1
	Intesa Sanpaolo SpA	Italy	Green, Social	11.3
	Kookmin Bank	South Korea	Social, Sustainability	4.8
	Nordea Bank	Finland	Green	10.4
	Sinbo Securitization Specialty Co Ltd	South Korea	Green, Social	7.4
Government -backed Entity	Action Logement Services	France	Sustainability	7.0
	Bancomext	Mexico	Sustainability	2.0
	Caisse d'Amortissement de la Dette Sociale (CADES)	France	Social	130.6
	China Three Gorges Corporation	China	Green	14.8
	Comisión Federal de Electricidad	Mexico	Green, Social, Sustainability	4.2
	European Union	Supranational	Green, Social	167.8
	Fannie Mae	USA	Green, Social	53.5
	Freddie Mac	USA	Green, Social, Sustainability	29.9
	Korea Housing Finance Corp	South Korea	Social	40.2
	Nederlandse Waterschapsbank NV	Netherlands	Social	10.9
	Unédic	France	Social	38.2

Issuer sample

Issuer type	Issuer	Domicile	Theme*	Aligned amount issued (USDbn) 2020-2023
Local Government 	Autonomous Community of Madrid Spain	Spain	Green, Sustainability	7.5
	Basque Government	Spain	Sustainability	4.0
	City of Gothenburg	Sweden	Green	2.0
	CSCDA Community Improvement Authority	USA	Social	4.2
	Ministeries Van de Vlaamse Gemeenschap	Belgium	Sustainability	4.3
	New York City Housing Development Corporation	USA	Green, Sustainability	4.6
	North Rhine-Westphalia Germany	Germany	Sustainability	12.9
	Province of Ontario	Canada	Green	6.8
	Province of Quebec	Canada	Green	2.2
	Queensland Treasury Corporation	Australia	Green	5.4
	Region Wallonne Belgium	Belgium	Green, Social, Sustainability	5.2
	San Francisco Public Utilities	USA	Green	2.9
	Treasury Corp of Victoria	Australia	Sustainability	1.9
Non-Financial Corporate 	Alphabet Inc	USA	Sustainability	5.8
	EDP	Portugal	Green	11.4
	FUJIFILM Holdings Corp	Japan	Social	0.9
	Iberdrola SA	USA	Green	13.0
	Motability Operations Group PLC	UK	Social	1.8
	NEOM Green Hydrogen Company	Saudi Arabia	Green	6.1
	Pfizer Inc	USA	Sustainability	2.3
	Renew Power	India	Green	9.6
	Southern California Edison Co	USA	Green, Sustainability	2.9
	Toyota Motor Corp	Brazil	Green, Sustainability	7.8
	Volkswagen	Netherlands	Green	12.6
	Vonovia SE	Germany	Green, Social	5.2
Not-for-Profit	Ford Foundation	USA	Social	1.0
Sovereign 	Arab Republic of Egypt	Egypt	Green, Sustainability	1.2
	Dutch State Treasury Agency	Netherlands	Green	15.9
	Federal Republic of Germany	Germany	Green	62.5
	Government of Ghana	Ghana	Green	0.04
	Hong Kong Special Administrative Region Government	Hong Kong	Green	23.2
	Hungary	Hungary	Green	5.1
	Mexico Government	Mexico	Sustainability	13.6
	Republic of Chile	Chile	Green, Social, Sustainability	33.9
	Republic of India	India	Green	3.1
	Republic of Indonesia	Indonesia	Green, Sustainability	7.1
	Kingdom of Thailand	Thailand	Sustainability	12.3
	United Kingdom	UK	Green	56.2

*Only includes bonds issued between 2020-2023. Darker shading = higher amount.

Impact indicator analysis

Methodology: hybrid between ICM A and raw impact indicators

The 717 raw impact indicators collected from issuer disclosure were too numerous to feasibly present in charts/tables. To enable an understanding of the results, given that raw impact indicators often refer to the same impact indicator but using different terminology, the raw list was consolidated/mapped into a shorter set of 237 final impact indicators which are shown by project category in the table below.

The full list of raw impact indicators and mapping to final impact indicators is available in a separate Excel file. Readers are recommended to check this to gain a better understanding of the terminology used in the market.

To support market development, the set of final impact indicators was based on ICMA harmonised frameworks for green and social bond impact reporting where possible. As previously discussed, there is a degree of subjectivity, and the mapping was done on a best-efforts basis, more often against core rather than recommended impact indicators in the harmonised frameworks. In several cases, raw impact indicators could not be clearly mapped, and in a few cases the terminology reported by issuers was edited for clarity. Several final impact indicators were therefore not from the harmonised frameworks but could be added in future updates.

Classification against Climate Bonds project categories

Impact indicators were classified against the project categories in Climate Bonds' Green and Social & Sustainability Bond Databases.[66,67] This reflected the main objective/benefit of the project. For example, renewable energy and water projects reporting the number of people/households benefitted were still categorised under energy and water. However, in some cases this was not clear since issuers may not specify impact indicators by category and there was considerable overlap between project categories/objectives, especially for social projects. For example, access to off-grid solar energy could fall under either energy or affordable infrastructure, affordable financial products for students could fall under microfinance or education, etc. Attempts were nevertheless made to categorise under the category considered most relevant. Finally, if it was not clear which category an impact indicator related to, which was relatively rare, an unspecified category was used.

Results

The table below shows the set of (final) impact indicators ordered by the number of issuers that reported them for each project category. The amount issued column reflects the total amount issued of the issuers reporting each impact indicator, with darker shading corresponding to higher amounts.[68] Where the meaning of impact indicators was not clear, this was due to a lack of further information provided: Climate Bonds always attempted to clarify the meaning but only based on the issuer's disclosure (i.e., not making assumptions).

Range of Impact Indicators used in each category

Theme	Project category	Impact indicator (final)	Number of issuers	Amount issued (USDbn)
Green	**Energy**	Additional capacity of renewable energy plant(s) constructed or rehabilitated	31	610.1
		GHG emissions avoided/reduced/saved	31	427.0
		Renewable energy generation	25	286.1
		CO_2 emissions avoided/reduced/saved	9	99.0
		Energy savings	7	73.3
		Number of projects supported	5	50.7
		Additional capacity of renewable energy plant(s) to be served by transmission systems	3	23.8
		SO_2 emissions reduced	2	35.8
		NOx emissions reduced	2	35.8
		Number of jobs created/preserved	2	55.8
		Solar hot water units installed	1	1.9
		Production of bioethanol equivalent	1	51.5
		Installed capacity of home batteries	1	1.9
		Length of transmission lines constructed/maintained/supported	1	34.8
		Renewable heat produced	1	34.8
		Materials saved	1	3.2
		Subsidised power capacity	1	15.9
		Dust reduction	1	13.5
		Number of young people trained	1	3.2
		Air pollutants emissions avoided	1	7.1
		GHG emissions	1	34.8
		Energy storage created	1	2.1
		Additional capacity of renewable heat	1	34.8
		Number of schools supported with renewable energy	1	5.4
		Standard-coal avoided/reduced/saved	1	22.2
		Number of social housing units receiving solar panels	1	10.9
		Water withdrawal avoided	1	7.1
		Number of solar panels installed	1	1.9
		Number of wind turbines operational	1	0.1
	Buildings	Energy use reduced/avoided	21	310.7
		GHG emissions avoided/reduced/saved	18	310.4
		Number/area of buildings meeting certification	5	39.0
		Energy use	4	38.9
		Number/area of buildings meeting certification (by level)	4	32.3
		Number of people/households benefitted	3	62.9
		CO_2 emissions avoided/reduced/saved	3	5.3
		GHG emissions	3	45.8
		Water use reduced/avoided	3	55.3
		Number of smart meters installed	2	86.3
		Number of jobs created/preserved/supported	2	108.7

Range of Impact Indicators used in each category

Theme	Project category	Impact indicator (final)	Number of issuers	Amount issued (USDbn)
Green	**Buildings**	District heating delivered	1	1.4
		Number of subsidies granted	1	1.7
		Number of projects supported	1	5.1
		Building area with LED lights	1	0.8
		Building area renovated/constructed	1	51.5
		Number of LED streetlights installed/converted	1	2.1
		Number of buildings with transit-oriented development	1	10.7
		Value of household bill savings	1	56.2
		Heat use subsidised	1	56.2
		Area of green buildings	1	3.1
		Number of buildings with efficiency improvements	1	10.7
	Transport	GHG emissions avoided/reduced/saved	23	370.6
		Number of passengers/trips/passenger kms completed/supported	16	137.1
		Number of EV charging stations installed	10	313.7
		Length of railtrack/BRT/tramway system constructed/upgraded/maintained	10	164.4
		Number of EVs manufactured/deployed/acquired/subsidised/supported	9	212.2
		Area/length of bicycle paths/pedestrian walkways constructed/maintained	6	87.9
		Number of trains/electric buses/trams in service/constructed/rehabilitated	6	114.6
		CO_2 emissions avoided/reduced/saved	6	73.1
		Number of train/bus stations/crossings/bridges constructed/upgraded/maintained	5	46.4
		GHG emissions	4	51.8
		Passenger capacity/number of seats installed	3	49.9
		Air pollutant (PM) emissions avoided/reduced	3	120.3
		Length of metro constructed/upgraded/maintained	2	31.4
		Volume of cargo handled	2	69.7
		Number/% of people using bicycle/number of bicycle trips completed	2	10.8
		Number of people/households benefitted	2	20.9
		NOx emissions reduced	2	108.7
		Air pollutant emissions avoided/reduced	2	8.7
		Number of bicycle parking spaces/pedestrian tunnels/connections constructed/maintained	2	53.7
		Reduction in travel time	1	0.8
		Number of vehicles shifted to EVs	1	5.4
		Energy savings	1	1.4
		Number of buses replaced	1	11.6
		Noise pollution reduction	1	62.5
		CO_2 emissions intensity improvement vs. average vehicle	1	5.6
		Water withdrawal avoided	1	7.1
		Distance travelled per passenger	1	3.2
		Length of transport infrastructure built (unspecified)	1	34.8
		Number of jobs created/preserved/supported	1	2.2

Range of Impact Indicators used in each category

Theme	Project category	Impact indicator (final)	Number of issuers	Amount issued (USDbn)
Green	Transport	Number of vehicles with tax exemptions	1	5.1
		Length of cycle paths constructed/rehabilitated	1	62.5
		Gasoline use avoided/reduced	1	5.6
		Energy intensity	1	3.2
		Air pollutant (NMVOC) emissions avoided/reduced	1	52.5
		Number of projects supported	1	15.9
		Number of biogas refuelling stations constructed	1	51.5
		Number of second-hand EVs for auction	1	5.4
	Water	Volume of wastewater treated/reused/avoided	10	116.5
		Number of people/households benefitted/served	9	87.2
		Water savings	6	36.6
		Volume of water treated/supplied/stored/recycled	5	14.6
		Water/wastewater treatment/storage capacity added	5	65.5
		Length of water/sewage pipeline constructed/maintained	4	31.6
		Volume of drinking water produced/stored	2	18.1
		GHG emissions avoided/reduced/saved	2	35.6
		Number of water studies/inspections completed	2	23.1
		Water service area	2	15.8
		Number of jobs created/preserved	1	0.8
		Volume of storm water removed	1	2.9
		Volume of increased water consumption/connection	1	0.8
		GHG emissions	1	34.8
		Number of animals benefitted	1	12.9
		Energy generated from sludge treatment	1	0.8
		Energy use reduced/avoided	1	24.3
		Hydrometeorological network stations operational	1	11.6
		Volume of sludge treated	1	4.0
		Increase in sewage pipe diameter	1	23.2
		Nitrogen emissions reduction	1	1.4
		Pollutants and sludge collected	1	0.8
		Water runoff area managed	1	2.9
		Polluted water reduction	1	0.8
		Pollution prevention (NH_3-N, COD)	1	9.1
		Number of projects supported	1	5.1
		Agricultural area benefitted	1	12.3
		Number of water meters installed	1	2.5
	Waste	GHG emissions avoided/reduced/saved	5	119.7
		Volume of waste prevented/minimised/reused/recycled	4	16.1
		Volume of waste treated/composted/collected/separated/disposed	4	17.4
		Electricity generated from waste	3	32.8
		Number of waste treatment facilities created/funded	2	54.7

Range of Impact Indicators used in each category

Theme	Project category	Impact indicator (final)	Number of issuers	Amount issued (USDbn)
Green	Waste	Number of people/households benefitted/served	2	13.9
		Volume of food waste prevented	1	5.8
		Energy use reduced/avoided	1	1.4
		GHG emissions	1	34.8
		Number of waste monitoring campaigns	1	3.2
		CO_2 emissions avoided/reduced/saved	1	1.1
		Number of data samples collected	1	2.5
	Land use	Area protected/conserved/managed	13	320.7
		Number of training participants/programmes supported	3	62.3
		Number of projects/measures supported/introduced	2	7.5
		Number of trees planted	2	57.0
		Number of air quality/meteorological data samples collected	2	10.1
		Area of land irrigated	2	1.9
		Length of footpaths created/maintained	1	3.2
		GHG emissions avoided/reduced/saved	1	56.2
		CO_2 emissions avoided/reduced/saved	1	1.1
		Number of visitors	1	3.2
		Number of species with improved conservation	1	5.1
		Number of jobs supported	1	56.2
		New green area created	1	6.8
		Number of land management studies conducted	1	3.2
		Number of people/households benefitted/served	1	5.1
		Number of habitats with improved conservation	1	5.1
	Industry	Number of batteries manufactured	3	74.4
		GHG emissions avoided/reduced/saved	3	103.5
		Added capacity of hydrogen production	2	57.6
		GHG emissions	1	34.8
		Volume of hydrogen produced	1	51.5
		Installed manufacturing capacity for low-carbon technologies (various)	1	34.8
	ICT	Power usage effectiveness/increase in effectiveness	2	11.5
		Number of projects to improve digital infrastructure	1	19.8
		GHG emissions	1	34.8
		GHG emissions avoided/reduced/saved	1	34.8
Social	Affordable infrastructure	Number of affordable housing units funded/created	17	152.9
		Number of people/households benefitting from housing access	9	80.3
		Number of people/households benefitting from water/sanitation access	8	86.4
		Number of people/households benefitting from new/improved electricity access	4	121.9
		Beneficiary satisfaction rate	3	32.6
		Number/value of housing loans provided	2	10.1
		Number of people/households benefitting from clean energy access	2	63.2
		Number/value of mortgages provided	2	2.0

Range of Impact Indicators used in each category

Theme	Project category	Impact indicator (final)	Number of issuers	Amount issued (USDbn)
Social	**Affordable infrastructure**	Rent cost savings	2	7.3
		Utility cost savings	2	45.8
		Number of people/households benefitting from telecoms access	2	12.1
		Number of people/households benefitting from transport services	2	100.1
		Share of first-time house buyers	1	1.0
		Number of people/households benefitting from access to natural gas	1	18.7
		Average contribution per beneficiary	1	28.8
		Value of affordable housing units funded/created	1	7.0
		Increase in power supply	1	5.1
		Number of affordable housing units funded/created for vulnerable populations	1	7.0
		Housing maintenance costs	1	10.9
		Length of roads constructed/upgraded/maintained	1	19.8
		Number of projects funded/supported	1	7.0
		Net housing cost ratio	1	10.9
		Number of social tenants at risk of non-payment	1	10.9
		Air conditioners installed for low-income households	1	1.9
		Number of subsidised trips provided	1	5.0
		Number of telecoms structures in rural areas	1	5.0
	Equality	Number/value of loans/investments in minority-/women-owned businesses	8	45.4
		Number of people/households benefitted	7	62.2
		Number of organisations/centres/initiatives for social inclusion/care benefitted	6	15.3
		Number/value of loans to women/vulnerable groups	4	26.5
		Number/value of loans to businesses supporting target groups	2	3.3
		Value of funding for families with children	2	6.4
		Number of jobs created/preserved (in target groups)	2	3.3
		Number/value of loans to medical professionals in minority communities	2	7.0
		Number of gender-related actions	1	19.8
		Number of vehicles provided with no advance payment	1	1.8
		Number of social support visits	1	1.1
		Number of days declared	1	1.1
		Number of women benefitting from economic empowerment initiatives	1	18.7
		Number of gender violence victims supported	1	5.0
		Number of debt mediation services supported	1	1.1
		Impact of loans on target groups (survey)	1	4.6
		Satisfaction score of disabled customers	1	1.8
		Retention rate of disabled customers	1	1.8
		Share of girls in student enrolments	1	14.2
		Average increase in annual income per beneficiary	1	5.4
		Average contribution per beneficiary	1	28.8
		Number of people hired from target groups	1	3.2

Range of Impact Indicators used in each category

Theme	Project category	Impact indicator (final)	Number of issuers	Amount issued (USDbn)
Social	**Healthcare**	Number of patients benefitted	7	188.5
		Number of hospitals/healthcare centres built/supported	5	23.2
		Number of hospital beds funded/provided	3	18.7
		Number/value of loans provided	2	6.7
		Number of patients with rare disease/multiple ailments benefitted	2	8.3
		Number of vaccinations provided	2	132.6
		Number of deaths prevented	1	2.0
		Number of people with access to healthcare	1	14.2
		Number of high-impact medications provided	1	5.0
		Number of projects funded/supported	1	6.9
		Number of prescriptions provided	1	3.2
		Number of healthcare SMEs benefitted	1	5.0
		Healthcare equipment production capacity	1	0.9
		Added capacity of contraceptive services	1	1.3
		Number of COVID tests completed	1	130.6
		Number of jobs created/preserved	1	1.7
	Education	Number of students enrolled/benefitted	11	172.4
		Number of schools/education centres funded/built	5	21.9
		Number of people attending professional training	3	21.2
		Number/value of student loans disbursed	2	6.7
		Number of students with academic reinforcement	1	5.0
		Number of jobs created/preserved	1	1.7
		Number of vulnerable students	1	5.0
		Number of education programmes funded/delivered	1	2.5
		Average contribution per beneficiary	1	28.8
		Number of professional training hours completed	1	1.7
	Employment & Training	Number of jobs created/preserved	10	107.5
		Number of people benefitted	9	171.7
		Employment rate	4	79.2
		Number of pension credits received	1	38.2
		Number of redundancies supported	1	38.2
		Number of employment centres funded/supported	1	1.7
		Number/value of loans provided	1	1.7
		Number of job cases processed	1	1.7
		Jobseekers' level of satisfaction	1	38.2
		Number of job interviews supported	1	1.7
	Microfinance	Number of MSMEs funded/supported	8	66.7
		Number/value of loans provided to SMEs	5	18.7
		Number/value of microloans provided	2	12.1
		Number of people/households benefitted	2	93.0

Range of Impact Indicators used in each category

Theme	Project category	Impact indicator (final)	Number of issuers	Amount issued (USDbn)
Social	Microfinance	Number of businesses benefitted	2	90.6
		Number of jobs created/preserved	1	5.0
		Number/value of loans to businesses supporting females	1	1.7
		Number of people with access to financial services	1	14.2
		Positive impact on businesses (survey)	1	4.6
		Number/value of loans to women	1	7.0
		Number of suppliers to MSMEs supported	1	18.7
		Number of smallholder farms supported through finance	1	7.0
		Number/value of financial products for students	1	1.7
		Number of students giving up without loan	1	1.7
	Food security	Number of farmers funded/benefitted	2	23.7
		Area of farming land	1	5.4
		Number of farms benefitted	1	12.9
		Increase in agricultural/commodity exports	1	5.4
		Increase in farm production	1	5.4
Green / Social	Adaptation & resilience	Area created/managed for protection	4	132.3
		Number of protection measures introduced	4	156.9
		Number of people/households benefitted	4	93.1
		Area of land protected	4	84.4
		Economic value protected	3	15.2
		Economic value of energy/fuel savings	1	86.0
		Number of projects supported/implemented	1	1.6
		Number of plants installed	1	6.8
		Area monitored	1	5.1
		Reduction in water loss	1	5.1
		Number of properties protected	1	56.2
		Length of covered conductor for wildfire prevention	1	2.1
		Number of safe dykes constructed	1	15.9
		New river channel for protection	1	6.8
		Value of loans for relief	1	1.7
		Number of countries institutionalising disaster risk	1	86.0
		Number of jobs created/preserved	1	6.8
	Unspecified	Number of people/households benefitted	3	97.2
		GHG emissions avoided/reduced/saved	3	124.8
		Number of projects funded/supported	2	125.1
		Number of jobs created/preserved	2	5.4
		Number of females benefitted	1	56.2
		Number/value of loans to businesses supporting sustainable customers/suppliers	1	1.7
		Impact on GDP	1	4.6

Range of Impact Indicators used in each category

Theme	Project category	Impact indicator (final)	Number of issuers	Amount issued (USDbn)
Green / Social	Unspecified	CO_2 emissions avoided/reduced/saved	1	14.2
		Value of R&D investment in low-carbon technologies	1	34.8
		Number of patents filed	1	34.8
		Energy savings	1	56.2

NB: Amount issued refers to total amount issued from issuers that reference each impact indicator – not the amount allocated to projects with that impact indicator.
Darker shading = higher amount (per category).

Impact indicator used per project category

Impact indicator category	Number of issuers	Amount issued (USDbn)
Energy	136	1,984.5
Buildings	79	1,295.1
Transport	133	2,381.8
Water	65	595.3
Waste	26	303.4
Land use	34	604.7
Industry	11	356.6
ICT	5	101.0
Affordable infrastructure	69	853.7
Equality	47	278.0
Healthcare	31	548.8
Education	27	267.0
Employment and training	30	479.7
Microfinance	28	342.4
Food security	6	52.8
Adaptation and resilience	31	761.9
Unspecified	17	554.8

NB: Darker shading = higher number of issuers or amount issued.

Endnotes

1. Climate Bonds Initiative, November 2019, Green Bond European Investor Survey 2019. https://www.climatebonds.net/resources/reports/green-bond-european-investor-survey-2019
2. Climate Bonds Initiative, April 2022, Green Bond China Investor Survey 2022. https://www.climatebonds.net/resources/reports/green-bond-china-investor-survey-2022
3. ICMA, June 2022, Green Bond Principles. https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/
4. ICMA, 2023, Social Bond Principles. https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/social-bond-principles-sbp/
5. ICMA, June 2024, Handbook – Harmonised Framework for Impact Reporting. https://www.icmagroup.org/sustainable-finance/impact-reporting/green-projects/
6. ICMA, September 2024, Handbook – Harmonised Framework for Impact Reporting for Social Bonds. https://www.icmagroup.org/sustainable-finance/impact-reporting/social-projects
7. Climate Bonds Initiative, April 2022, Post-Issuance Reporting in China's Green Bond Market 2022. https://www.climatebonds.net/resources/reports/post-issuance-reporting-chinas-green-bond-market-2022
8. ICMA, 2022, Analysis of China's Green Bond Principles. Analysis-of-Chinas-Green-Bond-Principles.pdf (icmagroup.org)
9. EUR-Lex, November 2023, Regulation (EU) 2023/2631 of the European Parliament and of the Council of 22 November 2023 on European Green Bonds and optional disclosures for bonds marketed as environmentally sustainable and for sustainability-linked bonds. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32023R2631
10. Climate Bonds Initiative, 2023, Climate Bonds Standard v4. https://www.climatebonds.net/climate-bonds-standard-v4
11. Climate Bonds Initiative, Certification. https://www.climatebonds.net/certification
12. The CBS V4.2 stipulates the following the issuer has 2-5 (and exceptionally 10) years to allocate the proceeds. Update reports must be submitted annually (until the bond matures) to Climate Bonds or posted on the issuer's website, the first of such reports being due from12 to 24 months after issuance. The update report must include: confirmation of ongoing eligibility of the assets, amounts allocated to the eligible assets, and impact reporting where required. At least one post-issuance verification report by an Approved Verifier at full allocation is required. For more information please see: CBI_Standard_V4-2_02D.pdf
13. Climate Bonds Initiative, May 2021, Post-Issuance Reporting in the Green Bond Market 2021. https://www.climatebonds.net/resources/reports/post-issuance-reporting-green-bond-market-2021 *(NB: this is the latest global report but two more exist from 2019 and 2017)*
14. Climate Bonds Initiative, April 2022, Post-Issuance Reporting in China's Green Bond Market 2022. https://www.climatebonds.net/resources/reports/post-issuance-reporting-chinas-green-bond-market-2022
15. Climate Bonds Initiative, March 2024, Sustainability-Linked Bonds: Building a High-Quality Market. https://www.climatebonds.net/resources/reports/sustainability-linked-bonds-building-high-quality-market
16. Electronic Municipal Market Access. 2024. Municipal Securities Rulemaking Board::Emma (msrb.org)
17. Win.d. 2024. 万得信息网 (wind.com.cn)
18. Green Bond Transparency Platform. 2024. Bonds — GBTP (greenbondtransparency.com)
19. Some documents were only found through Google.
20. Climate Bonds Initiative, Green Bond Database Methodology. https://www.climatebonds.net/market/green-bond-database-methodology
21. Climate Bonds Initiative, Social & Sustainability Bond Database Methodology. https://www.climatebonds.net/files/files/CBI-Social-and-Sustainability-Bond-Methodology-14092022.pdf
22. The total amount of bonds in the sample for this report was approximately 5100, while the total amount of bonds for the 2021 report was approximately 700.
23. Selecting the largest issuers creates some bias in the sample as larger issuers are more likely to report and to do so with higher quality. On the other hand, these issuers represent the lion's share of the market, often have more complex reporting, and provide more examples of best practice. Smaller issuers can and should equally use the guidance in this paper, which all else equal should be simpler to apply if only or two projects/categories are financed.
24. The classification of developed markets (DM) and emerging markets (EM) is based on MSCI market classification Market Classification - MSCI.
25. Climate Bonds Initiative. 2024. Climate Bonds Standard Version 4.2. CBI_Standard_V4-2_02D.pdf (climatebonds.net)
26. Only a few more have issued, all considerably smaller.
27. Climate Bonds Initiative. 2021. Post-issuance reporting in the green bond market. cbi_post_issuance_2021_02g.pdf (climatebonds.net)
28. Although there is some bias in the issuers selected since larger issuers are more likely to report with higher quality.
29. Climate Bonds Initiative. 2021. Post-issuance reporting in the green bond market. cbi_post_issuance_2021_02g.pdf (climatebonds.net)
30. IDB's Green Bond Transparency Platform (GBTP) which facilitates free and first-hand granular, credible, and comparable data for evidence-based decisions, aligned to international standards such as Climate Bonds and ICMA is an excellent example of how this could be introduced on a wider scale. Since its launch in April 2021, more than 100 issuers have reported covering approximately 230 issues on the platform. Please see more information on the GBTP later in this report.
31. The individual issuer count adds up to 79, which is more than the real total of 75. This applies throughout the analysis in this paper and is primarily due to differences between bonds from distinct subsidiaries which fall under the same parent group, or due to differences between GSS themes from a given issuer.
32. Reporting share based on allocations, which Climate Bonds considers to be the core requirement.
33. Among the six issuers were two sovereigns, two government-backed entities, one local government, and one financial corporate.
34. No repeat issuers report privately for some bonds and publicly for others, i.e., all issuers with private reporting did so for all their bonds.
35. The same principle of higher reporting shares by amount issued exists across issuer types.
36. The results shown on the chart are based on allocations.
37. Providing cumulative data never replaces the need for annual data.
38. Excludes bonds with undisclosed refinancing and partial refinancing but unknown %.
39. These figures refer to the maximum share of refinancing with at least one bond (not necessarily all the bonds from a given issuer).
40. Relevant bonds are included, which generally means those yet to be fully allocated or outstanding.
41. Ministirio de Hacienda. Sustainable Bonds
42. Impacts may refer to project output/outcomes as well as impacts, but these are collectively referred to as impacts in this report and most available guidance.
43. A separate Excel file including all the raw impact indicators and mapping to final impact indicators is also included on Climate Bonds' website.
44. Estimated impacts can make use of direct measurements, but were considered estimated if at least one data point was an estimate.
45. ICMA, June 2024, Handbook – Harmonised Framework for Impact Reporting. https://www.icmagroup.org/sustainable-finance/impact-reporting/green-projects/
46. Please note while SLBs and SLLs are not the focus of this report for completeness reference has been made to them in this section.
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53. Reports from EM sovereign issuers are often harder to find than in DM. This is also due to less clear/organised websites or websites sometimes being down for some time. Some were only found through Google.
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55. The Province of Ontario has a similar level of disclosure.
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68. The figures add up to much more than the real total as all issuers use multiple and several report many impact indicators.

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